

Interaction between explicit contracts and implicit contracts in RJVs

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Abstract

With the rapid development of economic globalization and science and technology, multinational companies have become less and less advantage to develop R & D activities separately, with the necessary knowledge and skills in various fields increasing in difficulty and depth for a single company. At the same time, entrepreneurs have realised that it can improve the adverse situation effectively to organize a new organizational model in the cross-sectoral, cross-industry. Research Joint Ventures achieve this desire for the Organizations with the risk-sharing and economies of scale and scope, the cost of inputs-sharing and avoiding unnecessary duplication of R & D .

Due to the different areas, traditional practices, corporate culture and beliefs of the members of the RJVs, the function of explicit contract within the RJVs members seems not very obvious. However, implicit contract, which includes trust, reputation, expected value of cooperation and culture , can make up for the lack of explicit contracts.

Then analyses the coodination machanism of explicit contract and implicit contract in the RJVs in order to achieve high effectiveness and efficiency of the contract. The conclusion is that contracting cost affects contract choice and the interaction between explicit contract and implicit contract .When contracting cost is low, interaction between explicit contracts and implicit contracts is substitute ,when contracting cost is medium, explicit contract complements implicit contract .when contract cost is high , explicit contract does not work.

Last, According to the above theory, gives the relevant policy recommendations.

Key words: *explicit contract, implicit contract, repeated game, contracting cost*

1. INTRODUCTION

Since the start of the 20th century, the world has been powered by two engines — economic globalization and technological progress. Cross-national companies, to reap more profits with the minimum cost, are exploring new organizational modes and development mechanism in the megatrend of globalization. Amid the fierce competition of market economy, research and development in different fields sets higher standards for knowledge and skills. As a result, companies find it hard to make innovations based on their own capital, employees and equipment.

2. Cross-National Companies and Implicit Contracts

Foreign researchers consider that cross-national companies are entities consisting of two or more sub-companies, jointly controlled by members that make their own profits with a shared goal of research and development. In this paper, we define cross-national companies as joint ventures

consisting of two or more entity organizations (companies, research institutes, schools and governmental research departments) that realize the goal of research and development through joint control [1].

Implicit contract was first proposed by the jurist McNeil based on critical classical law [2]. It is termed self-fulfilling contract or informal contract in economics, and McNeil called it relational contract in his studies.

In economics, implicit contracts refer to informal contracts made based on future relation values, self-enforcement is a major feature of implicit contracts. All parties involved in the contract coordinate to fulfill the contract and each party assumes their own rights and duties without arbitration of formal organizations or a third party. Implicit contracts exist in different economic activities [4]. When organizations cooperate in research and development, they will maximize their profit by both explicit and implicit contracts. However, the alternative or complementary relationship between explicit and implicit contracts have direct impact on the performance of cross-national companies. There is no consensus in the academia about the relations between explicit and implicit contracts.

3. Functional Relationship between Explicit and Implicit Contracts

3.1. Alternative Relationship between Explicit and Implicit Contracts

In theoretical studies, some scholars (Gulati, 1995; Dyer and Singh, 1998) suggest that formal contracts and relational contracts are alternative. Gulati proposed that the trust of implicit contracts can reduce the transaction cost, and the enhanced trust can eliminate the risk of opportunism, thereby cutting the trading and supervising costs related to transactions. Therefore, implicit contracts can replace explicit contracts.

3.2. Complementary Relationship between Explicit and Implicit Contracts

Theoretical and empirical studies showed that implicit and explicit contracts are complementary. The delicate design of formal contracts leads to creation of implicit contracts, and the latter rely on long-term cooperation with the former to play a role. Telser (1980) pointed out that if there are many uncertainties in a transaction, relying merely on the implicit contracts will not fulfill the transaction. Uncertainties may rise because the members cannot predict the expected value or think the expected value is small in the future, making implicit contracts invalid. If explicit contracts that are more elaborate are designed, the uncertainties will be reduced, and the expected value and trust of both parties will be increased, triggering the implicit contracts [4].

3.2.1. Modeling of Explicit Contracts and Implicit Contracts in Management of Cross-national Companies

Based on the models of Schmidt, Lazzarini, and Wu Desheng, this paper constructed a cross-national company management model [5]. Cross-national companies improve their R&D capacity abroad with the human and technical resources of local companies, while local companies improve the competitiveness of their products with the capital of cross-national companies. This paper analyzes the role of explicit and implicit contracts in cross-national companies from the perspective of cross-national companies [6].

It is assumed that:

1) Local companies provide technical devices and human resources for cross-national companies, and these two resources are independent. When the local companies provide these two resources (a^1 and a^2), there are two quality levels, i.e. high (H) and low (L), forming four combinations (H, H), (H, L), (L, H), (L, L).

2) The R&D costs local companies are C_{HH} , C_{HL} , C_{LH} , and C_{LL} , and their relations are $C_{HH} > C_{HL} > C_{LL}$, $C_{HH} > C_{LH} > C_{LL}$, $C_{LL} = 0$. The companies maximize the

profit by providing corresponding qualities based on the explicit and implicit contracts;

3) The four investment returns of trans-national companies are U_{HH} , U_{HL} , U_{LH} , and U_{LL} ; likewise, the order of size is $U_{HH} > U_{HL} > U_{LH}$, $U_{HH} > U_{LH} > U_{LL}$. The higher the quality of the resources provided by local companies, the higher the returns of R&D cooperation organizations, i.e., $U_{HH} - C_{HH} > U_{HL} - C_{HL} > U_{LL} - C_{LL}$, $U_{HH} - C_{HH} > U_{LH} - C_{LH} > U_{LL} - C_{LL}$.

4) A cross-national company (A) provides capital $P > C_{HH}$ to require a local company to provide resources (H, H). The discount factor of long-term transaction of both parties is δ . The higher is δ , the higher the mutual trust of these two parties is. If both parties end the transaction, then the profit of both parties is 0.

This paper analyzes the relations between explicit and implicit contracts under the zero-tolerance strategy and repeated game when the cost is small.

When the cost of the contract is low, the cross-national have two options: first, zero-tolerance will be given to the local company for their violation in resource investment. Once the local company violates the contract, the cross-national company will not select it as a partner. Second, because the cost of the contract is low ($y \leq U_{HL} - C_{HL}$), when the cross-national company finds the local company violating the contract, it will not terminate the contract, but sign a contract that will bring secondary profits to continue the cooperation, i.e., to continue cooperation through repeated game.

3.2.2. The role of explicit and implicit contracts when the zero-tolerance strategy is adopted

1) Only providing the implicit contract

When the local company violates the contract, the cross-national company will terminate the cooperation.

$$\frac{P - C_{HH}}{1 - \delta} \geq P - C_{LL}$$

That is, when $\frac{P - C_{HH}}{1 - \delta} \geq P - C_{LL}$ holds, the implicit contract can allow the research cooperation organization achieve the optimal investment. Therefore, we

$$\geq \frac{C_{HH}}{C_{HH} + \alpha(U_{HH} - C_{HH})}, \text{ and } \delta_L^{NC} = \delta_{H^{NC}}$$

2) Providing both explicit and implicit contracts

As the cross-national companies adopt the zero-tolerance strategy, local companies face the same options as they face when the cost is high, i.e.,

$$P^L = C_{HH} + \delta(U_{HH} - C_{HH} - y) = P^H - C_{HL} \delta_H^C$$

$$\delta_L^C \geq \frac{C_{HH} - C_{HL}}{C_{HH} - C_{HL} + \alpha(U_{HH} - C_{HH} - y)}$$

Therefore, if the cross-national company adopts the zero-tolerance strategy, the options when then cost is low is the same as when the cost is high.

3.2.3. The role of explicit and implicit contracts when the cross-national company adopts the repeated game

1) Only providing the implicit contract

When the cross-national company does not prepare the explicit contract, the implicit contract that the local

company faces is $\frac{P - C_{HH}}{1 - \delta} \geq P - C_{LL}$. What is

different is that when the contract cost is low ($y \leq U_{HL} - C_{HL}$), then, when the local company violates the contract, the cross-national company can prepare a contract so that it can obtain some profit in the next round of profit

distribution ($U_{HL} - C_{HL} - y \geq 0$), and therefore the repeated game occurs. If the cross-national company adopts repeated game for cooperation, the local company will face less threats, and there will be a value on the right side of the equation, i.e., the profit gained through repeated game after the violation. Therefore, there might be opportunism in the local company. In long-term repeated

game, the penalty for contract violation $\frac{P - C_{HH}}{1 - \delta}$ will be changed to $\frac{P - C_{HH} - (U_{HL} - C_{HL} - y)}{1 - \delta}$. In this

case, the conditions to hold the implicit contract will be weakened.

2) Providing both explicit and implicit contracts

If the cross-national company provides a package that contains both explicit and implicit contracts: the cross-national company provides $P \geq C_{HH}$, and requires the local company to make the optimal investment. In this case, if the local company provides technical devices of low quality (L.), the cross-national company will discover and make the local company pay a penalty $D \geq C_{HL}$. If the local company selects (L.), the profit is $P - D$; if the high quality is selected (H.), the profit is $P - C_{HL}$. Obviously, the local company will select (H.). Then, when

$\frac{P - C_{HH}}{1 - \delta} \geq P - C_{HL}$ holds, the implicit contract will take effect automatically. Under repeated game, the local company will violate the contract because the penalty is low (zero-tolerance is not adopted), the cross-national

company will likewise design a contract to gain secondary optimal profit in the next round of transaction. The penalty

for contract violation is changed from $\frac{P - C_{HH}}{1 - \delta}$ to $\frac{P - C_{HH} - (U_{HL} - C_{HL} - y)}{1 - \delta}$.

By comparing 1) and 2), we can find that $C_{HL} > C_{LL}$, so the implicit contract in 2) is easier to hold than that in 1). Thus, the explicit contract can be added to supplement the implicit contract.

4. Conclusions and suggestions

When the cost of the contract is low ($y \leq U_{HL} - C_{HL}$), the explicit contract and the implicit contract will play a supplementary role under repeated game. Under zero

tolerance, if $\frac{(U_{HH} - C_{HH})C_{HL}}{C_{HH}} \geq y$, and $\delta_H^C \leq \delta \leq \frac{(U_{HH} - C_{HH})C_{HL}}{C_{HH}}$, we assume $C_{HH} \geq U_{HL} - C_{HL}$,

then the explicit contract will play a complementary role to the implicit contract.

Thus, the cross-national company can make full use of implicit and explicit contracts to improve their performance of cooperation with local companies.

The cross-national companies should establish elaborate reputation mechanism to reduce establishment of explicit contracts. An elaborate reputation mechanism allows the members to stay in a strict zero-tolerance state and thereby force them to abide by the contract.

Cross-national companies will establish an information sharing platform with upstream and downstream companies in the same industry. Sufficient credit information can allow both parties to know their respective information, and reduce doubts or lack of confidence due to information asymmetry. When the cooperation proceeds to a certain degree, an independent, efficient and profit-making credit agency system should be established. Credit agents of a certain scale can create an elaborate credit data environment.

When establishing incentive contracts and profit distribution contracts, cross-national companies should establish different contracts as per the development states, combining explicit and implicit contracts to minimize the cost and maximize the profit.

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