

Study on Knowledge Sharing Pattern in Industry Clusters Based on SECI Expand Model

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Abstract: Knowledge sharing in industrial cluster is the main source of core competitiveness of industry cluster. The paper analyzes the research status of knowledge sharing in industrial clusters innovation, and probes into the basic link in traditional SECI (Socialization, Externalization, Combination, and Internalization) model, studies the industry cluster knowledge sharing mode. Combining with the above industry cluster of spiral knowledge sharing through the dynamic evolution, and vertical and horizontal correlation, multiple subjects, realize nonlinear, spiral development of knowledge within a cluster, constitute the spiral of the sharing and innovation process of several knowledge spiral. SECI model at every level and level will happen, and between the whole processes of knowledge creation is dynamic interactions spiral process of dominant and recessive knowledge.

Key words: Industrial clusters; SECI model; Knowledge sharing; Mode innovation

1 Introduction

Industrial clusters have already become the important trend of economic globalization, it is also the important pillars of the national competitiveness and economic development, which are mainly embodied in the relationship of the enterprise and other entities in a particular geographic region and the set gathers, within a cluster subjects around a particular function competition and cooperation, and by establishing a close contact improve the collective competitiveness. In the global market competition, advantage industry has often have obvious area cluster characteristics, and produce some advantage enterprise and brand, to the country and cluster regional economic development plays an important role. The basic reason is the industry through the cluster development and realize many enterprises geographically concentrated, construction cooperation innovation environment and knowledge sharing platform, make it become the regional innovation power source, and show the spiral knowledge sharing the vigor and the innovation ability, for the coordinated development of regional industrial economic society create conditions and basis. Just as Porter says, the factors that govern the cluster of today's world economy map, it is a remarkable characteristics of each country the national economy, the regional economic even city economy, especially in a developed economy. Industry cluster innovation and development get the academia, the government and the enterprise high attention in all countries in the world.

The existing research results for deeper into China industry cluster cooperation innovation and knowledge sharing theory and practice, provides some theoretical basis. Generally speaking, in the study of industry cluster later than western developed country, the existing research results are mostly in the developed countries' the study of industry cluster, introduction, tracking based on the development of industrial cluster in combination with actual and obtain. Because of the development of the theory and practice of the application stage lag, the related research still exists in the following several aspects' the limitations^[1-2]:

(1) Industry cluster cooperation innovation question discussion from the knowledge sharing, related model study involved also less.

(2) For industrial cluster cooperation innovation level of knowledge sharing theory, operation mechanism and strategy research is not choice and so on. Scholars with industrial cluster cooperation innovation, knowledge sharing, the study of such knowledge helix a deep, but based on the spirals of the knowledge sharing of industry cluster, the influence of the cooperative innovation, operation mechanism, such as design pattern is not much, related research also consider was weak, research is not much.

(3) Analysis of industry cluster cooperation innovation and knowledge sharing subject field of vision is more one fold, interdisciplinary research is less. In the background of globalization, the national competition and regional growing competition, the size of the competitiveness depends on the level of the ability of innovation and regional industry cluster the degree of knowledge sharing.

The research presents situation and the comprehensive analysis of the limitation of industry cluster at home and abroad, the knowledge sharing mechanism of industry cluster, the relative lack of from internal subject, between inside and outside related subjects, between cluster cooperation and cluster

innovation and knowledge of the interaction of industry cluster Angle of knowledge sharing system research relatively rare. Therefore, this article view industry cluster as dynamic open knowledge sharing system of industry cluster, of cooperative innovation of knowledge sharing model system studies.

2 Basic Link of Traditional SECI Model

Nonaka^[3] think knowledge creation is a self beyond process, the enterprise knowledge divided into tacit knowledge and explicit knowledge two kinds. Tacit knowledge includes belief, metaphor, intuition, thinking mode and the so-called "hang", is the meaning of this living style knowledge; and the dominant knowledge, also known as the traditional knowledge can be, can use standardization and systematization of language communication, has some of the storage media, to spread easily, can share and diffusion etc. Nonaka points out, in the process of enterprise innovation activities of tacit knowledge and explicit knowledge both is interact with each other, transform into each other, the recessive knowledge and the interaction of the dominant knowledge to promote the ontology levels of rise and development, realize the spiral process of the organization knowledge sharing and innovation; In some knowledge sharing and moderate coincidence, the construction of the common cognitive knowledge basis of the tacit knowledge, and promote the exchanges and interaction.

Knowledge spiral from already had knowledge platform for knowledge, knowledge gap across goal, to realize the knowledge spiral. Nonaka think that SECI model, namely tacit knowledge and explicit knowledge transfer between must go through four stages, namely "Socialization, Externalization, Combination, and Internalization". Its structure is shown as shown in Figure 1.

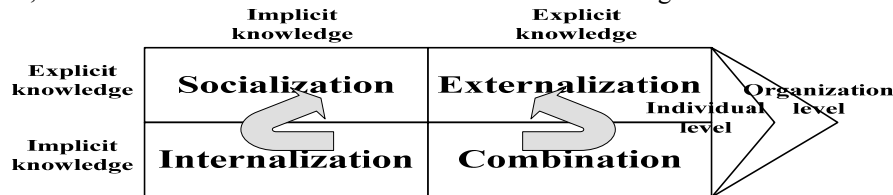


Figure 1 Framework for Traditional SECI Model

2.1 Socialization

(1) Socialization. That is, through to organize the internal sharing platform, getting some technology behind the tacit knowledge, and taking this tacit knowledge within the organization to realize in transfer and communication, and promoting its to the enterprise internal knowledge conversion, by some of the individual's recessive knowledge into members of the socialization of knowledge (such as enterprise culture, technology concepts and proprietary technology know-how, etc.) of the process. This kind of social enterprise internal knowledge transformation is mainly by the enterprise internal activities of the observation, teacher and pupil type the imitation and innovation practice to finish.

2.2 Externalization

Externalization is to use the means and language tools such as metaphor, concept, model and other effective express tacit knowledge, to promote tacit knowledge of externalization and glasnost, the aim is to promote the enterprise internal knowledge sharing, concreteness of more practical knowledge in the organization is easy to transfer and transfer, and deep knowledge is not easy for others acquisition. This phase is mainly to the recessive knowledge transformation by explicit knowledge of effective systematic arrangement and knowledge processing, realize the order and explicit knowledge, promote knowledge increment serial.

2.3 Combination

Knowledge subject realization of implicit knowledge and explicit knowledge is effectively integrate, interactive and alliance, mainly through the medium of knowledge such as all kinds of files, conference, telephone talks formed or email language and expression, knowledge symbols through some knowledge requirements to achieve the combination of all kinds of the dominant knowledge and systematized. This phase is a primary stage is to realize the dominant knowledge into a more advanced stage of the dominant knowledge, the new knowledge system beyond the original knowledge structure, realize the organization knowledge system is expanded and knowledge sharing.

2.4 Internalization

It is a stage of knowledge's changed state that explicit knowledge changes into the recessive knowledge operation's process After the joint of knowledge become more widely meaning explicit knowledge of and the knowledge for the whole organization system, it is more valuable knowledge

structure, as well as through the dominant knowledge accumulation, and take these accumulated the dominant knowledge visualization, further more specific, systematic, and promote new knowledge to form, this kind of new knowledge again through the internalization "hidden", namely become into a certain specificity core technologies, is organized internal employee absorbing and digesting processing sublimation of tacit knowledge into their own. In the process of specific knowledge visualization, practice and training and practice is very important, through the internalization process, and finally form the enterprise internal new tacit knowledge.

SECI model reveals the knowledge helix knowledge into the basic process of the link, knowledge sharing and innovation is the important component parts, and reflects the essence of knowledge sharing features. SECI model realizes the individual knowledge and knowledge organization in the organization transformation and the diffusion, and reveals the knowledge increment and innovation of the inherent law of knowledge is in the four process realized by "the recessive knowledge-the dominant knowledge-the recessive knowledge-the dominant knowledge" of continuous transformation. In this process, the knowledge conversion, transfer and create is a dynamic process of progressive, when individuals tacit knowledge complete a knowledge helix movement, into new tacit knowledge, new knowledge spiral movement started again. Industrial cluster is the knowledge sharing purposes, in order to increase the competitiveness of the enterprises cluster, also means to effectively expand industry, enterprise organization and individual level knowledge level of the scope of knowledge and knowledge sharing degree. Nonaka proposed the principle of knowledge helix prophesied in organization knowledge, and several activities through internal, operation, transformation, helical circular, effectively expand original knowledge system, promote the boundary of the knowledge sharing and knowledge innovation. In industry cluster, many times repeatability of knowledge, promote the spiral knowledge sharing and continuous cooperation innovation. So the knowledge sharing is the important power organization knowledge development and the basic rule, knowledge as a continuous cycle of spiral process, not a one-off, also not the SECI model, but running process of many times knowledge spiral of several the SECI model, which is running the presented the essence of knowledge sharing and innovation development.

3 Knowledge Sharing Expand Analysis in Industry Cluster

SECI model of Nonaka make a further research on enterprise and between enterprise and enterprise's knowledge sharing, this paper reveals the one-time knowledge production and the starting point of the system, indicating that " implicit knowledge - implicit knowledge ", " implicit knowledge - explicit knowledge ", " explicit knowledge - explicit knowledge "and" explicit knowledge - implicit knowledge "the knowledge transformation process, for further study knowledge sharing and innovation has the important enlightenment. SECI model at every level and level will happen, and between the whole processes of knowledge creation is dominant and recessive knowledge of dynamic interactions spiral process. Nonaka called this process " knowledge spiral". In this paper, the SECI model, expand the industry cluster as dynamic, open, the interaction, the spiral knowledge sharing system, and puts forward the knowledge sharing model. The so-called industrial cluster knowledge sharing is to point to by several knowledge helical circular spiral of the knowledge sharing, through the government, enterprises, scientific research institutes, intermediary services and so on four main structure building, relying on spiral several "recessive-recessive knowledge of the dominant" thread, and linked, so more than once, repeated, constantly absorbing knowledge creation, application, transformation, and spread, and realize the knowledge from a lower to a higher spiral, and promote the change of industry cluster knowledge sharing and the spiral process of cooperation innovation ability. This concept includes the following aspects of content:

3.1 Knowledge sharing embodies the dynamic evolution process of industry cluster knowledge sharing

Industry cluster the knowledge into the experience from a enterprise to the next between enterprise's close cooperation and sharing knowledge, to realize in the spread between enterprises constantly, circulation, spiral development of knowledge sharing and operation process, each a knowledge flow link all has the attenuation and updated. In other words, the knowledge in a enterprises is not identical to the other enterprises, but after the internalization of processing enterprise, realize the transformation of the new knowledge value-added and innovation. Therefore, the process of knowledge diffusion and sharing is not simple and nonlinear, but the dynamic evolution, spiral progress through these knowledge, knowledge process evolution process of knowledge, to realize the systematic and

complex and overall design of development, from a single diversified knowledge into knowledge sharing and innovation of the whole leap.

3.2 Knowledge sharing embodies the industry cluster the knowledge among the subjects and cross, the complexity of the knowledge relation

Knowledge sharing including lateral and longitudinal, several levels of contact and interaction between knowledge cross, so as to promote the exchange and sharing of knowledge industry cluster, the innovation, the diffusion and application. Vertical integration is industry cluster upstream and downstream firms in between the level of business contact and share knowledge, because of the construction of industry chain links of upstream and downstream of the business level, to direct link between the systematic knowledge link and ordering and come from different enterprise organization of face-to-face communication, imperceptible formed all kinds of tacit knowledge sharing and innovation. Based on the product value chain of cluster enterprise cooperation division of labor, longtime deepen mutual trust and knowledge sharing path dependence, help knowledge in product of the value chain sharing and sustainable development. Knowledge sharing in the upstream and downstream enterprise between enterprise's direct product value chain business contacts contributed to effective knowledge innovation.

Lateral ties are the same kind of products between producers of the knowledge of the contact. Due to the regional proximity of the convenience of cluster enterprise by between knowledge relations, transverse between enterprise's parallel knowledge sharing can eliminate various knowledge communication barriers, the equality of the lateral ties and knowledge, promote the exchange and sharing of cooperation knowledge cluster. Through the express their knowledge and innovation technology thought, into the explicit objectives and concrete action, make internal tacit knowledge to specific expression, to a certain extent promote between cluster enterprise knowledge sharing and innovation.

3.3 Industry cluster knowledge sharing is by government, enterprises, scientific research institutes, intermediary service organization formed by the knowledge spiral subject multiple subject interactive knowledge innovation system

As shown in figure 2 shows, the government provides the knowledge sharing infrastructure and policy support and the enterprise is the important knowledge sharing in the main body, the subjectivity of innovation is also powerful, scientific research institutes to provide for knowledge sharing knowledge and talent support, is also to reserves key technological innovation important source, intermediary service organization is to provide legal, knowledge sharing information, finance, marketing, planning, advertising and other services.

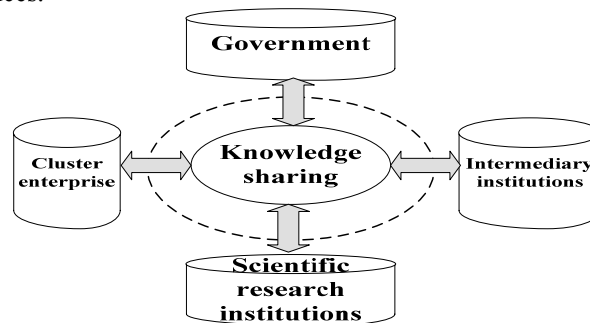


Figure 2 Main Body of Industry Cluster Knowledge Sharing

4 Conclusions

Research shows that, the industrial cluster knowledge sharing is by the knowledge exchange, share and innovation mode of the government, industrial cluster enterprises, scientific research institutes, intermediary services and so on four spiral structure and promote knowledge sharing and network learning, realize more than once, repeated, continuous knowledge mining, transfer, integration, innovation, and promote the spiral of the industry cluster knowledge sharing and cooperation innovation ability. Knowledge sharing as the industry cluster cooperation innovation provides new mode selection and power support. In the background of knowledge economy, the superposition of the knowledge sharing several SECI model and realize the expansion of knowledge and distillation of wisdom. After a knowledge thread of "explicit knowledge - implicit knowledge - explicit knowledge", realize changes of buckle knowledge from a lower to a senior, realization the spiral of knowledge sharing and

innovation.

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