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# INTERORGANIZATIONAL KNOWLEDGE MANAGEMENT – TOWARDS COOPETITION STRATEGIES?

Interorganizational relationships field of research has long focused on learning, competence, skills and knowledge management issues. Studies have been performed from many theoretical stances bringing up findings difficult to compare. This paper provides a broad overview of the literature focusing on three issues: the rationale for collaborative knowledge management, the interorganizational knowledge management capability perspective and the need for a comprehensive theoretical framework for future research. Extant literature often suggests a dialectical tension between competition and cooperation in collaborative knowledge management, yet a dynamic, intentional strategy perspective allows an in depth understanding of firms behaviours.

**Keywords:** interorganizational, appropriability regime, coopetition strategy

## INTRODUCTION

Knowledge management field of research attracts increasing attention in strategic management driving scholars to propose a Knowledge Based View of the firm (Grant, 2002) or to perceive learning as the missing explanatory variable of performance (Lavie, 2006). Most generally put knowledge brings an extension of both the resource based view of the firm and the competitive advantage theory. It also modifies extant explanations by focusing on change, thus introducing dynamics into strategic management explanatory models. The learning race concept very well exemplifies these extensions (Hammel, 1991).

Yet knowledge is dispersed, costly and imperfectly mobile. Typically managers can choose between organic development or the acquisition of resources they need. Given knowledge features and market imperfections arising from there, a third option – cooperative knowledge exploitation and exploration – is often seen as valuable (Baugh, Denekamp, et al. 2001). Firms increasingly seek knowledge transfer and creation jointly with others through vertical and horizontal networking (Möller, Svahn, 2006). Networks

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thus become the focus of innovation (Powell, Koput, Smith-Doerr, 1996), channels and conduits of the market (Podolny, 2001; Owen-Smith, Powell, 2004), providers of superior information processing capability (Hite, Hesterly, 2001), facilitators of knowledge creation (Dyer, Hatch, 2004). Along with the incentives for interorganizational knowledge management, many concerns relative to knowledge misappropriation (Katila, Rosenberger, Eisenhardt, 2008), free riding (Teece, 2000), or open competition for skills, i.e., the learning race (Hammel, 1991) arise. While the incentives for interorganizational knowledge management are mainly grounded in the cooperative paradigm, the disincentives rest in the competitive paradigm. The tension appearing between both paradigms leads to labeling interorganizational learning as "swimming with sharks" (Katila, Rosenberger, Eisenhardt, 2008). Other academics chose a dynamic view instead of a dialectical perspective, calling this situation a coevolution (Inkpen, Curall, 2004) or more accurately, coopetition (Branderburger, Nalebuff, 1996; Levy, Loebbecke, Powell, 2003).

Despite a noticeable number of papers, books and dissertations published in this interorganizational thread of inquiry into knowledge management our understanding remains fragmented and sparse as to reach the "brink of irrelevance" (Bell, Den Ouden, Ziggers, 2006). Research is claimed to be carried out from different theoretical stances, mainly resource based view, dynamic capabilities, transaction cost economics, network theory, which in turn makes empirical findings difficult to compare. These stances seem to convincingly explain some phases of the interorganizational learning such as formation rationale or post-formation opportunism deterrence, but remain very vague in the development phases and the whole life cycle of the interorganizational relationship. The academic gap twinned with managerial implications require a critical review of extant findings to provide theoretical advances needed in this thread of research (Larsson et al. 1998).

This paper is organized into three sections. The first focuses on knowledge as a resource and draws extensively on the resource based view of the firm. A critical review of prior findings reveals that interorganizational relationships formation is considered here as a way to access valuable knowledge. Yet rationale focus highly understates rent appropriation and the relationship life cycle. The second section views knowledge as a value creating capability. The theoretical underpinnings draw on the knowledge based view of the firm, the dynamic capabilities and on transaction cost economics. This reveals the intimate intertwining of value creation and appropriation. The third section consists of a theoretical

proposition addressing gaps arising from prior research, namely to view interorganizational knowledge management throughout its life cycle, both from the cooperative and competitive stances. The paper suggests that coopetition, i.e. a deliberate strategy of simultaneous cooperation in order to expand the total sum of the game, and competition to ensure a fair share in the value jointly generated responds to theoretical concerns raised in the two preceding sections.

## 1. KNOWLEDGE AS A RESOURCE – THE RATIONALE FOR INTERORGANIZATIONAL KNOWLEDGE TRANSFERS

Interorganizational cooperation whether in the form of single, dyadic cooperative arrangements, or sets of such arrangements called networks are rapidly increasing in number. On the resource based view of the firm grounds (Penrose, 1959; Pfeffer, Salancik, 1976; Wernerfelt, 1984) scholars argue that knowledge can be considered as a value creating resource. The resource-based view is founded on the assumption of firm heterogeneity with reference to the resources it possesses or has access to (Pfeffer and Salancik, 1978; Wernerfelt, 1984). Whenever the resources contribute to the value creation, are inimitable, rare and non-subsitutable they are claimed to provide a competitive advantage (Barney, 1991). Knowledge can lead to both monopolistic, because of isolation mechanisms available (Hurmelinna-Laukkanen, Puumalainen, 2007) and Schumpeterian rents because of fostered innovation (Capaldo, 2007).

In practical terms managers face the trilemma of developing, acquiring or allying in order to access resources they need (Child, Faulkner, 1998). The first option is predominantly seen as too slow, risky and prohibitively costly when knowledge is concerned (Baughn, Denekamp et al., 2001). Acquisitions often turn out to be too expensive or unavailable (Katila, Rosenberger, Eisenhardt, 2008). Empirical findings suggest that a firm's resource interdependence is significantly correlated with the propensity to ally and alliancing activity (Gulati, 1995). Many managers therefore are convinced that through cooperation they are able to attain ends that could not be attained alone at all, would be more costly, risky and considerably slower (Grunwald, Kieser, 2007). Other academics claim, on the network governance grounds, that the underlying logic for creating networks instead of one hierarchical structure is seen by academics in that the relative

independence of members has greater value and does not impede resource access across organizational borders (Dhanaraj, Parkhe, 2006).

Learning and knowledge transfer is the process through which one network member is affected by the experience of another (Inkpen, Tsang, 2005). Three types of knowledge related motives have been identified in the alliancing activities of firms: (1) relative to the rising complexity, costs and risk of research; (2) relative to a specific knowledge creation process, whereby a firm accesses another firm's knowledge including tacit, and the whole process is more efficient in terms of costs and time; (3) relative to opportunities, as networks can be a source of fine tuned information (Hagedoorn, 1993). The exchange of knowledge can be source of positive or negative effects. Firstly, synergies may arise because of additional value created with partners than the sum of individual efforts (Levy, Loebbecke, Powell, 2003). Synergies require knowledge exchange, where both knowledge complementarity and redundancy are valuable. The complementarity of knowledge creates opportunities to develop and exploit complex technologies, while redundancy is claimed to foster knowledge exploration (Rindfleisch, Moorman, 2001). Secondly, interorganizational knowledge management can provide a leverage, which accrues to the partner receiving knowledge and helps him to exploit this new knowledge beyond the cooperative arrangements in his other activities (Levy, Loebbecke, Powell, 2003). Networks are even perceived as a loci of innovation because of its unique features: timely access to knowledge and resources that would otherwise be unavailable (Uzzi, 1996), while also improving the firm's routines (Zollo, Winter, 2002) and learning capabilities (Powell, 1998). Various forms of cooperative arrangements such as outsourcing/subcontracting, research and development teaming or consortia (Pisano, 1990, Sakakibara, 1997) and joint ventures are frequently used by managers to efficiently exchange, synergistically develop knowledge, thus achieving a competitive advantage (Fitzpatrick, DiLullo, 2005).

To sum up, cooperation is beneficial as it provides access to the knowledge resources and knowledge creation capabilities necessary for value creation. It improves the efficiency of the value-creation processes and brings additional benefits to partners, which would not be available to any of them alone. Yet it is not commonplace to achieve all these theoretical benefits in practice. This implies that the managerial relevance of findings grounded in the RBV is limited. A number of gaps arise from this vein of inquiry. Firstly, resource access is not equivalent to value creation, which in turn is not equivalent to rent appropriation. Secondly, the RBV remains a

static approach, ignoring the path dependence or interorganizational relationships life cycle. The formation, evolution and termination phases bring up distinctive challenges. What is more, interpartner learning impacts on the relationship itself. Researchers perceive organizational learning among the cooperating firms as the key to better understand both success, failure (Larsson, Bengtsson et al. 1998) or the evolution process itself (Doz, 1996).

## 2. KNOWLEDGE AS A CAPABILITY – THE APPROPRIABILITY REGIME

The positive interorganizational knowledge management effects, motives for cooperative relationship formations are very often missed (Madhok, Tallman, 1998) with a failure rate of around 50%. In fact the negative effects of interorganizational knowledge management may arise due to the risk that exchanged knowledge may be used by competitors and thus harm the sources of firms monopolistic or Schumpeterian rents or even worse, that knowledge might be misappropriated by opportunistic partners (Katila, Rosenberger, Eisenhardt, 2008).

Recent empirical research draws on the knowledge based view of the firm (Grant, 2002), according to which interorganizational knowledge management is a purposeful strategy leveraging network resources to achieve superior performance of knowledge exploitation or innovation (Capaldo, 2007). This requires at least passive membership (Powell, 1998) or at best active orchestrators' responsibility for knowledge management, rent distribution and network stability (Dhanaraj, Parkhe, 2006). The knowledge based view brings about one particularly useful concept to explaining success in interorganizational knowledge management, i.e. the relational capabilities.

Prior research provides empirical findings relative to undesirable and harmful behaviors of partners in cooperative relationships. For instance, opportunistic interpartner learning behaviours have been identified as a way to copy critical partner skills (Hammel, Doz, Prahalad, 1989). Opportunistic firms intentionally seek cooperation, but the real goal of establishing a close relationship is to get the skills and knowledge owned by another company. Surprisingly, a "good partner" strategy, consisting of high transparency to partners and clear a priori collaborative intent are frequently exploited by more selfish partners in the learning race (Hammel, 1991). Consequently, a

set of distinctive capabilities required for successful cooperation can be identified (Lorenzoni, Lipparini, 1999). This suggests the need to perform a careful selection of candidates for partnership or due diligence procedures. On the other hand, prior findings imply the need to identify critical knowledge and protect it from unauthorized access or use (Baughn, Denekamp et al. 2001).

Secondly, learning in networks from the social network perspective provide valuable access to information and knowledge, but on the other hand this access is not fully controlled. Spillovers are the *alter ego* of intentional knowledge transfers and creation (Owen-Smith, Powell, 1996). Empirical research indicates that these spillovers might be of interest in a variable environment because of the flexibility they offer. Yet spillovers do mean "leaks" in the knowledge market plumbing, which should be interpreted as a loss of control over critical assets and a threat to above-average earnings. Consequently, managers should understand that spillovers are a natural consequence of interorganizational knowledge management and respond to the threats arising from there. Two possible responses have been identified in the literature: protection maximization and value creation maximization. The first one is grounded in the transaction cost economics perspective of opportunism deterrence. This implies costly contractual and social mechanism, as well as legal restrictions to intellectual property unauthorized use (Fitzpatrick, DiLullo, 2005). The second response focuses more on maximizing value created by available knowledge, achieving lead-time advantages (Hurmelinna-Laukkanen, Puumalainen, 2007).

Thirdly, the interorganizational context of knowledge management indicates that joint exploration aiming at new knowledge by the sponsor (Katila, Rosenberger, Eisenhardt, 2008), hub firm (Möller, Svahn, 2006) or orchestrator (Dhanaraj, Parkhe, 2006) of the cooperative relationship requires organized activities and establishing of knowledge creation routines (Sydow, Windeler, 2004). However firms are claimed to gain new capabilities by accident rather than by planning (McEvily, Marcus, 2005), there is the need to efficiently perform joint knowledge exploration. This implies another capability claimed necessary to carry out interorganizational knowledge processes.

Thus learning races require at least two kinds of capabilities from the organization: learning from collaboration (Inkpen, Curall, 2004) and learning how to collaborate (Annand, Khanna, 2000). Both require distinctive skills to facilitate the transfer of knowledge and its deployment in operating routines (Capaldo, 2007). When knowledge alters either the

resource base of the firm or the way of performing its daily operations such a process is labeled as dynamic capability (Zollo, Winter, 2002). A capability is made of resources and the knowledge how to efficiently exploit them (Möller, Svahn, 2003). If this capability resides at the interface with other organizations or focuses on interorganizational knowledge management issues, it is called relational capability. Originally three core resources processes were defined (Teece, Pisano, Shuen, 1997), without specifying their interrelationships: building, integration and reconfiguration of the firm's resource base. This view has been further developed by amending the "build" process with "gain" and "release" resources (figure 1). The relational capabilities concept does not address a single skill but rather a number of different capabilities (Capaldo, 2007) developed by the organization in order to efficiently carry out all four resource processes.

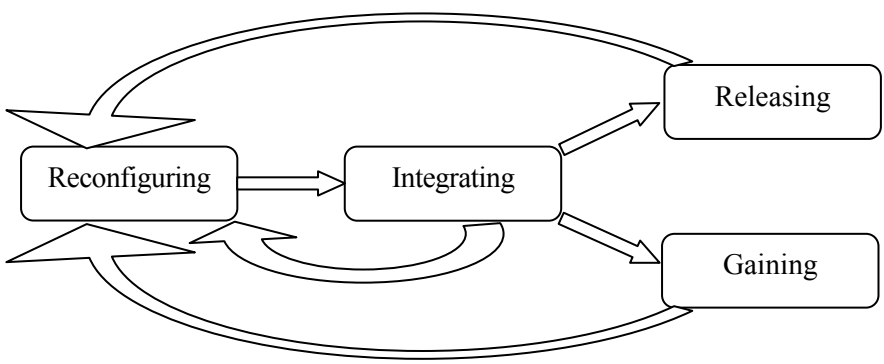


Figure 1: Relational capabilities as a stream of processes altering a firm's resource base.

Source: development of (Teece, Pisano, Shuen, 1997)

Beyond the capability to carry out interorganizational learning and knowledge exploitation, the issue of appropriating, misappropriating and protecting the revenue arising from knowledge attracts considerable attention.

A crucial role in protecting critical knowledge and the rents potentially arising from it is seen in isolation mechanisms. Their common feature is the strive to create market imperfections in resource mobility. In order to preserve knowledge, firms need to limit access to it through intellectual property rights, contractual limits to transparency of cooperation most often taking the form of non-disclosure agreements (Baughn, Denekamp, 2001) or lead time (Hurmelinna-Laukkanen, Puumalainen, 2007). Intentional

structuring of interorganizational relationships is seen as a way of limiting unintended transfer of knowledge. Prior research suggest also that the active and deliberate shaping of knowledge management in interorganizational context in order to protect knowledge from being disclosed to potential competitors and safeguard this knowledge from being used in subsequent competitive endeavors by partners (Fitzpatrick, DiLullo, 2005). This aim is claimed to be attainable through intentionally planned and implemented partner selection, negotiations, relationship governance and termination procedures.

Another thread of inquiry does not focus on control, which can at best delay competitors access to this knowledge, but suggests that managers should rather focus on the capability to utilize both internal and external sources of ideas and paths to market (Hurmelinna-Laukkanen, Puumalainen, 2007). This shifts attention from costly protection mechanism to the ways of creating and retaining value from knowledge assets. That managerial shift of attention parallels the preference for knowledge based view of the firm over the transaction cost economics.

## 3. COOPETITION STRATEGIES FOR INTERORGANIZATIONAL KNOWLEDGE MANAGEMENT

Prior research addresses in separate threads and on different theoretical grounds both the cooperative and competitive perspectives. The cooperative view suggests that synergies and leverages can be created and the option to joint knowledge creation or exploitation should prevail whenever the individual proceeding is costly or lengthy. Previous research suggests that this is usually the case and the firm's having noticed that have shifted the locus of innovation from the organizational to the interorganizational areas (Owen-Smith, Powell, 1996). The competitive view suggests that appropriation concerns are major both in terms of misappropriation by partners and spillovers to other competitors. Extant literature views the cooperation-competition as a dilemma (Larsson, Baughn et al. 1998) or tension (Das, Teng, 2000). Cooperation or competition are usually seen as ideal type concepts, where the existence of one relationship between firms excludes the other. Studies tackling cooperative relationships frequently label as opportunistic the emergence of competition between partners during or after the time scope of their relationship (Jap, 2001). Adversely, studies focused on competitive relationships usually consider cooperation as being

collusive and harmful to the market (Hemphill, 2003). The dialectical perspective refers to such concepts as balance, imbalances (Zeitz, 1980) and change. Dialectics have been used in very few papers, which suggest at worst a dead end.

Alternatively, researchers propose to see interorganizational knowledge as a series of deliberate decisions creating a strategic path (Levy, Loebbecke, Powell, 2003). Special attention is being paid to the planning of the appropriability regime, understood as a combination of knowledge protection mechanism such as: intellectual property rights, tacit knowledge, lead-time, contracts (Hurmelinna-Laukkanen, Puumalainen, 2007). Scholars claim that intentional design of this regime facilitates not only protection, but also the sharing and exploitation of knowledge. Other researchers draw attention to the need to assess whether the interorganizational relationship meets the initial expectations (Doz, 1996), and to reshape it if the assessment provides unsatisfactory effects. Also, governance issues have been studied and bring a strong managerial implication to carefully design and reshape the cooperation governance structure and processes over time (Baugh, Denekamp et al. 2001; Heide, 2003). Thus, prior research provides foundations for a deliberate strategy of interorganizational learning strategy, satisfying both to value maximization criteria and value protection needs. However, the fragments of theory remain fragmented which call for an integrative effort and testing.

Nevertheless, these fragmented views clearly lead to a new type of theoretical explanations, which can resign dialectical stances in favour of a dynamic approach. Namely the coopetition strategy, grounded in the game-theory provides such a theoretical framework. Coopetition is a deliberate strategy of mixing cooperation and competition at different stages and arenas in order to achieve better individual and collective results (Brandenburger, Nalebuff, 1996). The underlying logic of coopetition is to move from a zero sum competitive game where the success of one means the failure of others, to a cooperative, repetitive non-zero sum game where collective action increases the sum of the game, followed by competitive moves to ensure a share in this “expanded pie”. Prior research provided empirical findings that “pie sharing”, which is the competitive phase of interorganizational relationships, needs equity to be viable in the long term (Jap, 2000). This means that all parties need to have a share they consider fair in terms of both initial agreements and subsequent commitment of resources and efforts.

## CONCLUSIONS

A large number of empirical studies focusing on interorganizational knowledge management have been published but the result of this long theoretical and empirical effort remains disappointing. Too focused theoretical advances academics oppose the lack of a coherent and complex explanation of the interorganizational knowledge management. Despite the room for comparing empirical findings being limited by many different underlying theoretical approaches, a number of insightful findings are available. Specifically, many building blocks of relational capability relative to learning and knowledge management have been identified. Also, the apparently dialectical tension between cooperative and competitive behaviours of partners can be explained under the coopetition theory. A dynamic approach, path dependent, mixing game theory with the resource based view and competitive advantage explanations seems very promising.

The contribution of this study is threefold: literature critical review, relational capability building blocks identification and coopetition theoretical foundation proposition. This brings up a research agenda in the interorganizational knowledge management thread of research.

The limitations are definitely linked to the scope of literature research performed here. The author is aware of extant publications, which could not be all discussed due to space limitations. This leads to the need to choose relevant publications even if any selection implies distortions. Nevertheless, many questions remain unanswered: is coopetitive learning a deliberate strategy? How is coopetitive interpartner learning implemented by firms? What meaning do managers attribute to the non-zero sum game theoretical concept in interorganizational knowledge management? Coopetitive knowledge management seems to be a promising theoretical framework, even if it still needs testing and development.

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