How does Knowledge Sharing and Governance Mechanism Affect Innovation Capabilities? –From the Coevolution Perspective

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Abstract

This paper examines the evolution of knowledge sharing, governance mechanism and innovation capabilities in IT outsourcing cooperation. Using a co-evolutionary approach, we develop a framework that shows how knowledge sharing, governance mechanism evolve. Especially, the transactional and knowledge governance both are adopted, which how impact innovation capabilities. Propositions linking the concepts are provided as guides for future empirical research.

Keywords: Knowledge sharing, Governance mechanism, IT outsourcing

1. Introduction

Knowledge sharing, governance mechanism and innovation capabilities are three of the most important and studied concepts in the IT outsourcing cooperation. In recent years, knowledge sharing and creation have also become a key inter-organizational cooperation research issue. Knowledge sharing and adjustment by the partners are the keys to cooperation longevity and the avoidance of premature dissolution. Negotiating and forming cooperation initiates a dynamic relationship that must evolve if it is to be successful. In this paper, we examine how cooperation evolves and how that evolution impacts knowledge sharing, governance mechanism and innovation capabilities. Although various studies have examined relationships between knowledge sharing and governance mechanism, the relationships between innovation capabilities and these two concepts have not been studied. Also, extensive literature deals with the governance mechanism of IT outsourcing cooperation, but the role of knowledge sharing has received little attention. Thus, we believe that the literatures dealing with knowledge sharing, governance mechanism and innovation capabilities have not been linked in a systematic fashion, leaving gaps in theoretical understanding of the relationships among the concepts. By linking the three concepts in a theoretical framework, our work will shed new light on how IT outsourcing cooperation evolves from initial conditions to evolved conditions. To do this, we examine the co-evolutionary processes associated with trust, control, and learning.

2. Theoretic Backgound

2.1 The coevolution theory

The co-evolutionary perspective is emerging as an important organizing framework for inquiring into organizational conduct and outcomes as a joint function of managerial efforts and selection pressures imposed by the environment. According to Lewin and Volberda (1999), the properties of co-evolution includes: (1) Multilevelness/Embeddedness; 2) Initial condition and consequence; 3) Positive feedback and recursive bidirectional causality; 4) Multidirection causalities; 5) Nonlinearity. Base on the above points, this study is trying to interpret the requirements of the perspective of co-evolution.

The inter-organizational cooperation is the dynamic systems of adaptation and evolution, which has become well accepted. We examine the evolution of cooperation emphasizing on the simultaneously changing relationships between knowledge sharing, governance mechanism and innovation capabilities. The idea of co-evolution indicates that the concepts will evolve over time, and will impact other concepts. Thus, various ideas could show depending on how the cooperation moves from initial conditions to evolved conditions. After an overview of the knowledge management and governance mechanism concepts, we consider the initial internal and external conditions between the partners and the establishment of governance mechanism. We argue that the selection of initial governance is influenced by collaborative objectives, which in turn are influenced by knowledge sharing between the partners. As initial conditions give way to evolved conditions, the partners learn from and about each other, which promote the realization of private and common benefits.

2.2 Transactional governance

This perspective is in step with the transaction cost theory. Inter-organizational governance is one of the most important topics for inter-organizational researchers. However, governance is a multidimensional concept, and different theoretical fields have different assumptions about the nature of governance. In lines with the arguments of previous research, this paper discusses and defines transactional governance that follow from "what" and "how" analysis approaches. "What" inter-organizational governance defines is structuring relationships. The purpose of transactional governance is achieving the efficiency and effectiveness by design of knowledge sharing mode and types . As for "how" to architecture relationship, it needs to build and maintain relationships by the design of coordinative, incentive mechanism.

The organizing and realization of the quantities and quality of knowledge sharing, is the most important direction in the research of transactional governance. The governance mechanism determines the efficiency of communication, coordination and problem solving in cooperation as well as the private and collective outcome. The formal and informal mechanism are the major mode of transactional governance. The formal mechanism is based on the contract, and the informal mechanism is based on the mutual trust relationship. Through adoptting the contract and building the trust relationship, both sides can realize the knowledge sharing and realization.

2.3 Knowledge governance

The purpose of knowledge sharing arrangement is emphasizing the effectiveness of specific value activities through inter-organization knowledge transferring and sharing. It is associated with knowledge governance perspective. Knowledge governance concerns how processes of knowledge, creation, sharing, integration, use, and retention are influenced through the adoption of governance mechanisms. As an emerging field of management research, knowledge governance considers the interplay between processes of knowledge management and the organizational processes, which emphasize that how the organizational behavior affect the knowledge management. Knowledge governance research suggests that the TMT should design organizational structure and governance mechanisms, such as strategic orientation, control mechanism, and information systems to realize knowledge-based goals , for example, knowledge sharing and integration internally or between firms in cooperation.

Knowledge governance includes four aspects: governance environment, governance mechanisms, implementation and governance goal. The structures and governance mechanisms are important because they set the incentives and coordinate behaviors of organizational members in knowledge processes. As a practical direction for firms, knowledge governance indicates that firms design the mechanisms which reduce costs of creating and sharing knowledge owing to the implicitness and protection of knowledge. Knowledge governance thus means choosing organizational structures (e.g. M or U hierarchies) and coordination mechanisms (e.g. formal contracts, trust, and management styles), so as to maximize the benefits from processes of knowledge creating, transferring, and sharing.

3. Proposition

3.1 The firm's strategy and knowledge sharing, governance mechanism

The evolution of buyer's strategy includes three phases: traditional outsourcing, strategic outsourcing, and transformational outsourcing. The buyers focus on from cost reduction to capabilities enhancement, to organizational transformation. Therefore, to realize innovation, buyers not only need create knowledge, but also assimilate vary knowledge from partners. After integrating internal and external knowledge, buyers then can realize knowledge creation and innovation. Recently, some of providers have started to shift from this practice of contract manufacturing to own brand management (OBM). OBM represents a break from contract manufacturing and requires the focal firm to move from efficiency to innovation. As a result, the focal firm needs to acquire a different set of knowledge to carry out the transformation. Traditionally, Western firms often transfer their technology and management know-how to their foreign partner. In a word, both sides need knowledge sharing to realize respective strategy. The evolution of outsourcing relationships also include three phases: arms-length (transactions), strategic alliances, collaborative development.

3.2 The institutional environment and knowledge sharing, governance mechanism

The both sides face fierce competition under environment uncertainty. The institutional environment includes three types: firstly, the infrastructure of communication, learning and operation management; secondly, the incentive policy of central and local government, for example, remittance tax, import and export license; thirdly, financial capital, land and key technology supply. The policy may incentive the foreign buyers to cooperate with local suppliers. Therefore, buyers and providers may share the knowledge to implement innovation.

3.3 The evolution of Knowledge sharing

In previous research, the buyers shared knowledge with suppliers in IT outsourcing cooperation. The knowledge sharing is from single direction to both directions little by little. In the past, buyers shared knowledge with buyers to

control product quality. Presently, the strategies of both sides need implement innovation. Then, both sides need integrate multiplex knowledge to realize innovation. Therefore, buyers and supplier have the incentive to share knowledge. In previous research, the buyers only share the explicit knowledge and take protect measures to prevent knowledge leakage and opportunistic behaviors. The sharing knowledge only early focuses on surfacing knowledge about production. With the deeper cooperation, both sides will jointly solve problem and cooperative R&D. Therefore, both sides will share tacit knowledge through the close communication. In the cooperation, both sides can learn about organizational routine. The sharing knowledge includes not only production, but also marketing, management.

3.4 The evolution of governance mechanism

In the early IT outsourcing cooperation, the providers depend on the order need by the buyers. If lost the order, then providers will face the crisis. Then, the providers depend on the buyers, which has week bargaining power. To monitor the providers and control the product quality, the buyers must adopt the control mechanism. In the early, lack of understanding and recognition, so the relationship between buyers and providers approximately is transactional trade. The buyers adopt formal contract to control the providers, for example, fixed price contract and material-time contract. With the lasting cooperation, the relationship between buyers and providers become close. The both sides also cultivate the trust through cooperation. The both sides focus on reciprocal but not private benefit. The buyers will adopt the psychological contract to control the providers. The psychological contract is the contractual parties' mental beliefs and expectations about their mutual obligations in a contractual relationship, based on perceived promises of a reciprocal exchange. The buyers are becoming more and more trust on providers. Likewise, other types of cooperation, then buyers also adopt the informal governance mechanism. Through relational governance, the buyers control the providers through trust not contract.

As compared to transactional governance perspective, knowledge base view researchers take bounded rationality (limited cognitive ability) as a point of departure to build research. In addition, because of strategic organizational knowledge used to be tacit and sticky manifestations of knowledge, the arrangement of inter-organizational knowledge flow is an important issue for knowledge management. KBV researchers view knowledge as necessary input of organization task and decision making as well as output of task and decision implementation. Indeed, the creation, sharing and accumulation of organizational knowledge are taken place simultaneously. Therefore, knowledge governance is more complex and dynamic.

The major rationale of inter-organizational knowledge governance perspective is the achievement of organizational learning, knowledge acquiring, knowledge creation and accumulation by structural arrangement of inter-organizational knowledge flow. Drawing on above literature reviews, effective knowledge governance includes: (a) Island of shared knowledge that build up a favorable platform or Ba for inter-organizational knowledge sharing and contribute knowledge flow to search, consult, exchange and transfer knowledge. (b) Loosely coupling structure of inter-organizational knowledge flow: Closely knowledge flow linkages facilitate inter-organizational communication, sharing and transfer; however, it might impede the absorption, acquiring of novel for innovation. Drawing on these rationales of knowledge governance as well as the implications of this paper, the main purpose of effectively knowledge governance in inter-organization is to increase knowledge creation and capability building between OEM suppliers and their international dominant buyers through knowledge flow arrangement between them.

3.5 Knowledge sharing and innovation capabilities

The capability creation is emphasizing on the resource deployment and arrangement in order to gain the competitive advantage. Base on the supplier-customer relationship context, capability building reveals on two main points: exploitative and explorative capability. Explorative capability refers to the capability to use and improve the existing resource and explorative capability refers to the capability to crease new product or business opportunities. The dynamic capability view argues that firms can create value by enhancing their unique capabilities, which are anchored in a firm's capacity to explore and exploit new technologies.

In the case of IT outsourcing cooperation, the knowledge acquired from buyers is surely very important resource for the local partners. In IT outsourcing cooperation, there is often a major difference in the technological and management knowledge held by the local firms and their foreign partners. From our survey to local firms, we find that most local firms have obvious distance with their foreign partners, and they could not improve their capabilities only by internal learning mechanism rather than that of external learning from their foreign partners. Thus, the local partners with strong motive of knowledge acquisition often jointly solve problem with their foreign partners, which can be the best way to acquire tacit knowledge from their foreign partners for the local partners. With the help of the acquired knowledge, the local partners can develop new products quicker than their competitors and enhance firm performance.

3.6 The moderating effect of governance mechanism

In order to coordinate the goals and behaviors of partners, the effective combination of control modes should be carefully chose. Meanwhile, during IT outsourcing cooperation, the mode of cooperation bears cooperation risks (for example, the risk of opportunistic behavior) for both local partners and foreign partners just as all other modes of international cooperation, thus they need to choose proper control mechanisms to reduce the risks. Here, governance mechanism refers to the regulation of activities so that they are in accord with the expectations established in policies and targets. Governance is intended to reduce goal incongruence and preference divergences among alliance participants, and is widely acknowledged as essential for outsourcing cooperation.

Formal and Informal are two basic control mechanisms to reduce the risks such as the risk of opportunistic behaviors. Formal governance mechanism emphasizes the establishment and utilization of formal rules, procedures, and policies to monitor and reward desirable performance. Transaction cost theory suggests that the aim of governance is to avoid opportunistic behavior and decrease transaction costs. Therefore, firms should develop detailed contracts to constrain the opportunistic behaviors. Different with formal governance, the informal governance mechanism relies on shared social norms, values, and culture, and the internalization of goals to ensure desirable behavior and outcome. Social exchange theory suggests that exchanges, including inter-firm cooperation, often carry a social dimension (i.e., intrinsic utility) and an economic dimension (i.e., extrinsic utility). Thus, economic behavior occurs under the influence of both economic and social forces. Because two governance modes have the different characteristics, the partners from different countries have different choice for control mode. The high-context cultures such as that in China emphasize the value of personal relationships and prefer to develop agreements based on trust. Conversely, low-context cultures such as that in the U.S. emphasize the value of performance and expertise (individualism) and prefer agreements that are formal and legalistic. Therefore, both Chinese firms and U.S firms are likely to prefer different control mechanisms in alliances. Thus, every control mode should have different moderating effects on the relationship between knowledge sharing and the innovation capabilities in IT outsourcing cooperation. By effectively choose the governance modes, the interdependence between partners can be increase, which can benefit to the coordination of the partners' goals and then improve the performance of local firms.

4. Conclusions

The main theme of this paper is that knowledge sharing, governance mechanism and innovation capabilities are key concepts that co-evolve overtime. Our position is that the level of knowledge sharing is a determinant of the structures and governance mechanisms that evolve in IT outsourcing cooperation. However, partner firms must balance the inevitable trade-off between knowledge sharing and governance mechanism. We also acknowledged the IT outsourcing capabilities is maximized through high levels of knowledge sharing and proper governance mechanism.

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