

SME Managers' Causal Beliefs of the Role of Inter-organizational Learning in Supply Chain: An Empirical Study

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Abstract: This study answers the call for empirical research on how managers' perceive their business network. Here we focus on SME managers' reasoning regarding inter-organizational learning. We combine the concept of managerial cognition with inter-organizational learning (IOL) theories, and study CEOs' cognitive maps to find out how managers deduce the effects of learning to their company's performance and success. The data consists of interviews of five CEOs of small and medium sized companies (SMEs) representing technology industries in Finland. The SMEs also represented different positions in their supply chains: one subcontractor, one hub, and three companies in the middle of the supply chain. Interviews with the CEOs revealed strong learning intent with effects of relational learning and interactive learning. Learning was described to occur both upstream and downstream of the supply chain, and the CEOs perceived the effects of learning to be beneficial both for the relationships and for the individual companies. We contribute to the knowledge of the role of IOL and CEOs' cognitive reasoning paths concerning its effects on company's performance. By using laddering, a rarely used interview technique in management and organization research, together with managerial cognitive maps, our study provides also methodological contributions.

1 INTRODUCTION

Inter-organizational relationships (IOR) and networking have attracted researchers' interest for decades. IOR research has argued that competition is no longer among companies but among supply chains (e.g. Hernández-Espallardo, Rodríguez-Orejuela and Sánchez-Pérez, 2010; Wowak, Craighead, Ketchen and Hult, 2013). Thus, among scholars there is a growing interest towards inter-organizational learning and knowledge sharing that are seen as important avenues for improving performance in supply chains (e.g. Hernández-Espallardo et al., 2010). Moreover, it has been acknowledged that CEOs have a key role in the development of IORs. This paper aligns with the growing stream of research in managerial cognitive processes, sense-making, and network pictures connected with decision-making in the context of business networks (Henneberg, Mouzas and Naudé, 2006; Ramos, Henneberg and Naudé, 2012). However, a number of questions still need to be investigated. For example, Möller (2010:366) calls for research on actor's sense-making processes, which are seen to be conditioned by the company's

position and role in the network. Corsaro, Ramos, Henneberg and Naudé (2011) highlight the need for more empirical research on the area of how managers' perceive their network, and what is the effect on their actions (also Roseira, Brito and Ford, 2013).

In this paper, we aim to contribute to prior research by studying managers' causal beliefs, i.e. cognitions, concerning the role of learning in supply networks. Researchers have agreed that managers' cognitive models are important to strategic decision-making, and they have an influence on the actors' behavior (Daniels, Johnson and de Chernatony, 1994; Kor and Mesko, 2013). The cognitions allow an individual to store information, interpret it, make decisions and guide his/her actions. However, these mostly subjectively constructed views are influenced also by different views of other practitioners and researchers. Our empirical study addresses SME managers' cognitive models of the role of inter-organizational learning in relation to the performance and success of the company. Underlying this interest are assumptions that cognition is a key factor in purposive social action and performance (Axelrod, 1976).

Inter-organizational learning (IOL) literature has confirmed the positive effects of learning on different performance outcomes, and also confirmed the important role of learning intent in realization of IOL. However, prior research of IOL is mainly focused on relationship and organizational level studies and there is scarce research focusing on individual level investigations (Werr and Runsten, 2012), even though prior research has acknowledged that individuals hold key roles when it comes to knowledge exchange and learning in IOLs. Our intention is to fill this gap by focusing on SME managers' reasoning regarding IOL. More precisely, we are interested in investigating how IOL emerges in managers' knowledge structures, and how managers see the effects of IOL on the company's performance.

The paper has several contributions. Firstly, it increases knowledge about the role of IOL, focusing particularly on relationship learning and interactive learning in supply chain context. Secondly, this paper shows the CEOs' cognitive reasoning paths concerning network relationships and their strategic and operational effects on company's performance. In addition, our study has methodological contributions. We used laddering, a rarely used interview technique in management and organization research, and managerial cognitive maps, which are seldom applied in business relationship research.

The paper is structured in the following way. The next section presents a brief literature review. Second, the methodological premises of the study are explained, following the presentation of the main findings. Finally, we conclude the study and discuss its managerial implications.

2 MANAGERIAL COGNITION AND COGNITIVE MAPS

Due to the growing complexity in business environment, managers employ their internal knowledge structures and develop new structures in order to make sense of their environment (Day and Nedungadi, 1994). Sense-making is a complex individual and also collective phenomenon. It refers to an actor's ability to perceive, interpret, and construct meaning of the world around him/her (Weick, 1995). Through sense-making, actors construe individual cognition, or ways of reasoning about current or emerging issues and phenomena.

Much of interest has been paid to interpretation and sense-making of events, problem-solving, and

decision-making. Underlying this interest in studying management and organization cognition is a general agreement among researchers that cognition is a key factor in purposive social action, performance (Axelrod, 1976), and managers' decision-making (Daniels et al., 1994; Eden and Spender, 1998; Huff, 1990; Walsh, 1995). *Cognition* refers to individual, group, or organization phenomena related to knowing, i.e. questions relating to the types or use of human knowledge. *Cognitive maps* are seen as representations of relevant characteristics in the management of companies, internalized through the thinking of managers or other involved actors (Huff, 1990; Brown, 1992). Two basic elements of cognitive maps are concepts and causal beliefs. Concepts define some aspect of the issue under analysis, while causal beliefs describe the relationships linking concepts within maps (Axelrod, 1976).

Recently, the concept of network pictures has been widely used to study phenomena related to business networking and actors' views about their surrounding networks. However, there are still different interpretations of the concept and how to understand its contents (Ramos et al., 2012:952). Therefore, in this study we use the concept of managerial cognition.

3 INTER-ORGANIZATIONAL LEARNING

Prior research has viewed inter-organizational learning (IOL) from different perspectives. One of the perspectives that is widely used in business relationship research (see e.g. Cheung, Myers and Mentzer, 2011; Jean, Kim and Sinkovics, 2012) is relationship learning. Selnes and Sallis, 2003 (p. 86) define relationship learning as "a joint activity between a supplier and a customer in which the two parties share information, which is then jointly interpreted and integrated into shared relationship-domain-specific memory that changes the range or likelihood of potential relationship-domain-specific behavior". Relationship learning involves three sub processes: information sharing, joint sense-making, and knowledge integration (Selnes and Sallis, 2003). Knowledge sharing is required in order to coordinate collaboration and achieve operational efficiency, however, each organization has different ability to acquire information and thus joint sense-making varies across organizations. In order to complete IOL process, acquired knowledge is integrated into

relationship-specific memory (Selnes and Sallis, 2003), which is essential in bringing the new knowledge into use and delivering the expected performance benefits (Kohtamäki and Partanen, 2016). Another widely used perspective of IOL is interactive learning, which also occurs between two companies and is based on an assumption that acquisition of new knowledge occurs through interaction between members from different organization (Huang and Chu, 2010; Lane and Lubatkin, 1998). Interactive learning view holds that knowledge is shared and transferred at the relationship level, but assimilation or interpretation of the acquired knowledge occurs within organizations, which also means that applying knowledge in practice also occurs within organizations. Moreover, Huang and Chu (2010) state that interactive learning can be viewed as a catalyst for internalized learning, while relationship learning perspective states that learning occurs at the relationship level.

In order to actively learn from supplier relationships, a firm needs to have learning intent, which is a firm's tendency to treat cooperation as a learning opportunity (Fang, Fang, Chou, Yang and Tsai, 2011; Huang and Chu, 2010; Johnson and Sohi, 2003). IOL requires resources and might have high costs and thus not all companies intend to learn from their business relationships, or some companies maintain purely transactional relationships without any learning intent (Huang and Chu, 2010). Therefore, learning intent can be seen as a kind of strategic decision to invest resources in learning (Johnson and Sohi, 2003). Further, it is argued that managers with strong learning intent would attempt to remove barriers of IOL, and would more likely invest resources to establish a formal system or routine for the purpose of learning (Fang et al., 2011). Thus, prior research has confirmed the role of learning intent as an important antecedent of IOL (e.g. Liu, 2012). Moreover, prior studies have confirmed the positive performance effects of IOL on relationship performance (e.g. Johnson and Sohi, 2003; Selnes and Sallis, 2003), on operational performance (e.g. Cheung, Myers and Mentzer, 2010; Hernández-Espallardo et al., 2010), on market performance (e.g. Chang and Gotcher, 2010; Jean, Sinkovics and Kim, 2010), and on innovation performance (e.g. Chen, Lin and Chang, 2009; Fang et al., 2011).

In sum, prior research has shown the positive effects of IOL on performance and has stated that learning intent is an important antecedent of IOL. As well as prior research has emphasized the important

roles of individuals and their behavior in IOL (Werr and Runsten, 2012). However, the IOL research has mainly focused on organizational and relationship level investigations and there is a need for further research of the roles of individuals in IOL processes (see e.g. Werr and Runsten, 2012). Thus, the current paper focuses on the role of IOL in managers' knowledge structures, i.e. cognition, and further in their cognition of doing successful business and creating competitive advantages. In addition, we focus on how managers perceive the effect of IOL on their business.

4 METHODOLOGY

To collect data, we conducted open-ended in-depth interviews with the CEOs of five SME companies representing technology industries in Finland. The SMEs were selected using purposeful sampling (Eisenhardt, 1989) to obtain data, which is rich of information. We selected companies in different positions in different supply chains (table 1) to obtain and contrast the views from the buyer and the supplier companies. Three of the SMEs were "in the middle" of their supply chain and, thus, had both upstream suppliers and downstream customers (B, C, D). One of the SMEs was a subcontractor (A), and one of the SMEs was a hub company (E), the former having mainly upstream customers, and the latter mainly downstream customers.

During the interviews, respondents were asked to describe key elements of their thinking about the company's profitable performance. *Laddering*, which is rarely used in management and organization research (Bourne and Jenkins, 2005: 411; for example Brown, 1992; Langerak, Peelen and Nijssen, 1999), was used as an interview method. Laddering involves tailored interviewing with repeatedly asked probing questions, such as "how does it affect", "why is it important", which represents an interviewing protocol known laddering-down to antecedent conditions and laddering-up to anticipated effects (Bourne and Jenkins, 2005; Brown, 1992; Grunert and Grunert, 1995). The interviews lasted between 50 and 90 minutes, and were audio-recorded and transcribed with the permission of the interviewees.

The data were analyzed applying content analysis techniques (Miles and Huberman, 1992) and cognitive mapping with Decision Explorer® Software. Consequently, we could present separate *cognitive maps* of each interview for further analysis. Cognitive mapping has been widely used in

the field of management and organization research (for example Calori, Johnson and Sarnin, 1992; Daniels et al., 1994; Jenkins and Johnson, 1997), but it is very rare especially in the research on business relationships. Cognitive mapping techniques refer to methods that are used to explore subjective beliefs, i.e. the structure and content of individuals' cognition (mental models) of given issues (Axelrod, 1976; Spender, 1998), and the way in which individuals organize their thoughts. These visual representations (Chaney, 2010; Clarke and Mackaness, 2011) helped the researchers to work through analysis process identifying important issues and to discuss them further. The coding and the cognitive maps were then compared. During the analysis, the information was processed by moving back and forth between the data (Dubois and Gadde, 2002), the framework of the study, and the tentative findings (Eisenhardt and Graebner, 2007).

5 FINDINGS AND DISCUSSION

The CEOs perceived IOL to be important for the company's success, showing thus strong learning intent (Fang et al., 2011). Figure 1 demonstrates a simplified example of the cognitive map, i.e. how IOL emerges in one of the CEOs (D; see table 1) knowledge structures, introducing the antecedents for learning and effects of learning for the SME he represented. The appearance of IOL in CEO's cognitive map reflects the learning intent of a company.

According to the CEO (D) it was *“impossible for the company (D) to build an international sales network without the resources and connections provided by a large partner”*. In order to attract and convince this large partner about company D's capabilities, the company D had made strong investments in product development. These investments proved to be fruitful, and a contract was established between company D and the large partner. In their relationship, these partner companies shared information, and combined their

knowledge to learn aiming to develop the business further. Learning, mutual trust, and continuing relationship resulted in win-win situation for the two companies. Further, new markets and growth of the business were materialized, which was experienced as a success for the company D.

Generally, resources were allocated to common workshops and product development (Fang et al., 2011). Typically, the CEOs referred to interaction, open dialogue and joint activities (Selnes and Sallis, 2003; Huang and Chu, 2010) as the means of learning, and trust was seen as an important prerequisite for learning (Håkansson, Havila and Pedersen, 1999). Regular discussions and workshops as well as meetings for product or service development were discovered as platforms for open information sharing, joint sense-making, and knowledge integration between companies in their relationships (Selnes and Sallis, 2003).

Both relationship learning and interactive learning were discovered in CEOs' perceptions; learning was suggested to have been applied to develop activities and resources to benefit the company itself and its cooperating partners, specific relationships (relationship learning), and the company's processes (interactive learning). Relationship learning was found to have an influence on, for example, customer satisfaction, relationship continuity, (supplier chain) efficiency and effectiveness, cost-efficiency, and quality improvement. The perceived learning was also seen to have an impact on the company's growth, brand image, internationalization, profitability and competitiveness. However, for example profitability and competitiveness, albeit primarily connected to the focal company, can have effects on both sides of a buyer-supplier relationship.

The company's position in the supply chain was noticed to have an effect on CEOs' cognitive models related to IOL, although interactive learning and learning effects were also discussed by all the CEOs. The CEO of the hub company (E) at the end of the supply chain reflected more to relationship learning related issues, meanwhile at the other end of the

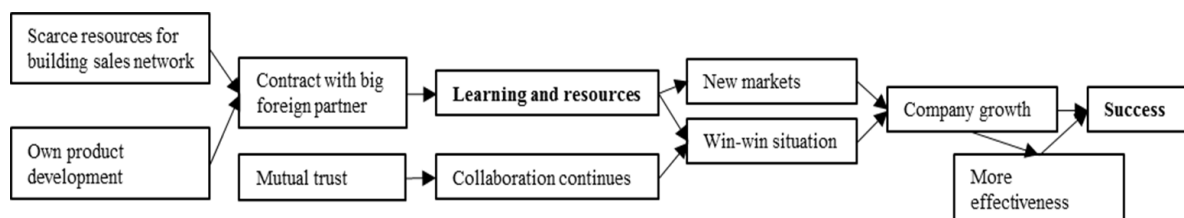


Figure 1: A simplified visualization of a CEO's cognitive map.

Table 1: Selected examples of CEOs' perceptions of learning and its effects.

Company's position in the supply chain	Relationship/ Interactive learning	Effect of IOL perceived by CEO	Quotes
A. Subcontractor	Interactive	Efficiency and effectiveness, growth, customer satisfaction, relationship continuity, brand image	"...when you work with many companies you learn their procedure and ways-of-doing and to do things differently yourself. – You also have to know what the customer really needs."
B. In the middle of supply chain	Interactive Relationship	Growth, efficiency, process development, quality improvement, profitability	"...quality and security of supply has improved. – In product development our designers communicate together and change information for improving the quality of product development."
C. In the middle of supply chain	Interactive Relationship	Supplier chain efficiency, cost-efficiency, profitability, security of delivery, competitiveness, relationship continuity, specialization	"...we have learned because the client is so strict with the quality issues...we learn about the customer's product, and also about the customer's customer's needs."
D. In the middle of supply chain	Relationship	Getting new knowledge and resources, efficiency, internationalization, growth	"Without this cooperation it is impossible for us to get these resources. Exists a win-win relationship. We can develop something to benefit of our partner."
E. Hub company	Relationship	End-customer satisfaction, efficiency and effectiveness, profitability, competitiveness, growth	"We share information openly to our dealers and suppliers and we think together how to develop quality etc. – Openness and trust are the key words in relationships."

supply chain, the CEO's (A) perceptions were related more to interactive learning. However, joint activities and IOL was described occurring both in upstream and in downstream supply chain. As well as customers and suppliers both can be regarded as sources of information and new knowledge. The supplier responded to the customer's complaining by suggesting improvements, which were then planned and realized in cooperation. Respectively, when the customer demanded better quality and fluent processes, the supplier developed them together with the customer. The supplier was also able to learn through the requirements of the customer's customer, and adapt its services accordingly.

The motivation for companies C, D and E to build relationships was strategic meanwhile companies A and B built their relationships mainly through transactions (see table 1). We found that in these strategically important relationships (C, D and E), the CEOs referred more often, and discussed more broadly issues related to relationship learning and the effects of learning than in mainly transaction-oriented relationships (A and B).

6 CONCLUSIONS

In this study, using laddering techniques we interviewed the CEOs of five SMEs in technology companies in Finland to analyze the CEOs' perceptions of inter-organizational learning. We applied cognitive mapping to analyze how managers construe the effects of learning to their company's performance and success. Due to the limitation in the length of the paper, we provided a simplified example of a CEO's cognitive map, and an example how each of the five companies' CEOs perceived learning, and the effects of learning on the company's performance. We noticed that the CEOs invested resources to enhance learning, and we also registered a number of positive learning outcomes. This paper contributes to the IOL research by showing that the existence of IOL in CEO's cognitive map reflects a company's learning intent. Moreover, we found that different types of learning emerge in supply relationships in accordance with its strategic importance.

Prior research (e.g. Axelrod, 1976; Huff, 1990) has confirmed that cognitive maps affect decision making. Therefore, we recommend that managers should be aware of their cognitions, personally as well as understanding that cognitions may often differ, for example between team or board members in a company, or between different network partners. In supply chain relationships, learning is expected to result also in changes in managers', or other related persons' cognitive maps, as an outcome of information sharing and mutual sense-making. Since IOL has proved to be an important source of competitive advantages (Spekman, Spear and Kamauff, 2002), managers should consider in which position IOL emerge in their cognitive maps of company performance and if there is room for improvements.

The findings of the paper indicate that strategic importance has an influence on the type of learning that exists in managers' cognitions. Strategic importance can also reflect dependence between the customer and the suppliers. Thus, future research could investigate the effects of dependence on managers' cognitions concerning IOL. Moreover, it would be interesting to compare cognitions of managers in matcher dyadic and triadic network relationships.

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