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RESEARCH ON REPATRIATES' INCENTIVE MECHANISM: BASED ON KNOWLEDGE TRANSFER PERSPECTIVE

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Abstract

Repatriates' experience and knowledge is important competition advantage for the parent company in international business. This paper discussed repatriates' incentive mechanism based on the perspective of knowledge transfer, established theoretic model of repatriates' knowledge transfer incentive mechanism, and pointed out that knowledge transfer was a process of repeated game between the parent company and the repatriates, the establishing of knowledge transfer incentive mechanism was trying to reach the equilibrium of the game, it provided theoretic basis for promoting repatriates' knowledge transfer effectively.

Keywords: Repatriates, Incentive, Game, Knowledge Transfer

Introduction

Given the globalization of economies, the number of the expatriates is on an upward trend, consequently, repatriates management has been paying more attention. For a long time, researches from home and abroad always put emphasis on repatriates' welfare and demand satisfaction from the perspective of cross-culture management. However, there is a neglected problem, what effect repatriates' uncoded knowledge and the implication of that knowledge will have on increasing the level of the knowledge and enhancing the development of company. In practice, the result is that the repatriates choose to leave the company for they can't bring their ability into play, accompanied with the companies' lose for the spillage of knowledge. This paper solved this problem discussed above, it explored the repatriates' incentive problem under knowledge transfer, in order to improve strategy consciousness for knowledge transfer, and provided theory evidence for establishing reasonable repatriates' incentive mechanism.

Repatriates: knowledge assets attribute

Repatriates is not only a key resource to the knowledge about the host country's market and economy, but also the important channel for transferring the knowledge across nations, they are the company's vital human capital. Usually,

repatriates will gain five kinds of knowledge during their overseas assignments: First, market related knowledge. Antal and Martin pointed out respectively that market related knowledge is a necessary condition for a company to operating successfully in a given market[1][2]. Under different circumstance, repatriates will learn to understand the new environment, they can gain the knowledge relate to the given market, such as local language, custom and business operating modes. Second, personal skills. These individual skills have a wide range, such as cross-culture, openness, confidence, flexibility and tolerance. Mayhofs and Adler indicated the improvement of repatriates' these kinds of skills[3][4]. Third, managerial skills related to job. For the different working environment, repatriates should improve their managerial skills. Downes and Thomas manifested that their communication skills, project management skills and problem-solving skills will all be improved[5]. Fourth, network knowledge. Adler and Martin showed that repatriates' social network will be established and extended. When they are doing business in the host county, they will interact with lots of local and foreign people, then their social network will be established, they can also extend their network in parent country. Fifth, general managerial knowledge. This kind of knowledge will help them become the candidates for senior management positions.

Concerning the five kinds of knowledge, comparatively speaking, some of them can be coded and transferred to company's employees easily, such as market related knowledge, they are called explicit knowledge. Some can be transferred partly, such as network knowledge, however, others can be transferred hardly or not, for instance, personal skills, job related managerial skills and so on, they are called tacit knowledge. In order to get benefits from the knowledge, the company should put emphasis on repatriates management and motivation, and promote their knowledge transfer to the company. The useful knowledge which was arising from and be transferred by the repatriates, can be seen as valuable asset which is hard to copy, company can preserve and develop this kind of asset, and transfer it into rare competitive advantages in competition between companies,

which is impossible to imitate. However, if the company can't be aware of the value of repatriates' knowledge, or apply the assets without appropriate human resource policies and practice, it will lead to knowledge spillage, then the under-valued asset will bring loss to the company in global competition. Therefore, the importance of the repatriates' asset attribute should be well appreciated.

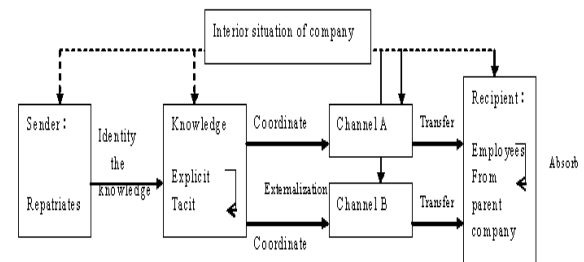
Characteristics, process and cost of repatriates' knowledge transfer

1.Characteristics of repatriates' knowledge transfer

In terms of the analysis about the repatriates' knowledge asset attribute above, we can indicate that knowledge transfer consists of explicit knowledge transfer and tacit knowledge transfer. Market related knowledge is explicit knowledge, it can be exchanged between individual employees easily, while something like personal skills, or job related managerial skills, which is hard to code, express or formulate, can not be transferred easily. Therefore, in order to enhance knowledge transfer effectively, we should focus on understanding the characteristics of tacit knowledge, these characteristics can be summarized as [6]: (1) Implicitness: Knowledge acquisition needs personal to experience, practice and understand. (2) Exclusivity: Individuals take the gained knowledge as a part of status and self-worth, so usually they do not want to share it with others free of charge. (3) Situation: Tacit knowledge is different when situation changes. (4) Accountability: Personal knowledge is directly related to personal performance in company, which determines the wealth and status individual will get. (5)Contribution: Personal knowledge forms organization's knowledge, which is the basis of company's sustainable competitive advantages, and will contribute to the competitiveness of the company.

2.Process of knowledge transfer

The process of repatriates transferring their knowledge to parent company's employees is the basis of company's knowledge transfer. Based on Szulanski about knowledge transfer process model and Alice Lam about knowledge transfer situation model[7][8], this study established repatriates' knowledge transfer process model as following (see graph 1)



Graph 1: Repatriates' knowledge transfer process model

3. Cost of knowledge transfer

Knowledge transfer is defined as the process that the sender transfers the knowledge to the recipient, and should make sure that the recipient understand and accept the knowledge. Knowledge transfer process involves factors as knowledge sender, content of the knowledge, knowledge transfer channel and knowledge recipient, all these factors will directly affect the transfer cost [9]. Costs of repatriates' knowledge transfer include:

(1) Cognitive cost. Cognitive cost is the result of the unsuccessful mutual understanding between sender and recipient, which will lead to loss of knowledge. The level of cognitive cost will be affected by the content of knowledge, knowledge transfer channel, organization characteristics of both sender and recipient, willing to transfer and experience of knowledge transfer. When the degree of tacitness of the knowledge is high, or the transfer channel being used can't be understood easily, or knowledge characteristics has been changed by the characteristics of parent company or the mismatch of different company units, or when repatriates lack willing and experience to transfer, the cognitive cost will be increased.

(2) Opportunism cost. For repatriates, before knowledge transfer, potential knowledge recipient is unknown, so if the knowledge has been transferred successfully, the potential recipient don't have to pay for it, moreover, they can resell the knowledge with no marginal costs, if parent company don't have any scientific incentive or preserve mechanism, this kind of knowledge exchange will increase the cost of repatriates' knowledge transfer. In addition, repatriates will be glad to see the fact that parent company relies on their knowledge, it means they can gain more value, and enhance their position in company, therefore, this motive to accumulate knowledge personally will hamper the share of knowledge, finally increase the cost of knowledge transfer.

Design the repatriates' knowledge transfer incentive mechanism

1. Design principle

According to the above analysis about characteristics of repatriates' knowledge transfer, we can analyze the existence of cognitive cost and opportunism cost of knowledge transfer cause obstacles in knowledge transfer especially tacit knowledge transfer. In order to reduce these obstacles, the company must establish the incentive mechanism to promote the knowledge transfer. Based on incentive theories, incentive is divided into intrinsic incentive and extrinsic incentive. Intrinsic incentive is brought by the job itself including the sense of interesting, achievement, responsibility and so on, and it performs as self-realization. Extrinsic incentive is the rewards except job, including the increase in remuneration, the promotion, and the improvement of interpersonal relationship and so on. If the intrinsic incentive and extrinsic incentive are the mutual independence and the additive relationship, dividing the intrinsic incentive and extrinsic incentive, corresponding to the division of the labor psychology that shows the concerning for intrinsic incentive and economic psychology that shows the concerning for extrinsic incentive, the company can manage according to their relative strengths and weaknesses to improve the incentive effect, however, theoretical research result indicates that under the existence of intrinsic incentive, these two kinds of incentive can exchange, namely there will have the mutual crowding effect [10]. In accordance with the economic principle, the company pays remuneration based on the staff's marginal productivity, and the reliance on extrinsic incentive is more than on intrinsic incentive, the ideal extrinsic incentive system strictly obeyed the performance to pays remuneration, however, because of the existing of the incentive mutual crowding effect, all kinds of extrinsic incentive based on paying remuneration by performance strictly often has non-efficient behaviors in the circumstance of high intrinsic incentive, while intrinsic incentive has more advantage of overcoming the cognitive cost and opportunism cost in the process of improving tacit knowledge transfer. Therefore, incentive mechanism model in this paper is established in the theoretical analysis above.

2. Theory model of repatriates' knowledge transfer

The repatriates' knowledge transfer is the process of transfer their valuable knowledge from overseas to the parent company staff which involves two or more employees. Their knowledge transfer can affect the parent company staff's behaviors, and

can be restricted by parent company staff's behaviors simultaneously. Knowledge transfer is the dynamic game process between repatriates and the parent company staff, so the construction of knowledge transfer incentive mechanism is a balanced outcome of the two side game actions.

Assuming that both of repatriates and parent company staff are the rational decision-making subject, they pursue maximization of individual income and their strategies are knowledge transfer or not. The value of repatriate A and parent company employee B is W_{A1} and W_{B1} respectively, their knowledge absorptive capability coefficient is a_A ($0 < a_A \leq 1$) and a_B

($0 < a_B \leq 1$) separately. New value produced after the knowledge transfer is W_{A2} and W_{B2} , and the sender's negative effect brought by the knowledge transfer is W_{A3} and W_{B3} .

To simplify the question analysis, assuming that repatriates and parent company staff have the same value and absorptive capability, that means $W_{A1} = W_{B1} = W_1$, $a_A = a_B = a$, then the value produced after the knowledge transfer is the same as the sender's negative effect brought by the knowledge transfer, namely $W_{A2} = W_{B2} = W_2$ and $W_{A3} = W_{B3} = W_3$.

Because repatriates may have game with many different employees in parent company, this constitutes repeated game and its game payoff matrix is shown as following graph 2:

		Parent company employee B	
		Knowledge transfer	Knowledge non-transfer
Repatriates A	Knowledge transfer	$\langle (1+a)W_1 + W_2 - W_3, (W_1 - W_3, (1+a)W_1 + W_2) \rangle$	$\langle (1+a)W_1 + W_2 - W_3, (W_1 - W_3, (1+a)W_1 + W_2) \rangle$
	Knowledge non-transfer	$\langle (1+a)W_1 + W_2, W_1 - W_3 \rangle$	$\langle W_1, W_1 \rangle$

Graph 2: Payoff matrix of repeated game

As to the parent company which want to promote effective knowledge transfer, to establish a rational incentive mechanism means to make the repeated game above to sub-game perfect Nash equilibrium, at this time, repatriates A begins to choose knowledge transfer and continue to choose knowledge transfer, while once A doesn't choose knowledge transfer, he will choose non-transfer forever. Similarly, if repatriates A choose knowledge transfer, parent company employee B will also choose knowledge transfer. Otherwise, if repatriates A once chose non-transfer, parent company employee B will always choose

non-transfer. In this case, (transfer, transfer) is sub game perfect Nash equilibrium, and each employee obtains the income is $(1+a)W_1 + W_2 - W_3$.

Specifically, assumed the discount factor is δ , then we analyze repatriates A's selection strategy. If employee A chose non-transfer in a certain game stage, his income in this stage is $(1+a)W_1 + W_2$, but his behavior would trigger B's "never transfer" punishment, so A's income of every subsequent stage is W_1 . If A chose knowledge transfer, his income in this stage is $(1+a)W_1 + W_2 - W_3$, because the both sides have knowledge transfer, the income of follow-up knowledge transfer process is $(1+a)W_1 + W_2 - W_3$, and the more times of repeated game, the more income. If the repeated times are many enough to make total income meet the equation as follow:

$$(1+a)W_1 + W_2 + \delta W_1 + \delta^2 W_1 + \delta^3 W_1 + \dots = (1+a)W_1 + W_2 + \delta W_1 / (1-\delta)$$

Then knowledge transfer is A's optimal choice.

So, if meets the following conditions:

$$WA = (1+a)W_1 + W_2 + \delta W_1 / (1-\delta)$$

(1)

$$WB = (1+a)W_1 + W_2 - W_3 + \delta((1+a)W_1 + W_2 - W_3) + \delta^2((1+a)W_1 + W_2 - W_3) + \delta^3((1+a)W_1 + W_2 - W_3) + \dots$$

(2)

$$WA \leq WB$$

(3)

There is

$$\delta \geq W_3 / (aW_1 + W_2) \quad (4)$$

That is, when the discount factor is big enough and bigger than, A will choose knowledge transfer.

As to B, assumed $\delta \geq W_3 / (aW_1 + W_2)$, because B concerned the income of a certain stage, and when only he expected that A would continue to choose the knowledge transfer, B would choose the knowledge transfer. Because B expected A once chose transfer and continues to choose the knowledge transfer, the knowledge transfer is the optimal choice of B, otherwise, if A once chose non-transfer, B would never have knowledge transfer with A.

From the above analysis, it shows that, if $\delta \geq W_3 / (aW_1 + W_2)$, (transfer, transfer) is a sub game perfect Nash equilibrium in the repeated game between repatriates and parent company staff, and Pareto optimality (transfer, transfer) is every stage's equilibrium result, namely, they must give up the short-term income to obtain long-term income, so the staff choose the knowledge transfer

and realize a win-win situation.

3. Discussion on theoretical model's application

The principle of the construction of above incentive mechanism model lied in after introducing the repeated game, the staff within organization considers about the discount factor of the total income rather than once income. As long as the discount factor of future income is big enough, the effective knowledge transfer can be achieved and maintained by the repeated game. This means the bigger long-term income of staff within organization, the more choice of knowledge transfer between employees. However, in reality, the company may face a lot of complex situations in promoting the effective repatriates' knowledge transfer which can affect the realization to the ideal equilibrium state. Analysis as follows:

(1) The internal situation of parent company, the characteristics of both sides in knowledge transfer and the different transfer channels required by the explicit and tacit knowledge can format the obstacles in the proceed of knowledge transfer and increase the cognitive cost of knowledge transfer which may cause repatriates and parent company staff to choose "knowledge non-transfer behaviors".

(2) The most difficulties in repatriates' knowledge transfer are obstacles of tacit knowledge transfer, which bring about the characteristics of tacit knowledge including exclusivity, accountability and contribution which can increase the opportunism cost of knowledge transfer and cause repatriates and parent company staff to choose "knowledge non-transfer behaviors".

(3) The repeated game model cannot realize sometimes in the real word for situational factors, if the company pays less attention on the intrinsic incentive and doesn't build the awareness of long-term incentive mechanism of knowledge transfer, it also can lead to both of repatriates and parent company staff choose "knowledge non-transfer behaviors".

Conclusions

Repatriates are very valuable knowledge assets to parent company, however, only when their knowledge can be transferred, these assets can play their roles. Based on the above, the parent company must establish the effective repeated game mechanism. And this mechanism can have impact of the staff's choice and produce the optimal solution, namely, achieving the sharing purposes in the knowledge transfer. Therefore, the following measures must be taken:

(1) Making the repatriates' career planning. The parent company should have a complete career planning about repatriates,

including: the expatriate assignments' nature, characteristics, time-span; the selection and training of expatriates; all kinds of problems may faced during the expatriate work period; the commutation with parent company; the arrangements after they returning and so on, especially the strengthen for the repatriates' planning and management, so that when they return after finishing the assignments, they can adapt the work in parent company more quickly, have a good expectation to using their knowledge and experience, and be willing to carry on knowledge transfer to parent company.

(2) Establishing the knowledge transfer and sharing environment. The parent company must establish the knowledge environment which all of employees are willing to transfer and share knowledge to increase the discount factor of repeated game. Specifically, that is to strengthen the mutual communication among the staff so that the staff can fully realize the importance of knowledge transfer. The company must pay attention on the incentive of staff's knowledge transfer and sharing behaviors, such as establishing the incentive systems including the knowledge salary payment system, knowledge promotion system and knowledge training system.

(3) Strengthening the effect on tacit knowledge transfer by the intrinsic incentive. On the one hand, the tacit knowledge is often accompanied by the team's creative work and its complexity and difficulty makes the participants believe completion of the task itself is a kind of incentive and challenge. At this time, the parent company can increase the intrinsic incentive to enhance the participants' learning and communication capacity and to promote the sharing knowledge in the team. On the other hand, because the tacit knowledge is difficult to be monitored and to be evaluated which make the extrinsic incentive often be ineffective. So parent company should rely on the intrinsic incentive to form the staff's self-restricting mechanism which can promote the tacit knowledge separated from the supervisor and carried on transfer spontaneously, thus it will enhance the validity of knowledge transfer.

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