

Research on Knowledge Transfer in Innovative Alliance*

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Abstract Knowledge transfer in innovative alliance is a present research focus that it is important to cooperative partners in alliance with the background of knowledge-based economy. The paper analyzes it from three aspects. Firstly, the contents of knowledge transfer between cooperative partners in innovative alliance include the transfer of process knowledge and the transfer of result knowledge, or explicit knowledge transfer and tacit knowledge transfer in common. Secondly, the influencing factors are knowledge stickiness, factors of knowledge sender, factors of knowledge receiver, otherness and collaboration, transfer channel and external environment. Thirdly, in order to realizing successfully knowledge transfer, work on target level, measure level and system level can be done.

Key words Knowledge transfer; Innovative alliance; Contents; Influencing factors; Realizing methods

1 Introduction

With the rapid development of society and durative transform of technology, an enterprise must innovate as long as it wants to survive and make progress. Early innovative activities in enterprises focused on technological fields. With the popularity of globalization and information revolution, virtual innovative alliance has attracted more attention, which has advantages of high efficiency and adaptable ability to markets, provision of products and services which are with low cost and high quality. Now innovative alliance is becoming an effective method by which enterprises can acquire rapid development in the era of knowledge-based economy^[1].

Nowadays researchers have recognized the important meaning of virtual innovative alliance to cooperate and innovate, but main research is still focusing on basic knowledge such as definition, constitution, traits and advantages of it. Systemic research frames about knowledge transfer among cooperative partners have not been formed yet. Present society has entered an era of knowledge-based economy; knowledge is becoming an important or even the mainest path of enterprises to acquire core competitive competence^[2]. With more and more fierce competition, it is growing a normal state that an enterprise depends on knowledge transfer as a method of getting new competitive advantages rapidly. Hence, on the basis of relative introduction and definition of innovative alliance and knowledge transfer, the paper will research knowledge transfer problems in innovative alliance from the point of contents, influencing factors and realizing methods, with the purpose of completing the theory frames.

In order to simplify research, the paper will take an innovative alliance composing of two cooperative partners as example, and it is the most basic and common form in innovative alliance.

2 Relative Definition and Literature Review

The competition state with knowledge has become more and more popular in enterprise competition after entering the new century. As the course of knowledge creation and the method to solve problems, innovation can bring high gains to enterprises and is an important path for enterprises to get competitive advantages. In order to decrease risk, cooperative innovation is more popular as sing enterprise has limited resources. Cooperative innovation can help enterprises not only decrease risk and cost but also get external knowledge and ability. Cooperative innovation is innovative activities happening among collaboration in enterprises, research institutes and universities^[3]. Innovative alliance is a kind of connection relationship which is built in innovative fields among organizations^[3].

Cooperative innovation requests effective knowledge communication and share among enterprises. It's a key of cooperative innovation whether information and knowledge can smoothly and rapidly flow among cooperative members. Knowledge transfer is a necessary course of cooperative innovation, which means knowledge transfers among different organizations. Or knowledge transfer is that knowledge getting from a situation is applied to another situation, which can happen in one enterprise or several enterprises^[4].

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3 Knowledge Transfer Between Cooperative Partners in Innovative Alliance

3.1 Contents of knowledge transfer between cooperative partners in innovative alliance

The essence of innovative alliance is cooperative innovation, and the centre of cooperative innovation is knowledge transfer and knowledge share between partners^[5]. The important function of cooperative innovation is also knowledge transfer between organizations. During the course of cooperative innovation multiple knowledge which is transferred between partners includes innovative ideas, outcomes, technology, business, systems, processes and so on. From the view of executing a cooperative innovation item, knowledge transfer between partners includes the transfer of process knowledge and the transfer of result knowledge. The transfer of process knowledge is present technology and its execution, business management, modern systems and processes. The transfer of result knowledge is innovative ideas, outcomes, their execution and transfer between co-organizations. Taking cooperative innovation between university and enterprise as an example, a university should transfer innovative outcomes and its method of industrialization, operation in production and management to the enterprise. Only on the condition of realizing the transfer of process knowledge and result knowledge at the same time, cooperative partners can understand the purpose of innovation, get ideal achievements of innovation and form professional innovation which can satisfy cooperative partners.

Or there are explicit knowledge transfer, which includes professional reports, lectures, brochures and other literal materials, and tacit knowledge transfer, which includes technology, cognizance, experience and value. Tacit knowledge transfer and amalgamation are more complicated and pivotal and it plays an important role during the executing course of cooperative innovation.

3.2 Influencing factors of knowledge transfer between cooperative partners in innovative alliance

The paper regards own stickiness of knowledge leads to difficulties in knowledge transfer. At the same time the course of knowledge transfer is disturbed by external resistance which includes intention and ability of knowledge sender, motivity and ability of knowledge receiver, otherness and collaboration between two partners, transfer channel of knowledge and external environment. It is own stickiness of knowledge and resistance when transferring that make difficulties in knowledge transfer. On the basis of it, the paper builds a concept model of influencing factors of knowledge transfer between cooperative partners in innovative alliance, showed as Figure 1.

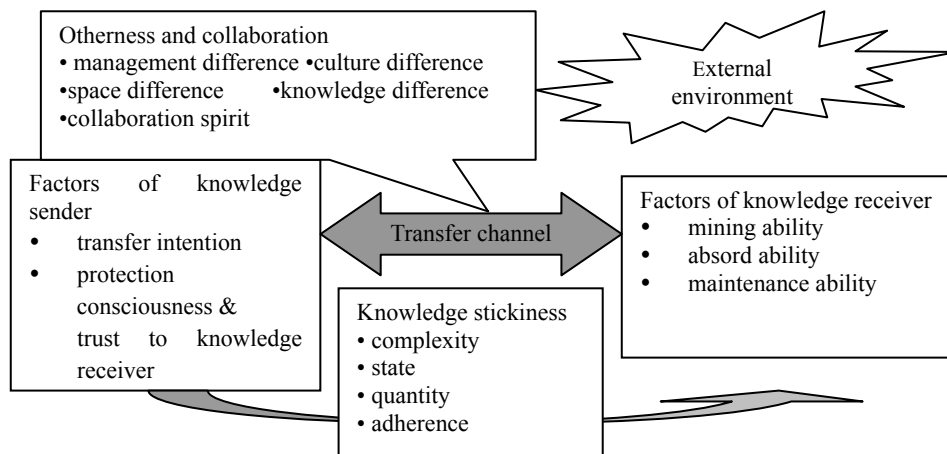


Figure 1 A Concept Model of Influencing Factors of Knowledge Transfer Between Cooperative Partners in Innovative Alliance

3.2.1 Knowledge stickiness

Knowledge stickiness means traits of knowledge, which are difficult to flow and transfer on its complexity, state, quantity and adherence. The complexity means the more complex of knowledge, the more abstract of technology, the more professional of structure and information, so less people can understand. The state means the existing of knowledge. It's obvious that explicit knowledge is easy to be understood and transferred and tacit knowledge is difficult to be done. The quantity of knowledge transfer also influences transfer effects. The more quantity of knowledge be transferred, the more

difficult to be transferred. The adherence means knowledge must specially cling to one knowledge partner and it is difficult to be transferred from one partner to another. So, knowledge stickiness is mainly decided by own traits of knowledge.

3.2.2 Factors of knowledge sender

The ability and intention of knowledge sender influence the effects of knowledge transfer greatly; even they have the decisive power to some extent. Firstly, before knowledge transfer happens, there must exist a knowledge origin that is inclined to realize knowledge share. The intention, the degree and the input of knowledge sender decide directly the effects of knowledge transfer. Secondly, protection consciousness and trust to knowledge receiver are important. If the knowledge sender is afraid of losing knowledge property, worries about not getting equal return after knowledge transfer, regards it is unworthy of spending time and resources, and supposes knowledge receiver maybe misuses or reveals knowledge irrelevantly, it will be lack of motivity to transfer knowledge. Thirdly, the ability of knowledge sender decides the level of knowledge transfer. The correct expression of knowledge sender influences positively what the receiver understands and masters.

3.2.3 Factors of knowledge receiver

Knowledge receiver is often a partner who needs knowledge or is in disadvantage status in cooperative innovation, such as enterprises in cooperation with universities. The ability of knowledge receiver is to find external valuable information and use it to make it accordance with organizational target. These abilities, which can influence extent and result of knowledge transfer, include knowledge mining ability, absorb ability and maintenance ability. Depending on these abilities, knowledge receiver can find, absorb and maintain, even integrate transferred knowledge.

3.2.4 Otherness and collaboration

Otherness between two partners in cooperative innovation include difference in management system, difference in culture, difference in space and difference in knowledge. The greater difference in these fields between knowledge sender and receiver, the more difficult knowledge transfer is. At the same time, close relationship between partners and broad cooperative innovation help to make knowledge transfer easy. Two partners need collaboration spirit to deal with problems of knowledge contents, methods, channels and property rights, especially during the transfer of process knowledge.

3.2.5 Transfer channel

Transfer channel also has great influence on knowledge transfer. All kinds of transfer channels make knowledge transferring multiple because of intangibility of knowledge. Then, transfer channels should be enlarged. It is an effective path of improving efficiency of knowledge transfer to choose suitable transfer channel according to real conditions of knowledge sender and receiver. The abilities of knowledge transfer among different transfer channels can be displayed by ability to act each other, breadth, structure and ability to use again, showed as Table 1.

Table 1 Ability of Knowledge Transfer among Different Transfer Channels^[6]

Transfer channel	Ability to act each other	Breadth	Structure	Ability to use again
Document	No	Low	High	High
Email & fax	Middle	Middle-low	High	High
Telephone	High	Middle-low	Low	Low
Meeting	Very high	Very high	Middle-low	Low
Discussion	Middle	High	High	Middle-low
Presentation with media	Middle-low	Middle-high	High	High
Training	Middle	High	High	Middle
Training with computer	Middle	Middle-low	High	High
Guidance	Very high	Very high	High	Very low

3.2.6 External environment

External environment includes social and physical environment which can influence knowledge transfer. They are divided into work environment and common environment in concept. Work environment refers to those factors which have direct effects on cooperative partners, such as technology, competitors, clients and policy-maker. Common environment refers to those factors which have indirect effects on cooperative partners, such as politics, economics, society and population. External environment is changing, which is the basic origin of uncertain factors in cooperative development and knowledge transfer. The changing of environment may influence cooperative principle and transferring condition, even serious changing may lead to broken relation of cooperative innovation.

3.3 Realizing methods of knowledge transfer between cooperative partners in innovative alliance

In order to transfer successfully knowledge in innovative alliance cooperative partners should focus on those main influencing factors, increase positive factors and overcome negative factors. Figure 2 builds a realizing system frame to accelerate knowledge transfer in cooperative innovation. The work is a systemic engineering; we can do from all aspects.

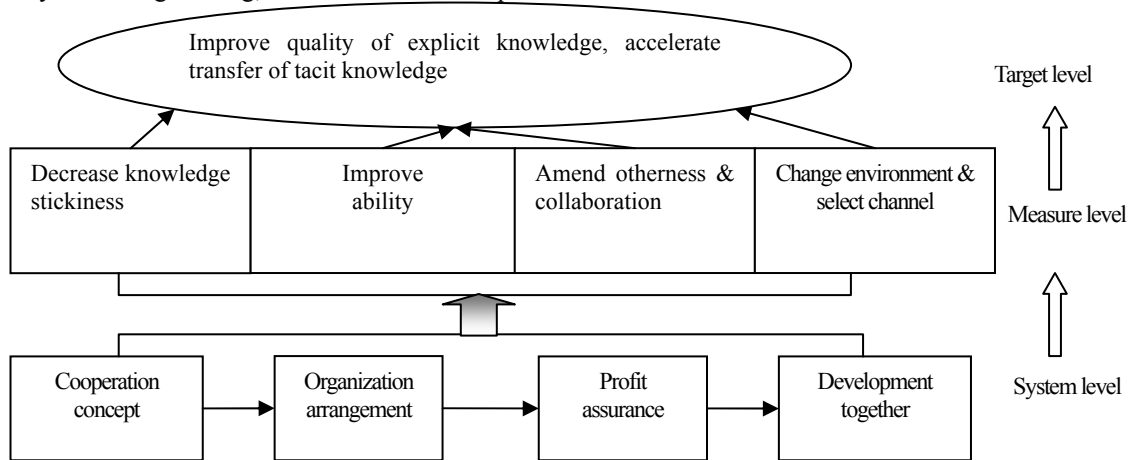


Figure 2 A Realizing System Frame to Accelerate Knowledge Transfer in Cooperative Innovation

4 Conclusion

The paper analyzes knowledge transfer in cooperative alliance. The contents of knowledge transfer between cooperative partners in innovative alliance include the transfer of process knowledge and the transfer of result knowledge, or explicit knowledge transfer and tacit knowledge transfer in common. The influencing factors are knowledge stickiness, factors of knowledge sender, factors of knowledge receiver, otherness and collaboration, transfer channel and external environment. In order to realizing successfully knowledge transfer, work on target level, measure level and system level can be done.

There are still many problems worth discussing deeply, such as ability evaluation, efficiency evaluation of transfer and relative demonstration research. The work will be done in later research.

References

- [1] Mowery D. C. The US National Innovation System: Origins and Prospects[J]. *Research Policy*, 1992, 21(1): 125-144
- [2] Lane P. J., Lubatkin M. Relative Absorptive Capacity and Interorganizational Learning[J]. *Strategic Management Journal*, 1998, 19(5): 461-477
- [3] Badaracco J. L. *The Knowledge Link: How Firms Compete Through Strategic Alliances*[M]. Boston: Harvard Business School Press, 1991: 99-102
- [4] Singley M. K. John R. A. *The Transfer of Cognitive Skill*[M]. Harvard University Press, 1989
- [5] Narayanan V. K. *Technological Strategy and Innovation: Sources of Competitive*[M]. Advantage Peking Press, 2002
- [6] Doss Dowson. Developing Knowledge Based on Client Relationship: The Future of Professional Services[J]. *Butterworth Heinemann*, 2000, (6):637