



SCIREA Journal of Economics

<http://www.scirea.org/journal/Economics>

August 15, 2023

Volume 8, Issue 4, August 2023

<https://doi.org/10.54647/economics790411>

## Case study on knowledge transfer control mechanism in the integration stage of cross-border M&A

Fan He<sup>1,\*</sup>, Fanchen Meng<sup>1</sup>, Shang Gao<sup>1</sup>

<sup>1</sup>School of management and economics, Beijing Institute of Technology, 100081, Beijing, China

**\*Corresponding author**

Dr. Fanchen Meng is currently a professor at school of Management and Economics , Beijing Institute of Technology. He earned a Ph.D. in Technology University of Berlin. Currently, his main research interests include cross-border M&A, Knowledge Transfer. So far, he has published over so many papers in peer –reviewed journals in these fields of research.

Email:[meng@bit.edu.cn](mailto:meng@bit.edu.cn) Tel:+86-13911817898

### Abstract

Acquiring and absorbing advanced knowledge of overseas subsidiaries of developed countries is an important task for Chinese enterprises in the stage of cross-border merge and integration. In the process of knowledge transfer, there exist so many problems, such as the quantity and value of knowledge transfer is lower than expected, which need to be solved by appropriate control mechanism. This paper takes Chinese enterprises' successful acquisition overseas developed countries enterprises' as an example, and take the process of acquiring and absorbing knowledge from subsidiaries in the integration stage as the research object, and this article also explores the following two research questions: Firstly, what is the impact of different types of control mechanisms implemented by the Chinese parent company on the amount and value of knowledge acquired by the Chinese parent company after the merger?

Secondly, will the type of control mechanism implemented by the Chinese parent company over its overseas subsidiaries be affected by the role played by the acquired overseas subsidiaries? This paper takes shenyang machine tool group to carry out the transnational merger and acquisition and knowledge transfer, on the basis of the case to conduct a case study, and put forward some propositions on the basis of case studies, and with the aid of grounded theory to build the knowledge integration develops slowly model belong to cross-border M&A integration phase , Through a series of discussions, the innovation points of this research are summarized, and new propositions are proposed based on the innovation points, so as to achieve the effect of enriching the theory. On this basis, the general rules of knowledge transfer control mechanism implemented by Chinese enterprises in the stage of cross-border merger and integration are finally obtained.

**Keywords:** Cross-border mergers and acquisitions; Knowledge transfer; Knowledge integration; Formal control mechanism; Socialized control mechanism; Single case study

## **1. Introduction**

### **1.1 Research Background**

After the successful implementation of cross-border M&A, how to transfer and integrate the advanced knowledge of overseas subsidiaries of developed countries in the integration stage of cross-border M&A has become an important issue it worth exploring. For the parent company, if it wants to acquire enough knowledge and ensure the value of the transferred knowledge, it should implement the most perfect knowledge transfer control mechanism for its subsidiaries.

Geringer believes that control mechanism refers to the management means and mechanism to implement control (Geringer,1989). More specifically, control mechanism refers to the combination of a series of complex relationships in the implementation of management and control. Bartlett believes that in the field of knowledge transfer of multinational enterprises, control mechanisms are usually divided into formal control mechanisms and socialized control mechanisms(Bartlett,1989). The so-called formal control mechanism can be understood as the parent company has a high degree of control over its subsidiaries, and the parent company decides the appointment and removal of senior executives, corporate strategy,

compensation and welfare system and corporate culture of the subsidiaries. The socialized control mechanism can be understood as that the parent company gives its subsidiary enough independent decision-making power to appoint and remove senior executives, determine the company's strategy, compensation and welfare system and keep its original corporate culture.

At the theoretical level, Ghoshal believed that the parent company should adopt different control methods for its overseas subsidiaries with different roles in implementing knowledge transfer control over their overseas subsidiaries (Ghoshal, 1989). Hao Jin and Wang Fengbin believed that there exist different role classification frameworks for overseas subsidiaries, and research conclusions on the control of parent companies on subsidiaries are diverse (Hao Jin & Wang Fengbin, 2017). In reality, a series of problems, such as the quantity and value of knowledge transfer lower than expected, appear in the process of receiving knowledge transferred from subsidiaries of Chinese cross-border M&A enterprises. These problems need to be solved by appropriate knowledge transfer control mechanism. Due to the weak knowledge base of Chinese enterprises from developing countries, it is difficult for them to identify the knowledge resources with strategic significance of overseas subsidiaries, which is the reason for the lower quantity and value of knowledge transfer than expected. To solve this problem, we also need to rely on appropriate knowledge transfer control mechanism.

## **1.2 Research Questions**

The research questions of this paper are as follows: Firstly, what are the effects of different types of control mechanisms implemented by the Chinese parent company on the amount and value of knowledge acquired by the Chinese parent company after merger and acquisition? Secondly, will the type of control mechanism implemented by the Chinese parent company over its overseas subsidiaries be affected by the role played by the acquired overseas subsidiaries?

## **1.3 Text structure layout**

The layout of the remaining parts of this study is as follows: The second part: through sorting out the relevant literature on the relationship between knowledge transfer, control mechanism and knowledge transfer in cross-border mergers and acquisitions, proposes what parts in this field are worth further exploration. The third part: in-depth analysis of typical single cases closely related to this topic, and on the basis of case analysis, put forward some propositions, and with the help of grounded theory research method for coding, gradually build a theoretical model. The fourth part: through discussion, this study is compared with previous literature,

and the unique characteristics and innovation points of this study are gradually elaborated. Based on the validity of the propositions proposed in the case study part one by one, new propositions are proposed based on the innovation points, so as to achieve the effect of enriching the theory. The fifth part: summarize the research conclusions, the existing limitations of this study and prospects for future research in this field.

## **2. Literature Review**

### **2.1 Literature review on knowledge transfer in cross-border M&A firms**

Gupta and Govindarajan (Authoritative scholars in the field of knowledge transfer) believed that knowledge transfer of multinational M&A enterprises should focus on process-based knowledge rather than prescriptive knowledge (such as monthly financial reports)(Gupta and Govindarajan,2000) .Gupta and Govindarajan also believe that transferred knowledge mainly includes market knowledge, distribution knowledge, packaging design and technology, product design, process design, procurement knowledge, management system and practice(Gupta and Govindarajan ,2000).

### **2.2 Literature review on the relationship between control mechanism and knowledge transfer**

In the field of knowledge transfer of transnational merger and acquisition enterprises, scholars at domestic and abroad often explore the influence of formal control mechanism and socialized control mechanism on knowledge transfer, and conduct comparative studies on the influence of these two control mechanisms on knowledge transfer. Based on the relevant research results of domestic and foreign scholars, it is not difficult to find the following points: Firstly, for multinational enterprises, formal control mechanism has a negative impact on the effect of knowledge transfer in most cases, while socialized control mechanism has a positive impact on the effect of knowledge transfer in most cases. Secondly, transnational merger and acquisition enterprise implement formal control mechanism over the sub-companies , the knowledge reserves value of subsidiary in most cases are difficult to reflect well, by contrast, transnational M&A enterprise implement social control mechanism over the sub-companies , the subsidiary knowledge reserves value in most cases are relatively easy to express. Thirdly, after multinational M&A enterprises implement the formal control mechanism for their subsidiaries , the strategic intention of knowledge seeking of the parent company seems to be highly utilitarian in the eyes of the subsidiaries. When transnational M&A enterprises

implement socialized control mechanism on their subsidiaries, the knowledge seeking strategic intention of the parent company seems not to be very utilitarian in the eyes of the subsidiaries. Fourthly, even if the parent company has a strong absorption capacity, if the formal control mechanism is adopted for the subsidiaries, the actual amount and value of knowledge transfer from the subsidiaries to the parent company may be lower than expected. When the absorption capacity of the parent company is weak, if the socialized control mechanism is implemented for the subsidiaries, the actual amount and value of knowledge transfer from the subsidiaries to the parent company may be better than expected.

From the academic research results on the control mechanism of knowledge transfer, we can find that there are still exist many unknown areas in this research direction, which is worth further exploration. These unknown areas following as: Firstly, what is the difference between the control mechanism typically applied when the parent company transfers tacit knowledge and the control mechanism typically applied when the parent company transfers explicit knowledge? Secondly, what are the different effects of implementing the same knowledge transfer control mechanism for tacit knowledge and explicit knowledge? Thirdly, In the practical level, what is the difference between the control mechanism implemented by the parent company for knowledge transferred from subsidiaries in developed economies and that implemented by the parent company for knowledge transferred from subsidiaries in emerging economies? Fourthly, how does the organizational trust of subsidiaries to the parent company affect the knowledge transfer control mechanism implemented by the parent company?

### **3. Case Study**

The reasons for choosing case study method and grounded theory in this paper are as follows: Firstly, research on control mechanism is an exploratory research on process mechanism, and qualitative research method is better for exploratory research on process mechanism. Therefore, this paper adopts the qualitative research method -combining case study method and grounded theory to explore the control mechanism. Secondly, it is better to use case study method to construct or deepen theory when exploring mechanism problems. Thirdly, with the help of the open coding method of grounded theory, the slow down model of knowledge integration and the "three change" model of knowledge slow integration of multinational M&A enterprises can be constructed.

The reasons why choose shenyang Machine Tool Group acquires German Heath Group are as follows: Firstly, the pursuit of successful global brand effect of shenyang machine tool group acquired European counterparts famous enterprise-Heath group, and successfully obtain and integrate the heath group's advanced technology, advanced management concept and marketing resources, and realized the "global brand effect" based on the Heath group's product, Heath group product once exported all over the world. Shenyang Machine Tool Group through implement the good control mechanism to the process of knowledge transfer, In the end, the company successfully absorbed the knowledge of overseas subsidiaries to achieve a "win-win situation". Secondly, Shenyang Machine Tool Group has implemented two different types of control mechanisms, namely formal control mechanism and socialized control mechanism, for its overseas subsidiary Heath Group, and the implementation of these two control mechanisms has also produced different knowledge transfer effects (specifically reflected in the difference in the amount and value of knowledge transfer). The research results of this case also provide a good reference for further understanding the different influences of formal control mechanism and socialized control mechanism on the quantity and value of knowledge transfer.

### **3.1 Case Introduction**

In recent years, Heath, a well-known German machine tool enterprise, was on the verge of bankruptcy due to the declining demand in The European and American markets, still high manufacturing costs and failed to achieve good research and development results after investing a large amount of product research and development funds . On October 29, 2004, Shenyang Machine Tool Group acquired German Heath Group. Through implement good knowledge transfer strategy, Shenyang Machine Tool has effectively acquired a full set of technologies, drawings, excellent management team and good international channels from Heath Group. In addition, relying on the "global brand effect" created by Heath Group in the global machine tool industry, it has successfully achieved the best-selling of its products abroad, and also achieved the strategic goal of knowledge transfer of cross-border mergers and acquisitions previously formulated.

The acquisition of Heath Group produced a "win-win" effect. On the one hand, lead to shenyang machine tool group greatly promote the research and development ability and service ability and so won a better reputation, and shenyang machine tool group has successfully created the international channels, access to international talent and all kinds of distribution channels, on the other hand, the production of heath group's is also get the highest

level in history.

### 3.2 Case Analysis

In fact, in the early stages of the process of knowledge transfer, when the Shenyang Machine Tool Group implemented a series of formal control mechanisms for Heath Group, such as Shenyang Machine Tool Group copying their all corporate strategy to Germany Heath Group, led to the Heath Group is reluctant to transfer advanced technology, is not willing to share the management team, refuse to share the status of the drawings to the Shenyang Machine Tool Group. Based on the above situation, this paper proposes proposition.

Proposition 1: when Chinese transnational merger and acquisition enterprises act as parent company in the process of knowledge transfer want get the useful knowledge of overseas subsidiaries, if the subsidiary knowledge level higher than that of the parent company, and beneficial to the parent company, the parent company implement formal control mechanisms to their subsidiary company, it will inspire subsidiary resistance, thereby reducing the willingness of overseas subsidiary transfer knowledge to their parent's company.

Shenyang Machine Tool Group immediately made a targeted adjustment strategy based on the fact that the willingness of Knowledge transfer of Heath Group was low. The senior executives of Shenyang Machine Tool Group finally decided not to implement formal control mechanism for its subsidiary Heath Group.

Shenyang Machine Tool Group decided to implement the social control mechanism to their subsidiary-Heath Group, the implementation of specific social control mechanisms include: Shenyang Machine Tool Group use Heath Group senior management team, give Heath Group the original autonomy, allowing Heath Group decide the company strategy, personnel system, salary welfare system, and build their own corporate culture.

After implementing socialized control mechanism for its subsidiary, Heath Group also made some changes and provided part of drawings to Shenyang Machine Tool Group. In view of this change, Shenyang Machine Tool Group has developed the following strategies: After Shenyang Machine Tool Group get Heath Group part drawings, have found that these drawings can be regarded as the core product development value, so, the Shenyang Machine Tool Group based on this part of the drawings, successfully applied for national invention patent, for these drawings to recruit the intellectual property rights (IPR) protection team, professional for transferring advanced technology to provide the protection of intellectual property rights. After the Heath Group found out, it immediately promoted the trust of Shenyang Machine Tool Group. In a subsequent

negotiation, Heath Group agreed to provide all drawings to Shenyang Machine Tool Group. At the same time, Heath Group is willing to share the senior management team with Shenyang Machine Tool Group, and also decided to transfer all kinds of advanced technology to Shenyang Machine Tool Group. Therefore, this paper proposes proposition2.

Proposition 2: In the process of receiving knowledge from overseas subsidiaries, if the knowledge level of the subsidiaries is higher than that of the parent company and is beneficial to the parent company, the socialization control mechanism implemented by the parent company to their overseas subsidiaries will strengthen the willingness of the overseas subsidiaries to transfer knowledge to the parent company.

Shenyang Machine Tool Group, as the leading enterprise in the domestic machine tool industry, has been mainly engaged in the production of small and medium-sized machine tools at the beginning, while German Heath Group is the leader in the global medium and large machine tool industry. If a machine tool enterprise wants to achieve a global reputation, it must be good at small and medium-sized machine tool R& D and manufacturing as well as medium and large machine tool R & D and manufacturing. Shenyang Machine Tool Group has successfully acquired medium and large machine tool manufacturing technology through the cross-border acquisition of German Heath Group and the successful acquisition of Heath group technology.

Shenyang machine tool group in the process of receiving advanced knowledge of Heath group, using all the original senior management team and staff of the heath group, this behaviour finally lead to prompted the speeding up of knowledge transfer, shenyang machine tool group used all the Heath senior management team and staff, the patent number from Heath group to shenyang machine tool group become three times compared with the past. Therefore, this paper puts forward proposition3.

Proposition 3: When Chinese multinational M&A parent enterprise receives knowledge from its overseas subsidiaries, the parent company can eliminate the distrust of the subsidiaries to their parent company by retaining the original executive team and staff of the subsidiary, thus improving the willingness of the subsidiary to participate in knowledge transfer and increasing the quantity and value of knowledge transfer.

Shenyang Machine Tool Group and German Heath Group have carried out equal discussions and consultations on the future development planning of Heath Group. On the basis of fully listening to the future development goals of Heath Group executives, Shenyang Machine Tool



Group has put forward some suggestions based on the actual situation of Heath Group. Finally, under the joint planning of Shenyang Machine Tool Group and Heath Group, the future development goals of Heath Group were formulated, which also prompted Heath Group to transfer many advanced technologies and advanced management concepts to Shenyang Machine Tool Group. Heath Group also shares its market resources in Europe with Shenyang Machine Tool Group. Because Germany is the number one power in the field of machine tool production in Europe, Heath Group is also very influential in the European machine tool industry, so many countries with slow development of the European machine industry such as some Eastern European countries are imported from Germany Heath Group in large and medium machine tools. The acquisition of the original European market resources of Heath Group also promoted Shenyang Machine Tool Group to have a huge overseas distribution channel. Therefore, this paper puts forward proposition .

Proposition 4: In the process of Chinese cross-border M&A enterprises receiving knowledge from subsidiaries, the parent company can improve the willingness of subsidiaries to participate in knowledge transfer and have a positive impact on the effect of knowledge transfer by adopting a socialized control mechanism such as jointly planning development goals with subsidiaries.

At the beginning, when Shenyang Machine Tool Group just acquired the advanced technology from Heath Group, many technicians in Shenyang Machine Tool Group were not very good at the manufacturing or research or develop medium and large machine tools because Shenyang Machine Tool Group started as an enterprise manufacturing small and medium-sized machine tools. Based on this status, The chairman of Shenyang machine tool group decided send the technology backbone go to German Heath group to study advanced technology, ultimately these technical backbone learned the knowledge related to large machine tool manufacturing and R&D in the field of top technology and able to skillfully use,allowed them returned to Shenyang machine tool group,and urge them applied advanced technology in the process of manufacture and R&D of Shenyang machine tool group, the technology backbone had learned the largest machine tool manufacturing and research and development technology from Heath group, Greatly improve the production efficiency and research and development efficiency of medium and large machine tools in Shenyang Machine Tool Group. Therefore, this paper puts forward proposition 5.

Proposition 5: In the process of the Chinese multinational M&A enterprise parent company receiving the knowledge of the subsidiary, the technical backbone of the parent company can

improve its ability to understand the knowledge of the subsidiary by sending them to study in the subsidiary of a developed country.

In the process of Shenyang machine tool group receiving Heath group knowledge, Shenyang machine tool group has strengthened the mutual visits between Shenyang machine tool group and Heath group. Shenyang machine tool group regularly assigned technical backbone visited German Heath group to carry out the management concept, but also invited engineers and management staff of German Heath group to Shenyang to communicate with the staff of Shenyang machine tool group. When Heath group staff came to Shenyang machine tool group, Shenyang machine tool group specially provides the German interpreter, English interpreter, accompanied him to visit headquarter company, and then visit the German employees, and at the banquet, provides German type Turing root sausage, Munich beer and other traditional German food and drink for Heath group staff, This move made the staff of Heath Group feel warm and promoted greatly the transfer of all the technical drawings, advanced management concepts and European market resources of Heath Group to Shenyang Machine Tool Group. Therefore, this paper puts forward proposition 6.

Proposition 6: In the process of Chinese cross-border M&A enterprises receiving knowledge from overseas subsidiaries, the parent company can win the trust of the subsidiaries by strengthening the contact between the employees of both sides, thus enhancing the willingness of the subsidiaries to participate in knowledge transfer and promoting the increase of the quantity and value of knowledge transfer.

The integration stage of cross-border merge and acquisition is the longest and most important stage in the whole process of cross-border merger and acquisition. The knowledge transfer process takes place in the integration stage of cross-border merger and acquisition. The management and control of knowledge transfer is the key task in the integration stage of cross-border merger and acquisition. Whether the integration and absorption of knowledge can be realized in the integration stage of cross-border mergers and acquisitions is the key to the success of cross-border mergers and acquisitions. Therefore, it is necessary to build a series of models on the process of knowledge integration and absorption in the integration stage of cross-border M&A, so as to build a universal theory and better discuss the control mechanism of knowledge transfer.

Therefore, based on the process of Shenyang Machine Tool Group's integration and absorption of German Heath Group's knowledge, this paper proposes a preliminary concept of knowledge integration Slow down model for Chinese multinational M&A enterprises in the

stage of cross-border M&A integration. In addition, use the Slow down model of knowledge integration proposed by this paper to promote the refinement of knowledge transfer control mechanism of Chinese multinational M&A enterprises, and also hope to use this model to promote Chinese multinational M&A enterprises to better obtain the knowledge of subsidiaries in developed countries. Table 1 shows the slow down model of knowledge integration of Chinese cross-border M&A enterprises in the stage of cross-border M&A integration based on the open coding method of grounded theory.

### 3.3 Coding based on grounded theory

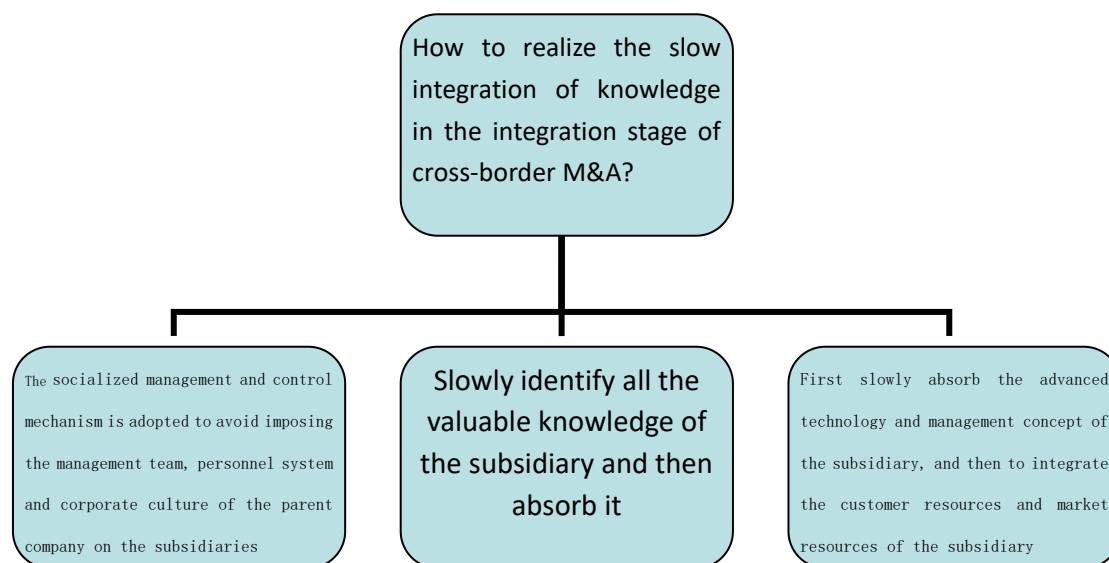
**Table 1 The open coding example of the case**

Stage	Source of case	Data	A label	conceptualization	Category
Merger and integration stage	Shenyang machine tool acquisition heath Group	Heath Industries employees don't think like us	There are differences in thinking	Ideas are hard to agree on	Lack of identity
Same as above	Same as above	Heath: medium and large machine tools, Shenyang machine tools: medium and small machine tools	Different ways to get started	Differences exist in manufacturing means and technology application methods	Inconsistent thinking about how products are made
Same as above	Same as above	Heath main market: Europe, Shenyang Machine Tool main market: China	Different target markets	Different customer groups	The integration of customers and market resources may be difficult after the merger
Same as above	Same as above	Shenyang machine tool and subsidiary Heath Group exist knowledge distance	Understanding the acquires knowledge is not easy	Because the existence of knowledge distance affects knowledge transfer	Because of the knowledge distance between the company and the subsidiary, it is necessary to absorb the knowledge of the subsidiary slowly
Same as above	Same as above	The knowledge base of Heath Group is large,	Subsidiaries may have more knowledge than	It takes time to absorb more knowledge from	Slowly identify useful knowledge

		while that of Shenyang machine tool is small	the parent company	subsidiaries	and then absorb it
--	--	---	-----------------------	--------------	--------------------

### 3.4 Constructed model

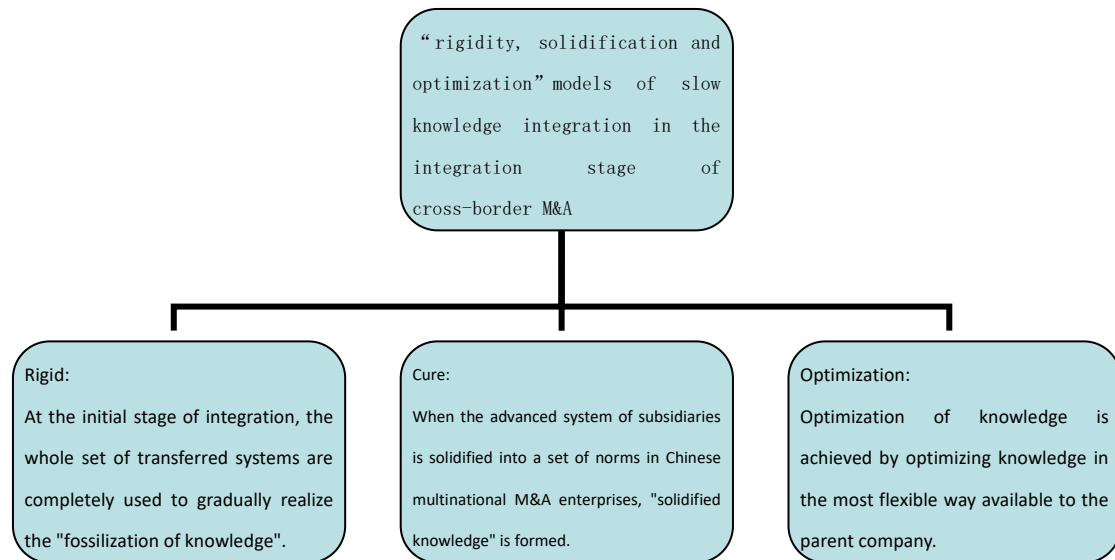
Based on the open coding based on the grounded theory mentioned above, this paper proposes a Slow down model of knowledge integration in the integration stage of cross-border M&A, as shown in Figure 1.



**FIG. 1 Slow integration model of knowledge in the integration stage of cross-border M&A**

In consolidation stage, cross-border M&A enterprises should implement the strategy of slow integration means: Firstly, on the control mechanism level, we should adopt social control mechanism, which means do not let the parent company's management team, management concept, company strategy, personnel system, salary welfare system, enterprise culture both imposed on subsidiaries. Secondly, in the initial stage of knowledge transfer, the absorption of knowledge from subsidiaries should be slowed down at first, and all valuable knowledge of subsidiaries should be identified in the process of slow observation and slow selection knowledge from subsidiaries. Thirdly, in the process of absorption knowledge, we should obey the rule of "easy before difficult". First absorb easily absorbed knowledge, such as the advanced technology and management concept of the subsidiary, and then integrate and absorb more difficult knowledge, such as the customer resources and market resources of the subsidiary.

Chinese cross-border M&A enterprises are good at absorb foreign technology and patent, but not good at improvement and optimization, but the improvement and optimization does not necessarily bring the benefits to the transnational merger and acquisition enterprise knowledge transfer process. In the technology and labor-intensive industries, the western developed countries is depends on the advanced management methods and advanced R&D system to create the world famous brand, Once the brand has formed a "global brand effect" at global scale, it will have an absolute competitive advantage in this industry. Many Chinese companies are too quick to adjust the transferred advanced technologies to the Chinese context. In this way, the essence and core of technology of enterprises in western countries will be lost inadvertently. However, Shenyang Machine Tool Group advocates the strategy of "rigidity, solidification and optimization", and this strategic concept is applied in practice: completely used the transferred knowledge in the early years at first, the integration of the developed countries, a subsidiary of the whole system, even if there are some things in the system can not well adapt to China's national conditions, but in order to prevent loss of advanced western countries enterprise knowledge, we should completely use it , at first, we should seriously study and understand the whole system of subsidiary , and after a long time, to realize the rigidity of the "knowledge". Secondly, on the basis of "rigidity", the advanced system of subsidiary companies in developed countries will gradually be fixed inside Chinese cross-border M&A enterprises and gradually form a set of norms. At this time, "solidification of knowledge" will be formed. Thirdly, after the realization of "fixed-line knowledge", the advantages of flexibility and reasonable improvement of Chinese people can be used to select and optimize knowledge, so that the knowledge that has been selected and optimized and useful to the parent company can be easily used by the parent company, which realizes "optimization of knowledge". At this point, the effect of "slow integration" proposed in this paper has been achieved. Based on the above analysis, this paper puts forward the "rigidity, solidification and optimization models" of slow knowledge integration of Chinese multinational M&A enterprises in the stage of cross-border M&A integration. See Figure 2 for details.



**FIG. 2 “Rigidity, solidification and optimization models” of slow knowledge integration in the integration stage of cross-border M&A**

## 4. Discuss

### 4.1 Discussion on the effect of implementing two control mechanisms on knowledge absorption of parent company

Li Zijie et al believe that the key factors affecting knowledge transfer are the small advantage of Chinese enterprises in absorptive capacity compared with western enterprises and the great cultural difference between Chinese and Western enterprises(Lizijie,2014). Absorptive capacity is the ability to recognize the value of new information acquired through prior knowledge and apply it to business purposes. According to numerous practical cases of Chinese enterprises absorbing overseas subsidiaries, it can be seen that most Chinese enterprises cannot easily acquire the quintessence knowledge of western enterprises, so it is not a good choice for the parent companies of Chinese multinational M&A enterprises to adopt formal control mechanism for overseas subsidiaries. Since this study is to explore the situation of transferring advanced knowledge from overseas subsidiaries of developed countries to Chinese parent companies, in this case, adopting formal control mechanism for overseas subsidiaries will cause strong resistance of the subsidiaries, and the parent company cannot obtain the essence knowledge of overseas subsidiaries. So proposition1 is true.

From the practical experience of most Chinese enterprises in the stage of cross-border merger and integration, it is not easy for them to learn advanced technologies and management concepts from the newly acquired enterprises in developed countries due to the insufficient

absorption capacity of Chinese enterprises. The key factors influencing knowledge transfer are the large difference of corporate culture and organizational culture between the parent company and its overseas subsidiaries and the large difference of national culture between the parent company and the subsidiary country. Cultural differences will directly lead to difficulties in smooth communication between parent and subsidiary companies in the process of knowledge transfer, and thus reduce the efficiency of knowledge transfer. However, the socialized control mechanism can improve the cooperation willingness of the employees of the subsidiary, thus prompting the subsidiary to transfer more knowledge to the parent company, which is likely to absorb more knowledge. Once the parent company absorbs more knowledge, the parent company will have more experience in absorbing knowledge. So proposition2 is true.

According to the existing literature, the parent company's knowledge absorption experience can promote the parent company to improve its knowledge absorption capacity, so as to promote the effective transfer of advanced knowledge of overseas subsidiaries to the Chinese parent company after cross-border M&A. Social control mechanism at the same time can temporarily reduce the high frequency communication in the phase of the early period, easing the common cross-cultural communication obstacles in cross-border M&A, so as to eliminate the cultural conflict between developed countries subsidiary and parent company in the process of transferring knowledge. After the completion of the cross-border merger and acquisition of German Heath Group, Shenyang Machine Tool Group put forward the strategy of promoting the enterprise to develop better in Germany, that is, relying on the original management staff of Heath Group to promote the enterprise to develop better in Germany. In addition, Shenyang Machine Tool Group does not impose its corporate development strategy on the process of manage their German subsidiary, but urges the employees of German Heath Group to highly identify with the corporate culture of shenyang Machine Tool Group through target-identification oriented psychological culture training. Shenyang Machine tool and Heath Group jointly formulate the future development plan and future development direction of Heath Group, so as to improve the willingness to cooperate between subsidiaries and parent company. At the same time, shenyang machine tool group regularly sent technical backbone, R&D staff to German Heath group to learning, communication. After R&D staff and technical backbone back to shenyang after they learned advanced research and development technology in Germany , they use advanced manufacturing technology and successfully research and development concept to produce more high quality large machine tools. Thus, shenyang

Machine Tool Group has successfully achieved a large profit on the basis of perfectly absorbing the advanced knowledge of Heath Group, and also greatly improved its knowledge absorption capacity. According to the annual report on the development of Chinese multinational enterprises released in recent years, shenyang Machine Tool Group's knowledge absorption capacity has been ranked as the "leader" of similar enterprises in China for several years. It follows that propositions 3, 4, 5 and 6 are true. Therefore, the following two conclusions can be drawn:

Firstly, the socialization control mechanism implemented by the parent company to its overseas subsidiaries has a positive effect on the process of absorbing knowledge from overseas subsidiaries and can improve the knowledge absorption capacity of the parent company.

Secondly, the implementation of formal control mechanism by the parent company to its overseas subsidiaries has no positive effect on the process of absorbing knowledge from overseas subsidiaries, nor can it improve the knowledge absorption capacity of the parent company.

#### **4.2A comparison of the quantity and value of knowledge transfer after the implementation of the two control mechanisms**

##### **4.2.1The quantity and value of knowledge transfer after the implementation of formal control mechanism**

In case of Shenyang machine tool group acquisition of German Heath group,we can found that: when Shenyang machine tool group implementation the formal control mechanisms to their subsidiary Heath group , knowledge transferred from the subsidiary Heath group is much less than expected, the number of the value of knowledge is transferred from the unit actual is lower than expected.

##### **4.2.2 Quantity and value of knowledge transfer after the implementation of socialized control mechanism**

From the case of Shenyang machine tool group acquisition German heath group, one obvious phenomenon can be found: when the parent company-Shenyang machine tool group through the strategic adjustment, implementation the social control mechanism to their subsidiaries-heath group , the number of knowledge transferred from the subsidiary heath group more than expected, the value of knowledge is transferred from the unit actual is higher than expected.(we regard the patent number as the number of knowledge,we regard the



invention patent number as the value of knowledge)

#### **4.2.3 Comparison of the quantity and value of knowledge transfer after the implementation of the two control mechanisms**

Through reviewing the whole process of the case of Shenyang Machine Tool's acquisition of German Heath Group, it can be obviously found that: For Shenyang Machine Tool Group, which implemented the formal control mechanism in the early stage and the socialized control mechanism in the later stage, the amount of knowledge actually transferred from the subsidiaries after the implementation of the socialized control mechanism is more than that after the implementation of the formal control mechanism. The value of knowledge actually transferred from subsidiaries is higher than that after the implementation of formal control mechanism.

#### **4.3 How to match the role of overseas subsidiaries with the control mechanism of the parent company**

The influence of the role played by the acquired overseas subsidiaries on the type of control mechanism implemented by the Chinese parent company is also the subject worth in-depth analysis in this paper.

Through the existing literature and field surveys, if overseas subsidiaries are located in the developed countries , with advanced technology, management concept and high-quality marketing resources worldwide, and these knowledge are Chinese transnational merger and acquisition enterprises urgently needed, and these advanced knowledge can solve China's parent company existing problems, at this time, no matter whether China is close or far away from the target country, the Chinese parent company should adopt socialized control mechanism for its subsidiaries so as to better absorb the knowledge of its subsidiaries.

Since the overseas subsidiaries discussed in this paper are all subsidiaries located in developed economies, the impact of the role of the overseas subsidiaries located in emerging or developing economies on the type of control mechanisms employed by the Chinese parent company is not the subject of this paper .

It is necessary to study the matching degree or matching relationship between the role of overseas subsidiaries and the control mechanism implemented by the parent company to discuss the influence of the role of overseas subsidiaries on the type of control mechanism implemented by the Parent company.

When discussing the matching relationship between the roles played by overseas subsidiaries and the types of knowledge transfer control mechanisms implemented by Chinese parent companies, this study divides the roles played by overseas subsidiaries into the dominant role played by subsidiaries and the cooperative role played by subsidiaries. This is also the innovation and uniqueness of this study.

#### **4.3.1 Matching relationship between overseas subsidiaries playing a leading role and the parent company's control mechanism**

Birkinshaw and Delany believed that the subsidiary's dominance and the role level played by the subsidiary changed in the same direction, and an absolute relationship was established between the role level and behavioral results (Birkinshaw, 1998 & Delany, 2000). This absolute relationship is the key to study the matching relationship between the role of overseas subsidiaries and the control mechanism implemented by the parent company. However, domestic scholars hold a different view. Chinese scholars Hao Jin and Wang Fengbin believed that even for the same company, the parent company adopts different control mechanisms for it, which will lead to differences in dominance (Hao Jin & Wang Fengbin, 2017). Based on the theme of this paper, it can be learned that: Even for the same subsidiary plays a leading role, if parent company implement different control mechanisms, such as implement formal control mechanisms for a leading role subsidiary, and implementation of social control mechanism for another leading role subsidiary, it also can lead to the two subsidiaries change their dominance. Chinese scholars Hao Jin and Wang Fengbin believed that for the roles of subsidiaries at different levels, if a management mechanism with appropriate decentralization degree is matched, the same high dominance will be generated (Hao Jin & Wang Fengbin, 2017). For example, the implementation of socialized control mechanism for a subsidiaries play a role of low dominance that are restructured after bankruptcy, it also can bring high dominance behaviors. According to relevant frontier literature, once a subsidiary has high dominance, it will have a strong willingness to transfer knowledge and a strong "win-win consciousness" of knowledge transfer. The subsidiary will realize that transferring knowledge to the parent company is a "win-win process". If matching the formal control mechanisms to subsidiary, even if the subsidiary play a dominant role, because of the formal control mechanisms lead to the result of the subsidiary to produce low dominant, causing the subsidiary cannot realize win-win effect caused can bring through the process of knowledge transfer, therefore subsidiary have very low knowledge transfer willingness. Although the role

of the subsidiary reorganized after bankruptcy belongs to the "lower level subsidiary", which are recognized by the academic circle, under the guidance of the socialized control mechanism of the parent company, it can also produce high dominant results similar to the role of the "higher level" leader. Therefore, this paper concludes proposition 7.

Proposition 7: For overseas subsidiaries with specific roles (playing dominant roles) and higher knowledge level than the parent company, the socialization control mechanism adopted by the parent company will make the overseas subsidiaries more dominant, thus making the knowledge transfer willingness and "win-win consciousness" of the subsidiary become stronger.

#### **4.3.2 The matching relationship between overseas subsidiaries playing cooperative roles and the parent company's control mechanism**

Began in 2020, Chinese and foreign scholars began to attention to overseas subsidiaries under the cooperative role (cooperative role of overseas subsidiaries) and adopted by the parent company controls the matching relationship .Tsai and Luo believe that: Research on parent-subsidiary cooperation behavior of multinational M&A enterprises mainly focuses on strategic interdependence, technological correlation and knowledge sharing(Tsai(2002)& Luo (2005)). However, it is rare to find literature that produces cooperative effect by studying the matching degree between the role of the subsidiary and the knowledge transfer control mechanism implemented by the parent company. Through reading relevant literature, it can be found that the differences between the roles of overseas subsidiaries and the knowledge transfer control mechanisms implemented by the parent company will lead to different cooperative results between the parent company and subsidiaries. For cross-border M&A companies ,in terms of the specific role in the global strategy of subsidiary, especially for the cooperative role of subsidiary, the parent company of its social control mechanism will be conducive to stimulate it more actively cooperate with the parent company, the formal control mechanisms will promote active cooperation between parent company and subsidiaries. Therefore, this paper puts forward proposition 8.

Proposition 8: For overseas subsidiaries with specific roles (playing cooperative roles), the socialization control mechanism implemented by the parent company will further strengthen the close cooperation between the parent company and the subsidiaries .

#### **4.4 Analysis of the relationship between absorptive capacity and control mechanism, knowledge quantity and knowledge value**

Based on the case of Shenyang Machine Tool Group's acquisition of German Heath Group, we can find that the relationship between absorptive capacity and control mechanism, knowledge quantity and knowledge value is reflected as follows:

Firstly, If the absorption capacity of the parent company is stronger, the amount and value of knowledge transferred from the overseas subsidiary to the parent company are higher than expected after the socialization control mechanism implemented.

Secondly, If the absorption capacity of the parent company is stronger, the amount and the value of knowledge transferred from the overseas subsidiary to the parent company are lower than expected after the parent company implements the formal control mechanism over its overseas subsidiary .

Thirdly, If the absorption capacity of the parent company are weakness, the amount and the value of knowledge transferred from the overseas subsidiary to the parent company are higher than expected after the socialization control mechanism had been implemented.

Fourthly, If the absorption capacity of the parent company are weakness, the amount and the value of knowledge transferred from the overseas subsidiary to the parent company are lower than expected after the parent company implements the formal control mechanism over its overseas subsidiary.

#### **4.5 The strategic intention of parent company's knowledge seeking and the design of parent company's control mechanism**

Based on the case of Shenyang Machine Tool Group's acquisition of German Heath Group, we can find that:

Firstly, If the parent company's strategic intention of knowledge seeking are stronger, the more suitable for the parent company to adopt socialized control mechanism for its overseas subsidiaries.

Secondly, If the parent company's strategic intention of knowledge seeking are stronger, the less suitable it is for the parent company to adopt formal control mechanisms over its overseas subsidiaries.

Since this paper studies the situation in which Chinese enterprises transfer advanced knowledge from overseas subsidiaries of developed countries, and the strategic intention of knowledge seeking in this situation both are stronger, so this paper does not discuss the situation in which the strategic intention of knowledge seeking of the parent company is weaker for the time being.

## **5. Conclusion, research limitations and future research prospects**

### **5.1 Conclusion**

Through the above study found that when the parent company implementation formal control mechanisms for their subsidiaries, the number of knowledge transferred from the unit is less than expected, the value of knowledge transferred from the subsidiary is lower than expected, as a result, we draw the following judgment: as for formal control mechanisms, the protection ability for the quantity and the value of the advanced knowledge from the overseas subsidiaries is not high.

When the parent company implementation of social control mechanism for their overseas subsidiaries, the number of knowledge transferred from the unit is larger than expected, the value of knowledge transferred from the unit is higher than expected, as a result, we draw the following judgment: social control mechanism is more suitable for protect the amount and value of advanced knowledge from overseas developed countries subsidiaries compared with formal control mechanism.

According to the above research, it is found that after Chinese multinational M&A enterprises implement formal control mechanism on overseas subsidiaries, the efficiency and effect of Chinese multinational M&A enterprises integrating new knowledge of overseas subsidiaries and applying new knowledge of subsidiaries are low. However, when Chinese multinational M&A enterprises implement socialized control mechanism to their subsidiaries, the efficiency and effect of Chinese multinational M&A enterprises integrate the new knowledge of subsidiaries and apply the new knowledge of subsidiaries is better. Therefore, based on the previous research and judgment, the following conclusions are drawn in this paper:

Conclusion 1: In the process of knowledge transfer of Chinese cross-border M&A enterprises, the influence of formal control mechanism and socialized control mechanism on the quantity and value of knowledge transfer is different. At the same time, when the parent company has

different degrees of absorption capacity, the influence of formal control mechanism and socialized control mechanism on knowledge transfer will change.

Conclusion 2: The design of control mechanism of Chinese cross-border M&A enterprises needs to match the knowledge reserve value of overseas subsidiaries and the knowledge seeking intention of parent companies.

Conclusion 3: The influence on the value of knowledge transfer from overseas subsidiaries to Chinese cross-border M&A firms depend on the type of control mechanism implemented by Chinese cross-border M&A firms ,and it also depend on the role of subsidiaries. The influence on the value of knowledge transfer realized by the quantity of knowledge transfer.

## **5.2 Research limitations and future research prospects**

Firstly, there is no further subdivision of the types of control mechanisms. This study divides the control mechanism into formal control mechanism and socialized control mechanism. However, in reality, formal control mechanism and socialized control mechanism can be further subdivided into hierarchical order mechanism, decision-making power delegation mechanism, communication and coordination mechanism, salary mechanism and so on. Due to space limitation, this study does not completely cover the above subdivided control mechanism commonly used by multinational enterprises. In the future research work, the role of these subdivided control mechanisms in cross-border M&A enterprises will be deeply explored.

Secondly, there is no research on the influence boundary of control mechanism. The influence boundary of control mechanism will have an impact on the process of knowledge transfer, so the future research work needs to carry out in-depth discussion and analysis on the influence boundary of control mechanism.

Thirdly, there is no distinction between explicit and implicit control mechanism and explicit and implicit knowledge. Due to the limitation of length, this study did not distinguish between explicit and implicit control mechanisms and explicit and implicit knowledge. In fact, explicit knowledge transfer control mechanism and tacit knowledge transfer control mechanism have a huge difference in the influence of knowledge transfer process. In the future, we will also explore in depth what aspects are embodied in the huge difference between explicit control mechanism and implicit control mechanism in the process of influence knowledge transfer, and the reasons behind the difference. Similarly, the influence of explicit knowledge and tacit knowledge on the process of knowledge transfer is also greatly different. In the future, we will

also explore in depth what aspects are embodied in the huge difference between explicit knowledge and tacit knowledge in the process of influence knowledge transfer, and the reasons behind this difference.

### **Acknowledgments:**

The authors acknowledge financial support from the Ministry of Education China, Humanities and social sciences research fund, Grant/Award Number: 17YJA630072 ; National Natural Science Foundation of China, Grant/Award Number: 71972013;

### **References**

- [1] Åberg C, Torchia M (2020) Do boards of directors foster strategic change? A dynamic managerial capabilities perspective. *J Manag Gov* 24:655–684. <https://doi.org/10.1007/s10997-019-09462-4>
- [2] Acciarini C, Brunetta F, Boccardelli P (2020) Cognitive biases and decision-making strategies in times of change: a systematic literature review. *Manag Decis Ahead-of-Print*. <https://doi.org/10.1108/MD-07-2019-1006>
- [3] Adler PS (2001) Market, hierarchy, and trust: the knowledge economy and the future of capitalism. *Organ Sci* 12:215–234. <https://doi.org/10.1287/orsc.12.2.215.10117>
- [4] Adler PS, Kwon S-W (2002) Social capital: prospects for a new concept. *Acad Manag Rev* 27:17–40. <https://doi.org/10.2307/4134367>
- [5] Adner R, Helfat CE (2003) Corporate effects and dynamic managerial capabilities. *Strateg Manag J* 24:1011–1025. <https://doi.org/10.1002/smj.331>
- [6] Al-Debei MM, El-Haddadeh R, Avison D (2008) Defining the business model in the new world of digital business. In: *Proceedings of the 14th Americas conference on information systems AMCIS'08*. Toronto, Canada, pp 1–11. <https://www.semanticscholar.org/paper/Defning-the-Business-Model-in-the-New-World-of-Al-Debei-El-Haddadeh/ec87172d69171cb545155ba13c3256776bca03d6>
- [7] Alguezaui S, Filieri R (2010) Investigating the role of social capital in innovation: sparse versus dense network. *J Knowl Manag* 14:891–909.

<https://doi.org/10.1108/13673271011084925>

- [8] Ali-Hassan H, Nevo D, Wade M (2015) Linking dimensions of social media use to job performance: the role of social capital. *J Strateg Inf Syst* 24:65–89. <https://doi.org/10.1016/j.jsis.2015.03.001>
- [9] Andrews R (2010) Organizational social capital, structure and performance. *Hum Relat* 63:583–608. <https://doi.org/10.1177/0018726709342931>
- [10] Aspara J, Lamberg J-A, Laukia A, Tikkanen H (2013) Corporate business model transformation and inter-organizational cognition: the case of Nokia. *Long Range Plan* 46:459–474. <https://doi.org/10.1016/j.lrp.2011.06.001>
- [11] Baden-Fuller C, Haefiger S (2013) Business models and technological innovation. *Long Range Plan* 46:419–426. <https://doi.org/10.1016/j.lrp.2013.08.023>
- [12] Beck JB, Wiersema MF (2013) Executive decision making: linking dynamic managerial capabilities to the resource portfolio and strategic outcomes. *J Leadersh Organ Stud* 20:408–419. <https://doi.org/10.1177/1548051812471722>