Research on Knowledge Creative Mechanism, Path and Countermeasures for Chinese Enterprises

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Abstract: Knowledge innovation is the source of lasting competitive strength for enterprises as well as the driving force for economic development. This paper studies the knowledge innovation theory and analyses its framework. Aiming at the lack of original innovation and effective encouragement, repeated construction, setting up the knowledge innovation model based on knowledge alliance，and low-efficiency of knowledge resources deployment in Chinese enterprises, this paper explored the operational mechanism of enterprise knowledge innovation, and brought forward the path and countermeasures for Chinese enterprises knowledge innovation, execute knowledge innovation synergy, namely implementing the integration and optimization of knowledge resources, establishing enterprises knowledge strategic alliance, intensifying the distribution motivation reform etc.

Key words: Knowledge Innovation, Knowledge Strategic Alliance, Explicit Knowledge, Implicit Knowledge

1 Introduction

We know that knowledge is the source of human society developing while the creative activity is the strong drive of human society developing. During the process of human society developing, knowledge accumulation and creative development exist from beginning to end. Therefore, no matter the agriculture economic age or the industrial economic age, both of them are similar to knowledge-based economy age where knowledge works as an important production factor in the economy system. Along with the development of times, knowledge-based economy attracts has taken shape and the creative activities become to the senior factor of the competition capacity for enterprise, industry and state.

2 Definition and expansion of knowledge innovation

The concept of knowledge economy is firstly raised by Fulici Croup in 1962 while Daniel Bell etc. have a further understanding of the late-industry society in 70's. After that, Alvin Toffler put forward the concept of late-industry economy which is closed to knowledge economy in early 80's and Deng Xiaoping (1988) raised the point of "science technique is the first productivity". Afterwards, the concept and nature of knowledge economy is advanced by United Nations (1990), and organization of economy cooperation and development (OECD) defines knowledge economy as knowledge- based economy which means the economy is based on the holding, distribution, producing, assigning, using, consuming of knowledge. The knowledge-based economy become to a new economic style after agriculture economy and industrial economy.

The innovation of knowledge economy is the basic driving force of economic development, productivity growth and the improvement of people's living standards. And its core is knowledge innovation, which includes technology innovation, institutional innovation, and management innovation. For knowledge innovation, technology innovation is the core and basis, management innovation is the guarantee, and institutional innovation is the precondition. The notion of "technology innovation" was first raised in "Theory of Economic Development" by Schumpeter in 1992. According to Schumpeter, "innovation" refers to a kind of change in production function or reorganization of production elements and production conditions, and the introduction of production system, which is to change technology system, a process aiming to obtain entrepreneur profits or potential excess profits.OECD defined "technology innovation" as new products and new skills, and distinguished technology changes in products and skills. On the other hand, management innovation refers to creating a new and more effective resources integration mode. Both the whole process of management and the specific details can be the subjects of management innovation. As for institutional innovation, it refers to reforming the existing system. Induced institutional innovation refers to changing and replacing the existing system, or creating new system arrangement, which is self-advocacy, organization and implementation by one person or a group of people when

profit opportunities are affected[1]. This kind of institutional innovation is spontaneous, localized, non-normative, and with low institutional level.

3 The theoretical framework and application of knowledge innovation mechanism: SECI model analysis

3.1 SECI model analysis

First, we can divide knowledge into two types: explicit and implicit. Explicit knowledge can apply in everyday life with ease, can be expressed by written or systematic language, and can be shared in organizations by form of data, scientific formulas, guidelines, manuals etc. Furthermore, this kind of knowledge can be easily processed, transmitted and stored. On the contrary, implicit knowledge reflects in the double sense of physical and mental being, difficult to communicate with others. The initial knowledge innovation derives from the different forms of individuals' existence. we define explicit knowledge as "living knowledge", and implicit knowledge as "Resting knowledge". It is sensible that resting knowledge and living knowledge exist at the same time, and both accumulate constantly. Usually, resting knowledge does not work because it is suppressed or denied by living knowledge. But the initial knowledge innovation appeared when knowledge reorganization produced in the process of transmitting resting knowledge into living knowledge. Prof. Ikujiro Nonaka and others from Japan Advanced Institute of Science and Technology used four patterns to describe the ongoing creative process of knowledge, namely, socialization, externalization, combination, and internalization. This process is called SECI process[2] as Figure 1.

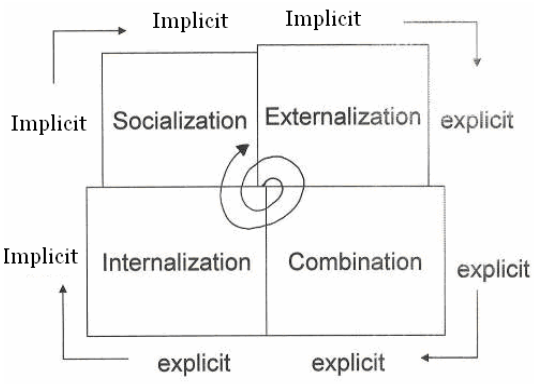

Figure 1 knowledge spiral-SECI process

This innovation mechanism is used to analyze the problems of the current management innovation. Socialization refers to creating new implicit knowledge by sharing implicit knowledge; Externalization refers to creating explicit knowledge easy to share with others through implicit knowledge; Combination aims to create more complicated and systematic explicit knowledge set; Internalization transforms the existing explicit knowledge into new implicit knowledge in order to enter the next knowledge innovation[3].

In order to better promote innovation, managers should be good at finding the existing implicit knowledge, and create favorable environment to promote the transmission and share of implicit knowledge. Also managers ought to innovate the management methods, promote internal innovative dialogue, and encourage employees to think innovatively through brain storm in order to assist the externalization of implicit knowledge. Furthermore, managers should properly deal with the dissemination work, making sure that everyone can get the necessary explicit knowledge, and managers implement effective integration then. Last but not least, managers should encourage everyone to expand the existing knowledge base to form stable values, which is helpful for the transmission of explicit knowledge into new implicit knowledge.

3.2The knowledge innovation mechanism & application: knowledge transfer KSA model

Here build knowledge transfer operation framework in view of knowledge strategy alliance (KSA).To face the intense market competition, enterprises establish technology and knowledge alliance on basic of the common values and vision, create internalized market within the knowledge alliance, share knowledge and technology to achieve the target of the strategy alliance. The process of knowledge internalization is the process of knowledge transfer, continuously cycle operating by knowledge transfer to achieve technology innovation[4]. Construction of the technology innovation mechanism based on the knowledge transfer KSA (Knowledge Strategy Alliance) model (Figure 2)

This KSA loop process is: explicit Knowledge; make explicit knowledge internalize; implicit knowledge (new knowledge system), which means the phase completion of knowledge innovation: from explicit knowledge to implicit knowledge to achieve knowledge innovation. Here the whole process of knowledge transfer has been completed, and it is also a leap in knowledge innovation, which will constantly promote knowledge innovation to improve the competitiveness of KSA members, and thus maintain their competitive edge and market position. Seen from the knowledge transfer KSA model, before the transfer of knowledge (internalization), part of the knowledge gained by the enterprises in the knowledge strategy alliance (KSA) is explicit knowledge, which exists in the explicit form as well. Finally, with the KSA pattern and platform, the

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enterprise members step across the culture differences and effective cross-culture management, make the obtained explicit knowledge implicit (internalized), and then incorporate the knowledge into the original knowledge system in the strategy alliance to form new knowledge system.

As a result the process of knowledge transfer is a cycle, the technology innovation is constant, and that is to say, knowledge innovation is constant. Seen from the KSA analysis above, technology innovation that conducted in the form of knowledge alliance can share resources and risks, complement advantages, obtain higher yield with fewer investment, and create high business interests and social value.

4 The countermeasures of knowledge innovation and innovation mechanism for Chinese enterprises.

4.1Implementation of the knowledge resources integration and optimization

To solve the problem of technology innovation basic on national level, we can separate the Academy of Sciences with research institutes, making the Academy of Sciences become the institution and advisory body of the highest honor in the science field. Also, it is necessary to change the functions of the Academy of Sciences, turning the duty of management to coordination of projects, reward the advanced, approval acceptance in scientific research results, promotion of the transformation of scientific and technological achievements, and the implementation of supervision. in order to take the advantage of the comprehensive discipline in universities, vigorously develop inter-discipline, and occupy the forefront of international science. Research universities should also be incorporated into the core of the national knowledge innovation system, and thus full play the advantage of the comprehensive academic, sound research echelon, and favorable research environment in universities. Additionally, it is necessary to change the orientation of basic research funding, making the research universities the investment focus. And in this way we can establish a national basic research mode in which research universities are the main part in order to increase our competitiveness of basic theory research.

4.2Create a learning organization, to improve the value of implicit knowledge, promoting knowledge transfer and innovation

Learning organization is an organic, highly flexible, flat and sustainable development organizations, by fostering an atmosphere of learning organization, give full play to the staff of Creative Thinking. Implicit knowledge runs through the whole process of knowledge accumulation, if the lack of tacit knowledge, whether personal or business, you can not access and absorption of other knowledge. Therefore, enterprises should strive to create a learning organization, and enhance the learning atmosphere within the organization to carry out the exchange of knowledge between employees and the sharing of knowledge within the organization to achieve continuous innovation. By fostering and creating a learning organization, the body of knowledge to build and maintain the necessary knowledge and technical ability to use transformation to improve the value of tacit knowledge and knowledge innovation.

At the formative stages of new knowledge sources, all required knowledge showed as explicit knowledge, and existed in the form of explicit knowledge. After repeated practice, the members learned the implicit knowledge of other organizations through communication, cooperation, advising, imitation etc. At the same time, they internalized some of the knowledge to form the organization's own implicit knowledge, which incorporated into the organization's original knowledge system[5].In the process of transforming explicit knowledge into implicit knowledge, the capability of enterprise has been improved, new knowledge and ability system has been formed. The capability of enterprise has been continuously improved and accumulated from quantitative to qualitative change, This knowledge transformation and innovation effect is clearly shown.

4.3Construct knowledge alliance and execute knowledge innovation synergy to improve knowledge innovation capacity for enterprises

4.3.1 Establish multinational strategy alliance

As a significant innovation of enterprises internationalization, multinational strategy alliance is a new kind of international division of labor with more complexes and competitive, as well as a major path of enterprises innovation on tech and knowledge. Multinational alliance has been developed around the board well and quickly by its strong competitive force. As reported, among the 150 large scale multinational companies, more than 90% companies have established strategy alliance within different types and tech innovation takes the main part of these alliances [6].IBM and Ricoh are running the business of compute; meanwhile, both of them are developing software system with Nippon Steel and operating financial management system with Fuji Bank, etc. this kind of strategy alliance bring enormous profit for them among the competitive market of Japan. Recently, some famous companies such as Lenovo Group, Huawei, Haier have formed strategies alliances with several well-known multinational companies: IBM, GE, Intel, HP, GM. Sharing on knowledge resource and profit, the strategy alliance can give full play of synergy

and lower the cost of research and trade to realize much more potential margin, which can strength the enterprises competitive force among the new alliances.

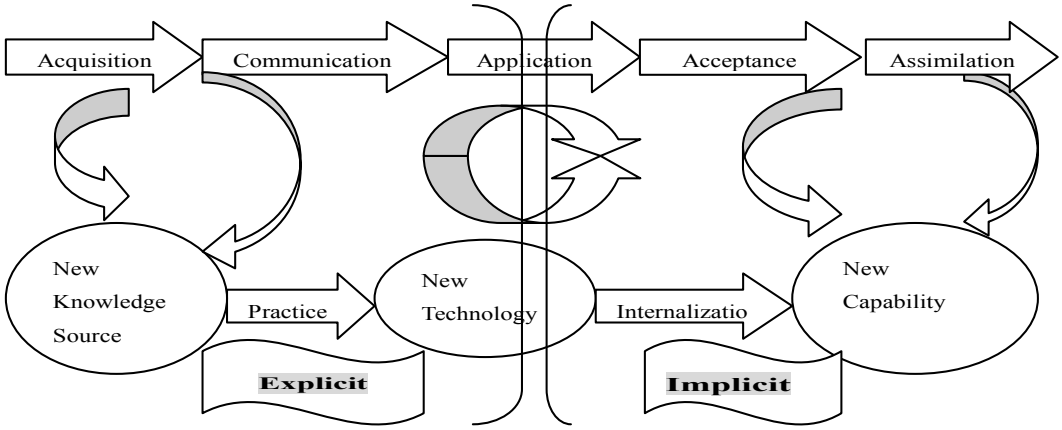

Figure 2 Mechanism of Technological Innovation in Knowledge Alliance's KSA Model

4.3.2 Executive synergy strategy of knowledge innovation

The rapid development of internet tech pushes the expanding of knowledge and shortens the life cycle of new products. Under this situation, autonomy pattern of knowledge innovation can not meet the need, so that synergy knowledge innovation become to the new trend. Synergy knowledge innovation coalesce knowledge recourse in different organizations and make effect of "1+1>2". Forming knowledge innovation on supplying chain, enterprises can cooperate in upper resource to lower the cost of product within short time to enhance the competitive force. Synergy knowledge innovation coalesce knowledge recourse in different enterprises to realize the effect of integration. Synergy knowledge innovation mode means that different enterprises under same innovation strategy coalesces knowledge chain to realize the screw type knowledge innovation process.

4.4Implementation of institutional innovation and mechanism reform to improve enterprise knowledge management

The countermeasures of knowledge management system innovation are as the following aspects:

Deepen the property right system, establish the human capital system that is compatible with knowledge economy, deal with the basic work of knowledge management, and construct favorable policies and laws external operation environment for innovation.

Deepen the reform of distribution system and build the distribution system according to knowledge on the basis of human capital property right.

Distribution according to knowledge refers to a form of distribution that with their knowledge and capability, the human capital owners obtain the corresponding income on the basis of the performance and knowledge results they created. The "knowledge" in distribution according to knowledge should include knowledge work that put into various economic activities, knowledge property right, and knowledge labor force, namely, human capital.

Establish and perfect market system of knowledge resources distribution. This new market system includes: knowledge property right system includes knowledge property protection system and knowledge property trading system. Knowledge-based workforce market system includes scientific norms and trading rules of knowledge-based workforce. Deepen the reform of science and technology system, establish and perfect the national innovation system that faces the field of knowledge economy.

5 Conclusions

Knowledge Innovation is an inexhaustible source of enterprises and national competitiveness as well as Knowledge innovation is the cycle process of knowledge transfer and the integration of knowledge resources. SECI model reveals the operating rules of the interaction between implicit knowledge and explicit knowledge. At the information age with highly development, knowledge transfer, based on knowledge strategic alliance (KSA) shows the stronger vitality. Implicit knowledge transferring to explicit knowledge is the core factor of knowledge management; it need enhance the value of implicit knowledge to solve the problem of insufficient knowledge innovation in original innovation inherent in our country, attach importance to the body of knowledge and innovation, the role of individuals, realizing internal and external knowledge resources integration and optimiza-

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tion, creating learning organizations, formation an organizational culture conducive to knowledge innovation incentives atmosphere and innovation, building knowledge and strategic alliances, collaborative knowledge implementation strategies, and improve knowledge innovation capacity of enterprise.

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