

Paul C. van Fenema¹

Netherlands Defense Academy, Section Management, Organization & Defense Economy

Claudia Loebbecke²

University of Cologne, Dept. of Business, Media and Technology Management

**ORGANIZING FOR INTER-ORGANIZATIONAL
COOPERATION:
A KNOWLEDGE-BASED PERSPECTIVE**

ABSTRACT

While a substantial amount of literature deals with inter-organizational cooperation, scholars mainly focus on mechanisms for coordinating between organizations. The literature offers only limited insight into organizations' internal functioning in relation to inter-organizational cooperation. This paper contributes to filling this gap. Taking a knowledge-based perspective, it proposes a research model for investigating the internal structuring processes of organizations in relation to external demands from inter-organizational relationships. It proposes and strategic and tactical challenges surfacing when organizing for inter-organizational cooperation and concludes with a summary and a brief outlook to further empirical research.

Keywords:

Inter-Organizational cooperation, Internal Processes, Knowledge-Based Perspective

¹ Paul C. van Fenema, Netherlands Defense Academy, P.O. Box 90002, 4800 PA Breda, The Netherlands, +0031 076-5273878 pfenema<at>gmail.com

² Claudia Loebbecke, University of Cologne, Pohligstr. 1, 50969 Koeln, Germany, Tel.: +49-221-470-5364, claudia.loebbecke<at>uni-koeln.de

1 INTRODUCTION

While knowledge appears in the literature in many definitions and understandings (e.g., Davenport, Prusak 1998), it is commonly seen as a critical resource (e.g., Drucker 1993). Teece (1998) even argues that the essence of a company is its ability to create, transfer, assemble, integrate, and exploit knowledge assets. But managing and in particular creating the necessary knowledge is complex and costly (Demsetz 1988).

In this context, knowledge intensive organizations consider inter-organizational knowledge networks as opportunity to create the required knowledge, and hence they increasingly focus on competencies to internally re-combine knowledge with other resources towards new products (Galunic, Rodan 1998; Provan et al. 2007). Facing external demands due to innovation pressure and competition and the need for cost-effective knowledge absorption, creation, exploitation, raises new internal organizational challenges on the strategic and the tactical level for inter-organizational knowledge processes.

On the strategic level, organizations need to learn how to cooperate without losing track of organization-level interests, capabilities, resources, and how to realize synergies without losing freedom of the way their own organization functions (Caeker 2008) as well as its autonomy (Aiken et al. 1975). On the one hand, too much adaptation risks a lack of identity and viability, but on the other hand, too little adaptation undermines synergies, and connectivity and exclusion from relevant networks. So, while reciprocal knowledge sharing may enhance the total and individual added value, inter-firm knowledge sharing may also affect the uniqueness and thus competitive contribution of a firm's knowledge repository (Wasko, Faraj 2005). For example, opportunistic behavior of counterparts may erode anticipated benefits of cooperation and result in unevenly distributed value.

On the tactical level, organizations and managers need to think about their internal operations in relation to their participation in inter-organizational cooperation projects and in relation to external demands from inter-organizational relationships (Theuns 2008). Materializing benefits of efficient inter-organizational cooperation at the tactical level requires standardization in the sense of articulation and 'unstickying' of knowledge for transfer (von Hippel 1994; Szulanski 2003; Carlile 2004; Kumar et al. 2009).

While a substantial amount of literature deals with inter-organizational cooperation, scholars mainly focus on mechanisms for coordinating between organizations (Kumar, van Dissel 1996; Grandori 1999), such as standardization for interoperability (Fewell, Clark 2003). The literature offers useful, but limited insight into organizations' internal functioning in relation to inter-organizational cooperation, i.e., what organizations do to function as organizations while creating synergetic advantages in working with other organizations.

This research contributes to filling this gap extending works on intra-organizational knowledge processes to inter-organizational relationships. After setting the conceptual background, it proposes a research model for investigating the internal structuring processes of organizations in relation to external demands from inter-organizational relationships. It proposes strategic and tactical challenges surfacing when organizing for inter-organizational cooperation and concludes with a summary and a brief outlook to further research.

2 CONCEPTUAL BACKGROUND

The movement of knowledge in organizations is commonly labeled 'knowledge transfer' (Szulanski 1996; Argote 1999). Any efficient and effective knowledge transfer "requires stable conditions that allow a common lexicon to be created and to adequately function as a common knowledge" (Carlile 2004: 558). The implied cooperation increasingly concerns processes that depend on and or yield up-to-date and applied knowledge (Ramesh, Tiwana 1999; Rico et al. 2008).

Investigating knowledge from a strategy perspective has shed light on the question of why firms share capabilities and knowledge, even though they consider and manage knowledge as a valuable resource which can determine sustainable competitiveness (Wernerfelt 1984; Stalk et al. 1992; Dean, Kretschmer 2007). The resource-based view assumes that firms aim to achieve above normal returns and exploit a set of resources - and their combination transformed into competencies and capabilities - as a precondition for sustained superior returns (Barney 2001; Rugman, Verbeke 2002; Felin, Hesterley 2007). Assuming firms with heterogeneous resource and capability endowments (Teece et al. 1997), the resource-based view describes resources with such a potential as firm-specific, valuable to customers, non-substitutable, and difficult to imitate. Building on heterogeneous resource and capability endowments, Demsetz (1988) proposes specialization in the creation of knowledge as such specialization would ease the availability of knowledge which is "costly to produce, maintain and use" (Demsetz 1988: 157).

Inter-organizational knowledge networks (e.g., Klein 1996; Mowery et al. 1996; Inkpen, Tsang 2005; Dyer, Hatch 2006; Inkpen, Pien 2006) provide a setting for inter-organizational cooperation. Knowledge networks are commonly defined as formally set up mechanisms, structures, and behavioral patterns that connect knowledge agents who were not previously connected because of functional, hierarchical, or legal boundaries between organizations (Cross, Cummings 2004; Hansen et al. 2005). In these inter-organizational knowledge networks, learning - similar to intra-organizational learning (e.g., Larsson et al. 1998) - determines the knowledge absorption which is partially dependent on organizations positively influencing each other (Doz, Hamel 1998; Child 2001; Holmquist 2003; Todorova, Durisin 2007).

When adopting an inter-organizational knowledge perspective, new questions arise such as: Who are appropriate knowledge agents for knowledge-centered inter-organizational cooperation? Who is intellectually capable, the organization or its individual employees? Does knowledge reside at individual and the organizational level? Among others, Drucker (1993) and Grant (1996) stress the predominant importance of individuals. Literature considers organizational cognition or organizations as cognitive entities a suitable unit of analysis. In the organization science literature, organizational learning is a central tenet (Huber 1991; Simon 1991; Argyris, Schön 1996; Reagans, McEvily 2003; Hansen et al. 2005) and is believed to lead to competitive advantage (Senge 1990; Moingeon, Edmondson 1996; Hansen, Nohria 2004; Dyer, Hatch 2006; Lavie 2006). In light of the often predominant resource based view, competitive advantage is associated primarily with heterogeneous resource endowments of firms (Wernerfelt 1984; Prahalad, Hamel 1990; Barney 1991; Hamel 1991; Felin, Hesterley 2007; Newbert 2007).

However, different from other assets, knowledge is not readily tradable and can hence neither equilibrate through factor input markets nor be simply transferred (Carlile 2004). Knowledge 'sociality', being embedded within routines, culture, and norms

(Spender 1996), hampers the simple and transactional inter-organizational knowledge transfer. Instead, the creation and transfer of knowledge requires interaction of agents (e.g., Mulkay 1979; Griffith et al. 2003). In other words, knowledge creation in inter-organizational networks is feasible if agents with a shared understanding of a problem interact and, as a result, extrapolate from a specific context to a new understanding of phenomena (Nonaka 1994; Reagans, McEvily 2003). It is also possible that agents with radically different problem understandings and interpretative models get involved in the interaction (March 1991). In turn, anything that reduces interaction among agents impedes knowledge creation and transfer (Griffith et al. 2003; Cross, Cummings 2004).

Adopting a knowledge-based perspective highlights from a strategic point of view strategic and tactical challenges. First, with knowledge creation shifted to such inter-organizational networks, individual organizations need to balance the competitive advantage derived by re-combining commonly available knowledge against the threat of an unwanted leakage of a scarce valuable asset and core competencies (Hamel et al. 1989). Potential dangers of becoming hollowed out by 'predatory' partners require appropriate steps to be taken to ensure that only mutually beneficial knowledge transfers are possible (Capron, Chatain 2008). And second, on the tactical level, achieving process interoperability appears a formidable hurdle to reaping the benefits of inter-organizational cooperation (Fewell, Clark 2003). In this situation, quickly connecting and disconnecting processes for enhancing operational versatility (van Liere et al. 2004; Meiter 2006) appears a relevant (Denning 2006) yet challenging vision.

To understand how organizations respond to these strategic and tactical challenges, it is important to model the intra-organizational functioning, which will be presented in the next section.

3 RESEARCH MODEL AND PROPOSITIONS

3.1. Defining Research Model Processes

We define a organization as a set of processes, which are interrelated with each other, and conceptualize organizational functioning as a set of processes, that are related in a non-inconsistent manner (Bacharach et al. 1996). Following Weick and Roberts (1993) and drawing on Asch (1952), we point out three processes, namely *representation*, *subordination*, and *contribution* that – when heedfully related – enable coherent organizational functioning (see Figure 1). These three processes result in "a joint situation of interrelations among activities", which Asch (1952: 252) referred to as 'a system'. We understand these processes to refer to socio-cognitive processes of absorbing, storing, and using knowledge (Huber 1991; Gibson 2001; Lewis et al. 2005), processes of defining legitimacy and dealing with interests and power (Giddens 1986; Bacharach et al. 1995; Howcroft, Light 2006), and processes of acting in concert to create value (Kang et al. 2007; Lepak et al. 2007; Priem 2007). Moreover, we draw on literature offering a variety of processes – or capabilities – that make up organizations (Zollo, Winter 2002), such as coordination, learning, and identity formation (Kogut, Zander 1996), processes of absorption, coordination and adaptation, and cognitive and action processes (van der Laan et al. 2008).

Inter-organizational cooperation becomes the process of mutually adjusting, (re)orienting and changing organizational processes, demanding intertwined inter-organizational processes. This brings us closer to understanding the challenge to strike a balance between organizational functioning and the demands of inter-organizational cooperation, i.e., to realize their own selfish or altruistic goals under constraints imposed by their own organizations and by specific organizational situations over which they have no control. Hence, in order to conceptualize inter-organizational cooperation, we understand organizational functioning as a collection of interrelated processes. Inter-organizational cooperation externally relates these internal processes to yield joint outcomes (Hoffman 2001; Delmas, Toffel 2008).

From the above, we derive our research model (see Figure 1).

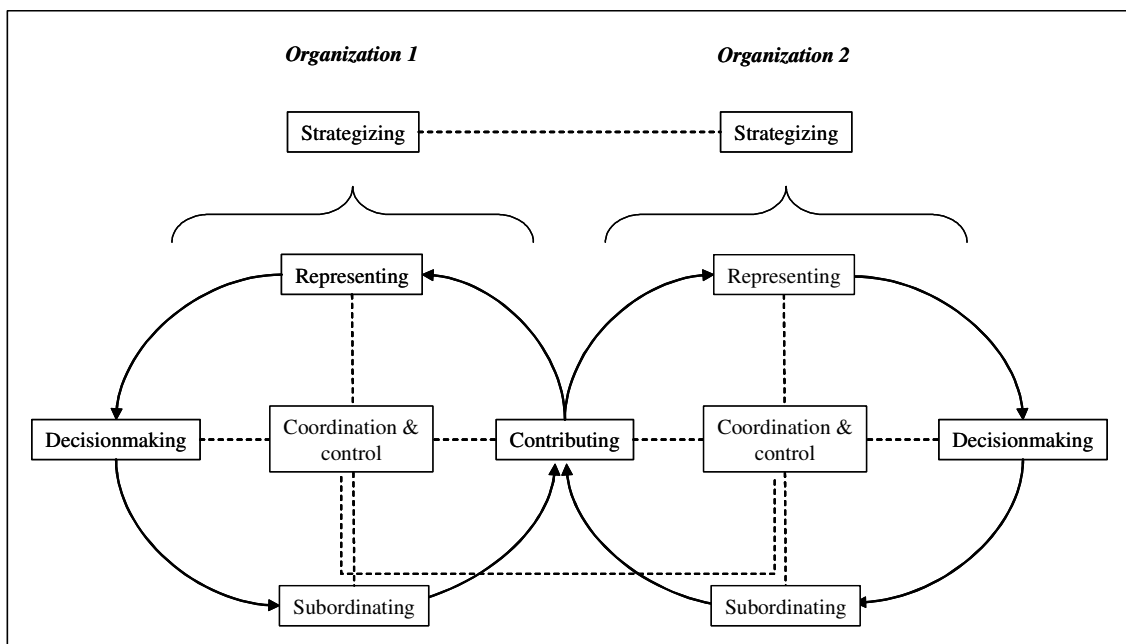


Figure 1: Organizing for Inter-Organizational Cooperation - A Research Model

3.2 Propositions Regarding Strategic and Tactical Challenges

Carlile (2004) developed a framework featuring three progressively complex boundaries (syntactic, semantic, and pragmatic) and three progressively complex processes, i.e., transfer, translation, and transformation (see Figure 2). The three processes describe how knowledge is managed between actors during an increasing degree of novelty circumstances (e.g. the development of new products). Thereby the properties of knowledge at a boundary are (1) difference, (2) dependence, and (3) novelty. For example, during the development of new products employees from different divisions work together, and as such they possess different domain-specific knowledge. However, to develop new products, their different domain-specific knowledge is dependent on each other's insights.

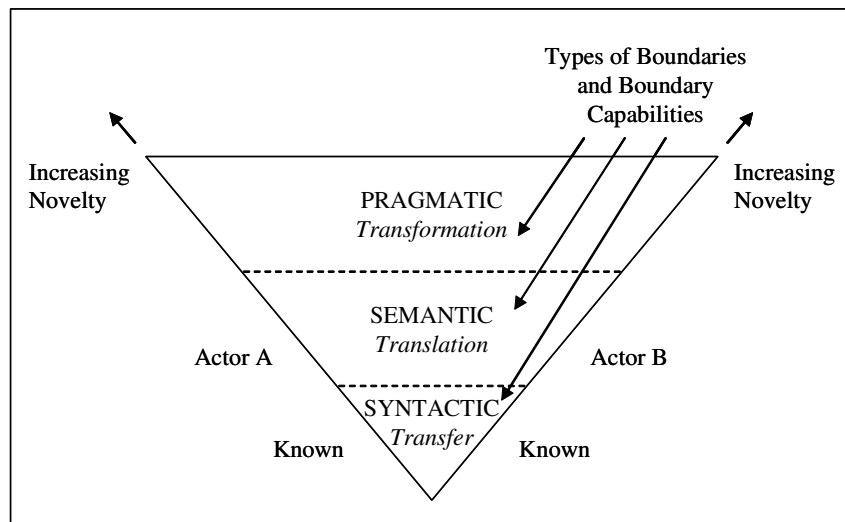


Figure 2: An Integrated Framework for Managing Knowledge Across Boundaries (Source: Adopted from Carlile 2004, p. 558)

On the syntactic boundary level, actors are aware about their domain-specific knowledge and transfer it over the common knowledge, e.g. lexicon. At this level the information-processing approach is the dominant view and knowledge is seen as a 'thing' which can be stored and retrieve. However, simply transferring knowledge proves problematic when novelty arises because the current lexicon is no longer sufficient to represent the new ascending differences and dependencies (Carlile 2004). Thus, other mechanisms are necessary to grasp and control the different and dependent knowledge, which changed with the increasing novelty.

Given this situation, it is not surprising that – at the semantic boundary level – the development of common meaning between actors is very important as a way to address interpretive differences across boundaries. To overcome the increasing novelty and to grasp and control the different and dependent knowledge, it is possible to use tools or agents to develop an understanding between the different meanings and thought world of actors.

However, under some circumstances it is not just a matter of translating different meanings, but of negotiating interests and making trade-offs between actors (Wenger 1998; Brown, Duguid 2001; Carlile 2004). This occurs during the pragmatic boundary, where different point of views and meanings are transformed into common goals and interests.

Combining the 'Organizing for Inter-Organizational Cooperation' research Model (see Figure 1) with the integrated framework for managing knowledge between boundaries, we put forward two main propositions concerning the strategic and tactical challenges in order to summarize our thoughts.

Individuals associated with cooperative partnerships represent organizational experts directly participating to spot opportunities and to synergistically interrelate their expertise (Malhotra et al. 2001). As higher levels of tacitness may be interpreted as increasing novelty, organizations aim at a pragmatic, transformational boundary management in order to protect the knowledge of such individuals (Carlile 2004).

Lower levels of tacitness conversely lead to syntactic transfer management (for a similar point of view on knowledge transfer conceptualization see Bechky 2003).

Rather than focusing on the task dimension exclusively, political and cross-functional debates on decision making and subordination processes intensify in terms of frequency and depth of various sources of expertise. Decision making become less structured since tacit knowledge processes are hard to predict, and more dialectical. "A dialectic perspective suggests that performance is also influenced by the accuracy with which managers make trade-offs, and by their abilities to capitalize on ... tensions" (Vlaar et al. 2006: 442).

Representation processes require increased information processing and sense-making, and thence become more social. Organization members interfacing with partner organizations may be opportunistically manipulated to insert excess knowledge resources into the cooperative relationship. The increased social nature of representation refers to intra-organizational collectives, where actors of one organization interface with actors of a partner organization. Bringing in various points of view, they enrich sense-making, sense-breaking, sense-giving, and sense-demanding processes (Vlaar et al. 2008) in order to understand the direction a cooperative relationship is taking. They filter information processes, theorize on partner intentions and strategies, and monitor organizational interests.

Basically, an increased iteration of (i.e. recurrent attention to) strategizing processes is required. Tacit knowledge decreases plan-based strategizing, in favor of an incremental approach (Mintzberg 1990). Strategizing becomes more concerned with both organizational identity and mission as well as partner organizations' intentions. Moreover, with tacit knowledge, strategizing emphasizes the potential and relevance of resources for participating in cooperative, innovative relationships (e.g. inter-organizational R&D teams) (Cook, Brown 1999; Tsoukas 2005), rather than orienting towards value creation based on structured processes relying on explicit knowledge (Ghoshal, Moran 1996). This influences coordination and control processes as well. This leads us to proposition 1a:

Proposition (1a).

Increasing tacitness of knowledge driving the value creation process is associated with decreased demarcation of contributing processes (on the edge of organizations) in relation to organization-internal processes.

Low levels of structurability and observation have, however, been associated with high information processing, and control based on selection and socialization. While organization members participate in the partnership, they keep functioning in a tightly knit team from their own organization to extract knowledge and ensure their commitment to organizational goals (Loebbecke, van Fenema 2000). This leads us to proposition 1b:

Proposition (1b).

Increasing tacitness of knowledge driving the value creation process is associated with increasing tightness of intra-organizational processes coupling to adjust organizational functioning in the relationship at an organizational level.

At a tactical level, increasing frequency of changing inter-organizational cooperation parameters or switching such relationships is associated with a number of instances from a functional perspective. This leads us to proposition 2:

Proposition (2)

Increasing frequency of changing inter-organizational cooperation parameters or switching such relationships requires an increasing structuredness of linkages between intra-organizational processes at an organizational level and is thus associated with:

- (a) Contributing processes that reflect an increasing variety of configurations, and are aimed at short term value creation with partner organizations (D'Aveni 2007).
- (b) Decision making and subordination processes that become more articulated and hence transparent (Strauss 1978), modular (Schilling 2002), and oriented towards partner organization or industry level expectations. The tactical challenge broadens an articulated set of decision criteria to lower ad hoc efforts of decision making without simplifying organizational response patterns,
- (c) Representation processes that become more structured and more knowledge intense, i.e. demanding elaborate knowledge of (potential) cooperation partners to configure expectations from a broad repertoire. Knowledge is translated into a vast repertoire of possible actions, such as doctors or pilots accustomed to elaborate descriptions of possible situations and response scenarios (Weick et al. 2005).
- (d) More structured strategizing to check relevance of cooperation partners and viability of exchange, and more industry-level strategizing in order to build awareness of practices at that level influencing partner organizations (Seo, Creed 2002; Gosain 2004). Such strategizing implies consequences for coordination and control.
- (e) More standardized, flexible, and actively managed coordination and control mechanisms, such as inter-organizational standards and open systems, that are tightly aligned with cooperation partners (Caeker 2008). Standardization – for instance by means of IT (Argyres 1999) – lowers transaction costs, while flexibility ensures micro adjustments to partner organizations and monitoring of organizational and joint performance. While, according to Transaction Cost Economics organizations function in situations when unique internal communications are considered necessary, this tactical challenge changes that uniqueness from communication processes towards resource combination in relation to external partners (Galunic, Rodan 1998). Thus, instead of internally creating distinctive value, the organization distinctively contributes to joint value creation. Standardization relies more on industry level (e.g. ISO) norms, rather than on internally invented norms or norms developed specifically for a partnership. This reduces dependence on specific partners.

4 SUMMARY, IMPLICATIONS AND CONCLUSION

Taking a knowledge-based perspective, we propose a research model for investigating the internal structuring processes of organizations in relation to external demands from inter-organizational relationships. The suggested model is based on prior work on intra-organizational knowledge processes (e.g., Weick, Roberts 1993; Carlile 2004). It is determined by (1) representing, (2) decision making, (3) subordinating, (4) contributing, (5) coordination & control, and (6) strategizing processes of inter-

organizationally networked organizations. The model thus contributes to the literature by transferring intra-organizational knowledge processes to inter-organizational relationships. Further, we propose two main propositions regarding strategic and tactical challenges when organizing for inter-organizational cooperation: Proposition 1 focuses on the effects of increasing tacitness of knowledge on intra-organizational processes. Proposition 1 centers on the implications of increasingly changing inter-organizational cooperation parameters. This paper marks a first step towards a comprehensive knowledge-driven understanding of the underlying intra-organizational processes of inter-organizational cooperation. The presented models and propositions may serve as foundation for future empirical research.

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