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Is Cooperation the Only way to Enhance Knowledge Transfer within Multinational Corporations?

A study of intrafirm competition from knowledge transfer perspective

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Abstract

Knowledge regarded as resource of strategic importance for Multinational Corporations gained a lot of attention in recent years. A number of inhibitors of successful *knowledge transfer* have been identified. However as there has been much focus on the role of *cooperation*, the coexisting competition within the corporate network as well as its influence on knowledge transfer has been neglected. The aim of this study is to investigate the role of *intrafirm competition* in overcoming the knowledge transfer barriers.

Key words: Knowledge transfer, cooperation, competition, coopetition

Introduction

The significant importance of knowledge in building up sustainable competitive advantage of Multinational Corporation (MNC) has found its reflection in a number of scientific publications. Those publications analyse how a company can successfully generate new knowledge and transfer it between geographically spread divisions. Although the importance of cooperation for knowledge transfer has been well elaborated, the influence of coexisting intrafirm competition on knowledge sharing has not attracted equal attention.

The resource-based theory states a company's market position derives from its unique resources, capabilities and competences which allow interpreting information on the product market better than the competition (Wernerfelt, 1984). However, resources which are coming from outside the company are available to other firms and cannot be regarded as a source of competitive advantage (Spender, 1996). On the contrary, knowledge is an intangible asset hard to copy or imitate by outsiders, and might be seen as the resource of primary strategic importance (Grant, 1996). Due to its uniqueness, knowledge is deemed as the most vital resource and makes it possible to utilize others capabilities efficiently (Alfirević & Račić, 2004). In the case of MNCs, knowledge and other distinctive competences are distributed along the entire organization. Similarly to viewing a firm as a mechanism for coordinating individual knowledge (Grant, 1991), the primary role for the MNC can be seen as integrating knowledge of its subsidiaries. Moreover, one reason for an MNC to exist is its potential and capacity for combining unique organization-specific resources with geographically located knowledge and for being able to internalize geographic transfers (Arvidsson, 1999). The sustainable competitive advantage of the modern MNC can be deemed as the ability of its subsidiaries to generate new knowledge as well as the MNC's efficiency in transferring and integrating this knowledge within the entire organization (Szulanski, 1996).

The process of knowledge creation has been evaluated as fragile and costly in execution (Grant, 1996). A number of inhibitors of knowledge transfer have been identified and can be divided into ones related to knowledge itself and ones related to the capabilities of an organization to create and share this knowledge (Grant, 1996; Szulanski, 1996; Kostova, 1999; Gupta & Govindarajan, 2000; Persson, 2006). Research focusing on solving problems of knowledge transfer highlights the importance of establishing cooperation between the sharing parties (Gupta & Govindarajan, 1991; Nohria & Ghoshal, 1994; Grant, 1996; Szulanski, 1996). A great number of publications have delivered suggestions for managerial practices which can lead to smoother collaboration and knowledge flows in MNCs (Malnight, 2001; Minbaeva, et al., 2003; Yamin & Otto, 2004; Phene & Almeida, 2008).

There has been however a recent trend in the literature suggesting that focus on cooperation cannot solve all problems related to knowledge management. The problem of lack of absorptive and retentive capacity in receiving units has been pointed as the most significant for knowledge sharing (Cohen & Levinthal, 1990; Szulanski, 1996; Persson, 2006). Although cooperation between sharing units can increase the ability of the receiving unit to acquire and retain knowledge (Frost & Zhou, 2005), it does not influence the unit's motivation to engage

in knowledge sharing collaborations. The research of Gupta and Govindarajan (2000) was unable to prove that the motivation of the sender or receiver can be enhanced by an incentive system that promotes cooperation. What is even more surprising is that some research indicates that long term relationships between knowledge sharing units can even magnify the problem of lacking motivation for seeking collaboration partners. It has been suggested that there is a strong tendency for knowledge sharing partners to remain in the established relation despite its low product market relevance and contribution to strengthening MNC's competitive advantage (Eisnenhard & Galunic, 2000). The danger arising from too many 'fixed relationships' is that a company will lose its flexibility in adapting to fast changing market demands (Nadler & Tushman, 1999; Eisnenhard & Galunic, 2000). New and substantial knowledge can only be created when substantial differences exist in the knowledge domains of sharing parties (Grant, 1996). This in turn implies that in order to avoid saturation of a partner's knowledge domain, the subsidiaries should constantly screen internal corporate markets in search of potential collaborative partners. Weak ties between knowledge sharing partners might have a more positive effect on knowledge synthesis than well established collaborations (Hansen, 1999). According to Levin and Cross (2004) *'Knowledge received from strong ties still positively contributed to project outcomes, but knowledge received from weak ties contributed even more positively.'* Therefore in order to successfully synthesise new knowledge, the web of collaborations should be frequently revised and new partnerships, that are most relevant from the product market perspective, should be established (Eisnenhard & Galunic, 2000). Tools designed for improving cooperation seem unable to solve the problem of lack of motivation that is critical for the searching phase of knowledge transfer (Hansen, et al., 2005).

A possible source of motivation for subsidiaries to constantly screen internal markets and search for new partners might be the widely criticised intrafirm competition and promotion of self-interest (Eisnenhard & Galunic, 2000). The intrafirm competition for resources and mandates destabilises the internal equilibrium of the corporate network (Bouquet & Birkinshaw, 2008). This in turn creates market-driven motivation for subsidiaries to constantly search for new knowledge-sharing collaborations. In a broader understanding the intrafirm competition takes place when subsidiaries have the same source of resources, and perform similar tasks. The competition can also be understood as a part of ongoing power struggles within the MNC network. According to Andersson, et al. (2002) the more the whole network depends on a subsidiary the more the subsidiary is independent from the network. This means it has more corporate power and a greater ability to influence the strategic behavior of the entire MNC. The subsidiary's power is reflected by its centrality within the corporate network (Ghoshal & Bartlett, 1990). This in turn, is related to the ability to generate knowledge that is unique and relevant for the entire organization; and to successfully transfer it to other units (Bartlett & Ghoshal, 1986; Nohria & Ghoshal, 1994; Birkinshaw, 1997; Andersson & Lagerström, 2003; Rugman & Verbeke, 2001; Andersson, et al., 2002). Influencing an MNC's strategy and aligning it with individual goals of a subsidiary is the major reason for competition within an MNC (Andersson & Pahlberg, 1997). Cooperation and competition, two exclusive processes, coexist within the MNC internal network. This paradox of coopetition captures *'simultaneously cooperative and competitive behavior among*

organizational units' (Tsai, 2002). The literature delivers contradictory evidence of the influence of competition on MNC performance and the knowledge transfer (Szulanski, 1996; Lado, et al., 1997; Osarenkhoe, 2010).

As there is not much known regarding the impact of intrafirm competition on knowledge transfer. The aim of this paper is to understand how it can either accelerate or inhibit the process of knowledge sharing. A better understanding of the role of intrafirm competition in knowledge transfer can lead to either strengthening or challenging the strategy of pure cooperation. The research addresses the question **whether competition can complement cooperation in overcoming knowledge transfer inhibitors in Multinational Corporation**. In order to answer this question the character of knowledge transfer and its impediments is investigated first. Next, the appearance of cooperation and competition and their role in defeating these obstacles are being investigated. Finally the problem of how cooperation and competition can coexist is elaborated. The subjects of the study are three Multinational Corporations operating in knowledge intense industries. Although the management level of a company has been indicated as the most influential for intrafirm cooperation, the process of knowledge transfer takes place on the project work level. Therefore primary source of data are researchers employed in Research and Development structures who are involved in intrafirm projects. The analysis of the presented problem will lead to better perception of how cooperation and competition could complement each other and enhance the efficiency of knowledge transfer. The paper is organized into four sections. First the overview of relevant literature is presented. Then the description of research methodology is followed by the empirical data reporting and finally the analysis of the results and conclusions are presented.

Theoretical Framework

The following section provides a description of knowledge transfer and its inhibitors. Special attention is given to the motivational aspects. Next, the circumstances under which intrafirm cooperation and competition appear as well as their influence on knowledge transfer are being analyzed. Finally, by introducing a concept of coopetition, the paradox of these exclusive strategies coexistence is being discussed.

Knowledge Transfer Conceptualization

Szulanski (1996, 2003) defines knowledge transfer as a process of dyadic exchanges of knowledge between the sender and the receiver, where the effectiveness of transfer depends to some extent on the disposition and ability of the source and recipient, on the strength of the tie between them, and on the characteristics of the object that is being created. Mudambi and Navarra (2004) emphasize the relative bargaining power of the knowledge owner compared to the partner by defining knowledge transfer as '*the current sources of value creation and future sources of potential value creation*'. Also focusing on internal knowledge transfer, Argote, et al. (2000) defines knowledge transfer as '*a process whereby one unit is affected by the experience of another*' which comes down to the absorption of specific skills, knowledge and competencies by the recipient (Muthusamy & White, 2005). In this research, in line with Tsai (2001), the attention is on knowledge transfer within the boundaries of a shared social context, which is operationalized as a network of units within a firm thereby stressing the importance of context in an intra-organizational setting.

Knowledge transfer among organizational units provides opportunities for mutual learning and interunit cooperation that stimulate the creation of new knowledge and, at the same time, contribute to organizational units' ability to innovate (Kogut & Zander, 1992; Tsai & Ghoshal, 1998). The knowledge transfer among organizational units possesses different types. One generic type of knowledge transfer concerns knowledge '*synthesis*' (Galunic & Rodan, 1998) with the primary purpose of utilizing existing spectrum of competences in the firm to create new knowledge. Instead of the knowledge elements being transferred, the outcome of their combination is of great significance for the organization (Persson, 2006). And this type of knowledge transfer occurs in the development of new products, production processes, and in innovative processes more generally (Subramaniam & Venkatarman, 2001; Tsai, 2001). Another generic type of knowledge transfer is when new and valuable knowledge has been developed somewhere in the organisation that has the potential to enhance the operations elsewhere in the organisation (Persson, 2006). In this case the aim of transfer is not to generate new knowledge but to economise on what is already known in organization. Meanwhile, this kind of knowledge transfer is referred as closing the gap between what is known and what is done in the organisation (Pfeffer & Sutton, 2000), as a situation of 'additive complementarity' between knowledge elements (Buckley & Carter, 1999) or as a process of interunit '*equalisation*' (Forsgren, et al., 2005). Nevertheless, in real life knowledge transfer often contains elements of both types.

Knowledge Transfer Impediments

There has been a significant number of studies regarding knowledge sharing inhibitors (e.g., Szulanski, 1996; Gupta & Govindarajan, 2000; Persson, 2006). Among all of them, Szulanski (1996) contributes a lot to classify various knowledge transfer determinants into four groups. As a comprehensive classification, the primary variables addressed in his study are characteristics of transferred knowledge (causal ambiguity and unprovenness), characteristics of knowledge recipients (lack of motivation, lack of absorptive capacity and lack of retentive capacity), characteristics of the source of knowledge (lack of motivation and perception as unreliable), and characteristics of the context (barren organizational context and arduous relationships). The main finding of his research suggests that recipient's lack of absorptive capacity, causal ambiguity, and the arduousness of the relationship between source and recipient are most important obstacles to knowledge transfer within the firm. While Szulanski (1996) come up with knowledge transfer theory for general firm, Zhou and Frost (2003) put their focus on MNCs and argue that the barriers to the integration of knowledge across units include geographic and cultural distance, which act as barriers to communication and understanding, as well as the heterogeneous strategies, incentives and technical capabilities of organizational subunits. Nevertheless, recent developments in the innovation literature point to the importance of absorptive capacity (*the organization's ability* to *recognize the value of new, external information, assimilate it, and apply it to commercial ends)* (Cohen & Levinthal, 1990), and social capital (*the state of social relations that exists between organizational members)*, as impediments of knowledge exchange among and between organizations (Frost & Zhou, 2005).

Importance of Motivation for Knowledge Transfer

Among known inhibitors of knowledge transfer, lack of motivation either of the sender or of the receiver has been identified as one of the most significant (Grant, 1996; Szulanski, 1996; Persson, 2006). Even though the organization may consist of individuals with significant learning abilities, the organization's ability to utilize the absorbed knowledge will be low if employee's motivation for learning is low or absent (Baldwin et al. 1991). On the corporate level not only depth but also number of collaborative ties is significant for effective knowledge transfer (Levin & Cross, 2004). In order to ensure effective knowledge synthesis units should feel constantly encouraged to engage in valuable intrafirm relations (Eisnenhard & Galunic, 2000). The motivation seems to be crucial in the initial stage of the transfer when decision about seeking knowledge among subsidiaries is being made (Hansen, et al., 2005). Indirectly by influencing the number and quality of knowledge transfer bonds, motivation might also lead to an increase in unit's absorptive and retentive capacity (Cohen & Levinthal, 1990).

The Essence of Intrafirm Cooperation

Thompson (1967) explains that the need for sharing knowledge and information between various units in an organization is a function of the interdependency that can be achieved with specific types of coordination. According to Grant (1996), the primary role of the firm is integrating the specialist knowledge resident in individuals while the primary task of management is establishing the coordination necessary for this knowledge integration. For

multiunit organization, it is necessary to design a set of higher-ordered principles to coordinate diverse units and develop the capacity to replicate knowledge within organization (Zander & Kogut 1995; Grant, 1996; Madhok, 1996). As a vital organizational capability, the extent to which knowledge among different parts of an organization can be harnessed, shared, and integrated is an important source of the competitive advantage for organization (Grant, 1996; Kogut & Zander 1996; Spender & Grant, 1996).

It is noted that a MNC is internally differentiated in its structure and coordination processes because of differences in the task environments of subunits (Ghoshal &Nohria, 1989; Gupta & Govindarajan, 1991). Given that diverse knowledge is embedded in different units, the way the firm coordinates different units significantly affects the pattern of intra organizational knowledge sharing (Tsai, 2002). Coordinating different units to share their knowledge is critical to enhance an organization's capabilities (Kogut &Zander, 1996). The very strong influence of the networking variables on promoting both subsidiary-headquarters and intersubsidiary communication in MNCs, coupled with the manifest importance of such communication as a key source of the MNC's ability to develop, share, and leverage knowledge (Ghoshal & Bartlett, 1988), reinforce the prescription that managers in these companies may be well advised to make these investments in interunit networking.

Intrafirm Cooperation from Knowledge Sharing Perspective

Many contributions to the MNC literature recognize the process of knowledge transfer is likely to be supported by various organizational means of control and motivation (Gupta & Govindarajan, 1994; Buckley & Carter, 1999). The notion of knowledge flows take place in the context of social communities or a network of embedded relationships that exist between organizational members is strongly supported (Schrader, 1991; Tsai & Ghoshal, 1998; Hansen, 1999; Tsai, 2000). Björkman et al. (2002) find that evaluation criteria for subsidiary performance and corporate socialization mechanism turn out to be significant drivers of subsidiary knowledge outflow. In the research of Dhanaraj et al. (2004), relational embeddedness which captures the social aspects of relationships and consists of tie strengths, trust and shared systems has a strong impact on the transfer of knowledge, particularly on tacit knowledge transfer. Besides, Frost and Zhou (2005) adopt the term R&D co-practice to capture collaborative technical activities carried out jointly by R&D personnel from two or more organizational subunits. From their point of view, the R&D co-practice increases absorptive capacity by creating a shared understanding of other units' technical capabilities and "who knows what". Technical collaboration leads to learning among partners and thus a tendency toward convergence in the partners' knowledge bases and technical capabilities (Mowery et al., 1996). On individual level, through conducting project together, people inevitably engage in different forms of interaction that promote trust and mutual obligation (Uzzi, 1997; Tsai & Ghoshal, 1998). For Frost and Zhou (2005), '*it is impossible to imagine the exchange of knowledge not taking place during formal collaborative efforts and R&D co-practice creates a foundation for future knowledge integration independent of any ongoing joint technical activities.'*

Many authors emphasize the importance of lateral networking mechanisms to facilitate information exchange within MNCs. However, as argued by Foss and Pedersen (2004), it is

unclear how knowledge processes may be influenced by various mechanisms of organizational control, such as authority, the use of incentives, monitoring and the building of shared context because there is rather little understanding of how these controls influence individual behaviour with respect to accumulating, building, sharing and integrating knowledge. How incentive mechanisms can be used to foster interunits' knowledge transfer? To what extent can organizational mechanisms that have been implemented to promote cooperation among subunits foster knowledge sharing?

Furthermore, the costs incurred in supporting such mechanisms may be too high, while the benefits are too uncertain (Egelhoff 1990, p.16). For instance, if all actors in the organization share the same specialized language, they will be effective in communicating with one another, but they may not be able to tap into diverse external knowledge sources (Cohen & Levinthal, 1990). As a result, the internal language or any particular body of expertise could become sufficiently overlapping and specialized that it impedes the incorporation of outside knowledge and results in the pathology of the not-invented-here (NIH) syndrome (ibid). This consideration is in line with Katz and Allen's (1982) findings that the level of external communication declines with project-group tenure.

Defining Intrafirm Competition

The intrafirm competition within the MNC's corporate network has not yet been fully described phenomenon (Galunic & Eisenhardt, 1996; Birkinshaw, 2001; Kalnins, 2004; Birkinshaw & Lingblad, 2005; Bouquet & Birkinshaw, 2008; Becker-Ritterspach & Dörrenbächer, 2009; Gammelgaard, 2009; Osarenkhoe, 2010). The concept refers to hostile activities among peer units (Birkinshaw, 2001), which might appear in horizontal and vertical relationships (Bengtsson & Kock, 2000). There are two distinctive forms of horizontal competition. The first one appears among the product lines. The choice which line to support is made based on size of customer demand. The second type of intrafirm competition is between technologies and innovative ideas among R&D units; and is handled inside the company (Birkinshaw, 2001). The latest and most broad definition of intrafirm competition is *'a dynamic situation that occurs when several actors in a specific area (market) struggle for scarce resources, and / or produce and market very similar products or services that satisfies the same customer need.'* (Osarenkhoe, 2010)

The intrafirm competition represents benefits of technological flexibility as well as waste and slack reduction (Vickens, 1995; Eisnenhard & Galunic, 2000). Main disadvantages are costs of redundant activities and the risk of developing burdensome and uncooperative corporate culture (Birkinshaw, 2001; Birkinshaw & Lingblad, 2005).

The Source of Competition

The ongoing evolution of units' charters and overlap between them are suggested as the direct explanation for the intrafirm competition (Galunic & Eisenhardt, 1996; Birkinshaw & Lingblad, 2005). A charter reflects the role and the position of a subsidiary (Galunic & Eisenhardt, 1996). It is defined by three interlinked dimensions. The first one is *product markets served* understood as units' customers. Secondly, *capabilities* are describing unit's potential to utilize resources, for instance technological or market knowledge. The final

element, *intended charter*, is an officially assigned and communicated responsibility of the unit. The intended and actual charter might not superimpose (Birkinshaw & Lingblad, 2005). The intrafirm competition appears if units' charters overlap in any of discussed dimensions (ibid).

Charters might overlap because of the divergence between top-down decision making and bottom-up initiative taking by subsidiaries (Becker-Ritterspach & Dörrenbächer, 2009; Gammelgaard, 2009).The intrafirm competition can be seen as part of firm's constant development and adjustment to changing market demands (Galunic & Eisenhardt, 1996). In order to increase portfolio of business opportunities, besides cascaded strategic goals, subsidiaries are given certain amount of operational freedom. If units analyze and perceive market in a similar way they might engage in the same type of activities and create overlap (Birkinshaw & Lingblad, 2005).

The intrafirm competition is a very political process, and by that commonly takes the form of lobbying, negotiating, and entrepreneurship initiatives (Birkinshaw & Lingblad, 2005; Bouquet & Birkinshaw, 2008). Subsidiaries engage in these activities due to ongoing power struggles within the MNC (Becker-Ritterspach & Dörrenbächer, 2009). Units tend to compete on the internal market for access to the parent's resources (Birkinshaw, 1997; Luo, 2005), thanks to which they can obtain a central position within firm's network (Ghoshal & Bartlett, 1990). This position allows them to influence and align overall corporate strategy to their own purposes (Andersson, et al., 2007; Gammelgaard, 2009). On the subsidiary level workers, management and unions are identified as the strongest initiative takers accelerating intrafirm competition (Becker-Ritterspach & Dörrenbächer, 2009).

Company's management might differ in its approach towards the intrafirm rivalry. Commonly competition is regarded as a negative phenomenon. Therefore one of the managerial practices is to mitigate it by creating an internal immune system which blocks subsidiaries' initiatives on corporate level (Birkinshaw, 2001). Another type of strategy is ambivalence, when management takes no actions, neither to boost nor to weaken the competition (Eisnenhard & Galunic, 2000). The management can also engage in strengthening the competition between peer units by blurring charters' definitions and accepting a high level of overlap (Birkinshaw & Lingblad, 2005).

Depending on what type of strategy the company has towards competition, the relation between organizational units will be shaped differently. According to Birkinshaw and Lingblad (2005) it is possible to distinguish between: *tight federation* where charter definition is sharp and the overlap is low; *loose federation* where charters don't overlap despite not being clearly fixed; *coexistence* with high overlap and set charter's boundaries, and *dynamic community* where charter definition is vague and overlap is high. By neglecting the existence of intrafirm competition, the company loses chances of making conscious decisions regarding which strategy to perform.

Intrafirm Competition from the Knowledge Sharing Perspective

Some research indicates intrafirm competition has direct influence on knowledge sharing. The literature however is not very consistent on whether rivalry enhances or hinders the process. Szulanski (1996) identifies barren relationship between sharing units as one of the main inhibitions of knowledge sharing. What is more, the intrafirm competition can increase search and transfer costs (Hansen, et al., 2005). The negative influence will differ in its magnitude depending on who perceives the competition and on which corporate level. It is more harmful when the sharing subsidiary perceives the receiver as direct competition, especially if cooperating individuals regard each other as rivals (ibid). Also Persson (2006) highlights a decrease in willingness to share knowledge when units are occupying similar positions in a MNC's value chain. On the other hand, Bengsston and Kock (2000) argue for a positive role of competition as a stimulus to upgrade units' competitive advantage by acquiring new knowledge. Similarly Eisnenhard and Galunic (2000) underline the importance of competition and promotion of self-interest for establishing new, valuable and market relevant collaborations within MNC. According to Tsai (2002) *'Competition motivates units to interact with each other to pursue common interests and benefit from the synergy of interunit knowledge sharing.'* Additionally Gnyawali et al. (2009) identifies *Entrepreneurial Orientation* and *Strategic Vulnerability* as two driving forces for a subsidiary's motivation to share and create knowledge. *Entrepreneurial Orientation* refers to a subsidiary's proactive attitude towards strengthening its competitive position by taking initiative and bidding on the corporate's internal market. *Strategic Vulnerability* discusses the influences of internal threat, when subunits are evaluated based on a benchmarking index and when they underperform. Both of these driving forces are strongly related to the existence of internal competition.

As discussed above scientific literature delivers contradicting information regarding the influence of competition on knowledge transfer. The reason for that might be focus on different stages and aspects of the process. However, what seems to be possible is the distinctive preposition that intrafirm competition might have a positive impact on knowledge transfer by influencing the receiving subsidiary's motivation to acquire knowledge. At the same time it is beyond authors' capabilities to determinate whether the positive impact on motivation counterbalances the negative influence on remaining inhibitors of knowledge transfer.

Coopetition - The Paradox of Coexistence

It has been commonly argued that the cooperation and competition are mutually exclusive. Recent studies however gave attention to a paradox of their simultaneous presence within an MNC internal network (Bengtsson & Kock, 2000; Tsai, 2002; Osarenkhoe, 2010). This advantageous mix of competitive and cooperative behaviours has been given a name of coopetition. According to Bengsston (2000) '*coopetition is a mix of hostile relation between competing actors and cooperation driven by common interests.'* Although a number of definitions have been developed by other authors (Lado, et al., 1997; Gnyawali, et al., 2006; Chin, et al., 2008), there is hardly any distinguishing difference between them. The description offered by Bengsston (2000) seems to be most broad in nature and is accurate for coopetition in both internal and external environment of an MNC. Apart from that, this

definition touches upon the explanation why simultaneous cooperation and competition are possible.

The Foundations of Coopetition

Two contradicting assumptions regarding human nature can be found at the basis of coopetition. According to Bengsston (2000), the assumption behind competition is that people have conflicting interests and collaboration is not part of human nature. At the same time the idea of cooperation is based on conflicting theory that people tend to cooperate in order to reach common goals (ibid). The coexistence of both, and the ongoing struggle between them, is the primary reason why coopetition can be observed within a MNC's internal network. In the coopetitive relationship, actors tend to compete in areas close to customers and cooperate in those of lesser proximity (Osarenkhoe, 2010).

The principle of coopetition is synergy strengthening both competitors (Zineldin, 2004) therefore it is regarded as win-win type of strategy. Lado (1997) argues that among all rent seeking behaviours, the coexistence of high level of competition and cooperation is the most advantageous for the company. On one hand the company can benefit from internal cooperation which allows more efficiency in resources allocation and helps to avoid organizational slack (Bengtsson & Kock, 2000). On the other hand, cooperation counterbalances the negative effects of competition and enables trustful channels of communication (Chin, et al., 2008). Therefore coopetition strengthens motivation for knowledge searching and sharing (Lado, et al., 1997; Zineldin, 2004; Tsai, 2002). This in turn leads to increase in organization learning capabilities, having its output in greater technological advancement and innovation. Simultaneous cooperation and competition gives an advantage of fast adaptation to rapidly changing market demand (Eisnenhard & Galunic, 2000). Additionally, the cooperation on project level decreases risk associated with investment uncertainty (Zineldin, 2004). From the focal unit perspective, this strategy helps to reach central position within the corporate network and ensure easier access to information and resources of other subunits (Gnyawali, et al., 2006). The coopetition allows a subsidiary to gain more power and influence over an MNC overall strategy (ibid). As discussed by Tsai (2002) formal control mechanisms have a negative impact on knowledge sharing between competing agents. On the other hand socialization can be an efficient tool in managing coopetitive relations. For that reason the high cost of managing the coopetitive strategy is regarded as a significant disadvantage (Zineldin, 2004). Apart from that, the power struggles between cooperating competitions might lead to a domination problem. Instead of creating a variety of synergies the internal market might be monopolized by one of the subsidiaries (ibid). The problem of too cooperative relationships, when partners invest in relation despite its low productivity and market relevance, might as well appear (Eisnenhard & Galunic, 2000; Zineldin, 2004).

Strategies of Coopetition

The types of coopetition strategies can differ between MNCs and the balance between cooperation and competition can vary significantly (Bengtsson & Kock, 2000; Luo, 2004; Chin, et al., 2008; Osarenkhoe, 2010; Lado, et al., 1997). The first model comparing the balance between cooperation and competition is Lado's (1997) Syncretic Model of Rent-

Seeking Strategic Behaviour. The model delivers division between Monopolistic (low cooperation, low competition), Collaborative (high cooperation, low competition), Competitive (low cooperation, high competition), and Syncretic Rent-Seeking Behaviour (high cooperation, high competition). The typology presented by Luo (2004) respectively introduces the names Monopolayer, Partner, Contender and Adapter. The Partner type of behaviour is the one most commonly met in the industry (Chin, et al., 2008). In other kind of classification Bengsston (2000) focuses on the relation between competitors and differentiates between Cooperation-dominated, Equal and Competition-dominated relationship.

The first step to successful coopetition strategy is the recognition of importance of both cooperation and competition for the company successful performance (Eisnenhard & Galunic, 2000; Birkinshaw & Lingblad, 2005). Furthermore it is impossible to cooperate and compete in a given activity at one time, the areas of cooperation and competition should be separated (Bengtsson & Kock, 2000). The competition should be allowed to exist on the corporate level whereas a culture of trust and openness should be developed among individuals (Eisnenhard & Galunic, 2000). Another success factor for coopetition strategy is equal distribution of power and control between collaborates (Bengtsson & Kock, 2000). In order to make partnership work, actors must share objectives, have complementary needs and share risk evenly (ibid). Other identified success factors for coopetition strategy are *Individual willingness, motivation, and strategic fit*, which states that both parties must have interest in entering the collaboration (Zineldin, 2004). Besides that the *Interdependency* between parties must exist. Additionally when establishing coopetitive relations, there is a significant demand for mutual trust and commitment (Zineldin, 2004; Chin, et al., 2008). The cooperation should have a formal status and be legitimized by headquarters. Additionally subsidiaries should be sovereign in their decision-making (ibid).

Coopetition and Knowledge Sharing

Knowledge sharing is one of the forms of coopetition between competitors (Tsai, 2002). The cooperative aspect of knowledge sharing relation is expressed by utilizing knowledge for common purpose whereas focus on own agenda and attempts to outperform sharing partner is a sign of a competition (ibid). As already discussed, one of the problems of knowledge transfer is lack of motivation for knowledge acquisition. The strategy of simultaneous cooperation and competition might be successful in delivering stimulus for knowledge seeking (Lado, et al., 1997). The competition between subsidiaries is a strong incentive to identify the need for new capability, which pushes subsidiaries to approach other units and satisfy the need (Zineldin, 2004). However when reflecting on coopetition strategy success factors, especially the need for trust, the internal competition must be complemented by cooperation (Gnyawali, et al., 2009).

Methodology

Intrafirm competition and knowledge transfer is closely related to the subjective experience of individuals, therefore it has been decided to apply qualitative method in order to investigate these phenomena and to reach better understanding of them. Qualitative strategy possesses a view of social reality as a constantly shifting emergent property of individuals' creation and emphasizes an inductive approach to the relationship between theory and research and the ways in which individuals interpret their social world (Bryman & Bell, 2007). Furthermore, the method that is used by qualitative studies provides a more accurate understanding of the social phenomena than the one that could be obtained via quantitative study (Silverman, 2006).

In this study, a multiple-case study research design has been chosen with the aim to compare and contrast the findings deriving from different cases which in turn encourage consideration of what is unique and what is common across cases, and promotes theoretical reflection on the findings. As a research strategy, case study is a process of the collection and presentation of detailed information about a particular organization or small group (Yin, 2003). The multiple-case study designs have become increasingly common in business and management research as an extension of the case study approach (Bryman & Bell, 2007).

Particular foci of this study are MNCs which operate in a knowledge-intensive industry. The underlying reasoning is that most work in these firms is of an intellectual nature and the majority of the workforce consists of well-educated and highly qualified employees (Alvesson, 2001). The choice to focus on knowledge intensive MNCs has been also motivated by well-developed knowledge management techniques in these organizations, which raises prospects for more apparent influence of competition on knowledge transfer. In order to gain insight into intrafirm competition, dispersed structure of research activities has been chosen as another case selection factor. Knowledge-intensive companies are particularly good examples of contemporary forms of 'people-dependent' organizations and thus they are said to embrace the ideology of 'entrepreneurialism' as the pervasive structure of governance (Robertson & Swan, 2004). In this research, three MNCs have been selected as the case companies which respectively operate in telecommunications, power and automation technologies and video game business setting. Although the management level has been identified as having the strongest impact on competition (Becker-Ritterspach & Dörrenbächer, 2009), transfer of tacit knowledge is regarded as an exchange taking place between individuals mostly during a team work (Persson, 2006). The research sample has been composed of researchers who are active members of intrafirm teams. Intrafirm teams are understood as project groups where members come from units having a supplementary function in company's value chain. The sample selection key was considerable experience in this type of a group work. As a result of convenience and snow ball sampling a group of fifteen respondents was formed. One of the study limitations is that despite targeting well-experienced employees, some of the interviewees had limited experience in intrafirm projects.

According to Yin (2003), one principle of data collection is to "*use multiple sources of evidence*" and the main strength of case study data collections is the opportunity it provides to use many different sources of evidence. The first-hand data of this study have been gathered through semi-structured interviews. The main goal was to get access to individual's experiences on how knowledge transfer occurs and how this process is influenced by intra-firm competition. The viewpoints of people are of great significance in understanding the cooperation and competition within the organization. Especially when emphasizing the behavioural characteristics of individuals, such as motivation and capability, respondents shed light on the dual role of employees in the process of knowledge transfer (Minbaeva, 2007).

The interview guide consists of structure questions and open questions. It has been formulated in a way that covers the important issues regarding the main research areas which allowed to have pre-set the focus during the interview. For the purpose of the research, four categories of questions are included in interview guide. The first type of the questions is a metric which indicates interviewee's gender, current position, career path in the company and working experience in the intrafirm team. In this part basic information regarding the respondent are collected. In the second part of interview guide, the goal is to find out which type of knowledge transfer is more common for the company. Hence the questions' focus is on whether the company values more *Equalization* (the transfer of already known) or the *Synthesis* (the creation of new knowledge). Based on the assumption that the competition takes place when units have the same source of resources and when they perform similar, substitutive tasks, the focus in the following part of the interview guide is on what is the corporate structure of R&D units, what functions have the units and what are the differences between existing units. As knowledge transfer represents the key mechanism for interunit cooperation, the final part of questions is focusing on how the process is organized. The Respondents have been also asked what problems they face when working in the project team and what the methods to solve them are. The problem of motivation to acquire knowledge has been given considerable attention. Additional focus has been given to motivational systems design in Research departments. The research is based on fifteen semi-structured interviews, which last between forty minutes to one hour. Most of them were face-to-face meetings and only three of them were telephone interviews. The answers given by the Respondents were recorded. The interviewees were informed about the purpose of the study although no questions were disclosed in advance. As requested, the names of the companies will remain anonymous.

The interviews have been transcribed and authorized by the respondents. The data have been independently analyzed by both authors. The analysis focuses on four theoretical groups which are: knowledge transfer, cooperation, competition and coopetition. The reason why the coopetition is not directly addressed in the questionnaire is because this concept can be analyzed only by looking at the coexistence of cooperation and competition. Narrative analysis approach has been applied to conduct the data analysis. According to Bryman and Bell (2007), narrative analysis is an approach to elicitation and analysis of language that is sensitive to the sense of temporal sequence that people, as tellers of stories about their lives

or events around them, detect in their lives and surrounding episodes and inject into their accounts. Unlike ground theory, it possesses a holistic philosophy that a phenomenon should be understood in the context where it has taken place. To be specific, the interviewees have been asked to tell the stories relating the research topic such as "*What kinds of problems do you face when working in the project team? How do you solve these problems*?" By doing this, it can be better understood what are the knowledge transfer barriers and the methods to overcome the problems. One of the advantages of narrative analysis is that it conveys a clear sense of an organization as an arena which a variety of perspectives and viewpoints coexist, rather than a monolithic entity with a single voice (Brown, 1998). Therefore, it fits the study purpose quite well since individuals that come from different R&D units probably perceive the knowledge transfer process in various ways.

Being considered verbal reports, interviews are criticized for bias, poor recall and poor or inaccurate articulation (Yin, 2003). Therefore, secondary data have been collected as supplementation through a range of channels. At first, relevant literature about the concept of "*coopetition*" and the barriers of knowledge transfer within MNCs has been reviewed in a constructive way. Secondly, the documents obtained from case companies can help to understand the process more comprehensively, examples being the company brochure or the information on organizational website. Besides, information has been also gathered through other data sources such as public documents originating from government inquiry or industrial investigation, mass media publications like newspaper and magazine articles, or information that appear on the Internet.

Research limitation

As the analytical focus of this study, the competition and cooperation phenomenon are generated by the joint behaviour of unit pairs, or the entire network within a MNC. However, as mentioned, the main empirical data is collected by conducting interviews with a specific group of people and most of them are coming from the one unit in each company. It limits the investigation of competition as the joint behaviour to the nodal level as the problems are perceived from one unit's perspective only. Apart from this, the sensitive feature of the topic could lead to the inauthentic opinion from respondents. The interviewees may not reveal all that they really know. Last but not least, this research may be deemed subjective because answering the research question mainly relies on the data gathering from individuals' viewpoint and was analyzed by the researchers' interpretation according to their own values and beliefs. Thus future work can apply a quantitative research approach to explore the role of competition in to fostering knowledge sharing within firm.

Empirical Data

This section follows the structure of the Theoretical Framework. First, a brief description of the case companies is given. Next, findings concerning the aim of knowledge sharing, the impediments of knowledge transfer and the process itself are presented. The following subsection treats cooperation and its benefits. Finally, information relevant for intrafirm competition and its influence on knowledge search are revealed.

Overview of the companies studied

The subjects of the study are three MNCs with a parent located in the Nordic region. All firms operate in a knowledge intense industry. The companies declare strong commitment to technological development in their mission statements. All interviewed MNCs have a well established reputation of innovation, reflected in a number of honourable awards.

The AAA Company operates in telecommunication technologies and employs approximately 20 000 people in research structures, half of which are research engineers. The company is engaged in a number of collaboration projects with research institutes and universities. The geographically dispersed research divisions are divided into research focus areas. In 2010 the company filed more than 25 000 patents.

Company BBB is a leader in the power and automation technologies industry and operates in around 100 countries. Almost 6 000 scientists are being employed in research centres located in Europe, Asia and North America. Similarly to the AAA Company, BBB is heavily engaged in a number of collaborations with academia and governmental research centres. In 2010 the company delivered almost 20 000 patents.

The CCC Company is the third case company of this study. This MNC focuses on the development of online games. The company has different pools of talent; over 500 employees working in three R&D units: Reykjavik, Atlanta and Shanghai. They are responsible for developing different game products.

Although in all three companies research activities are globally dispersed, what is important for the purpose of this study is the cooperation between research centres on the project level that takes place on an everyday basis.

Knowledge Transfer

The Firm Focus

The type of knowledge sharing, synthesis vs. equalization, which occurs in the MNC, is strongly related to the aim of the intrafirm project. In this study, all of the people in the R&D units are doing research in the area critical for their business and they put their focus on technological development, creating new technology, methods or products. For instance, Respondent Hank from BBB mentioned, *'we are always looking for possibilities to develop new technologies. Like completely new products, which is more fun, at least for me it is.'* And Daniel from CCC *'We try to make a game (…) and*

make us money.' Knowledge transfer will take place to economise on what is already known in some R&D units to others within the company. As Respondent Anne from AAA mentioned '*This is always the benefit, to see how other people are solving a similar problem. You can see they are doing it in a better way. You can learn. You get some new fresh ideas.'* Respondent Cara from BBB commented '*People have different characteristics in the international team. They also have different ways to solve problems which may be faster or cheaper than the way we have. And they could solve some problems that we don't know how to solve.'* To summarize, although the primary aim is to create new knowledge, equalisation also takes place in each organization.

Inhibitors

The main inhibitors of knowledge transfer have been identified in this research. These are geographical variation, communication and heterogeneous strategies and motivation, which are described as follows.

Geographical and cultural distance

A characteristic of MNCs is that geographical distances cause problems in knowledge sharing. For instance, time zone differences limit collaboration during working hours. This turns out to be an obstacle for R&D units in particular. According to Respondent Daniel from CCC, *'so you send an email, you don't get response until next day. Doing a meeting with Shanghai is going to make someone on one side to be mad because someone has to stay late and someone has to come on early.''*

Geographical disparity often comes also with cultural disparity. The difference in cultural background can easily create problems in communication and make the process of knowledge sharing more difficult. Respondent Karl from BBB said, *'you don't know what the working routine is for people in the other centre, for example how do they like to run the project? Do they want me to tell them what to do? (...) And how do they to deliver the results? Should it be written? In some other culture, they prefer to talk a lot more, like in my culture.'* According to Respondent Harry in CCC *'If you have local team with different nationalities, you would have some culture barriers. So it's a typical problem we will run into.'*

Communication

Within a MNC, communication is of great significance for knowledge sharing among different R&D units. For those R&D units that need to have a lot of information exchange, communication will take place to a large extent. As Respondent Daniel from CCC mentioned '*So it's a lot of communicating with them about what we need from the*

technology they are developing.' However, troubles may arise when one runs into a language barrier, which includes terminology problems and differing English linguistic abilities. On the one hand, the misinterpretation of terminology usually leads to confusion among researchers. Frequently, people talked about the same thing but called it different names. Respondent Williams from AAA '*It is not the language, but to speak the same terminology. That is sometimes, you do understand the concept and you want to explain something but you don't know the terminology.'* On the other hand, communication problems also occur when people speak in different languages. More often than not, English is the common language when working in an MNC with people from various parts of world. However, for people who worked in R&D units, their linguistic ability to perform well in English-speaking is different. Respondent Daniel in CCC mentioned *'English-speaking is a requirement in Shanghai, but (…) I know some people who have communication issues with some other Chinese employees.'*

Heterogeneous strategies

A fundamental premise for units within an MNC to share knowledge is that they possess a common goal. Nevertheless, different R&D units, spread out in a range of locations, play dissimilar strategic roles in the MNC. Each unit has to make some contribution and achieve certain results for the company. Every unit may have different objectives. The problem of competition has been identified as one of knowledge transfer inhibitors. This problem will be investigated in more depth in the Competition section.

Motivation

There are different views regarding motivation for researchers to cooperate and share knowledge with people from other R&D units. A majority of respondents don't consider it as a problem for knowledge sharing within the company since they are motivated to do so. As Respondent Mike in BBB mentioned, *'Often in the research, if you get some reviews or comments from other units, it is good. They have similar competence, we help each other.'* Nevertheless, a few of the Respondents show their low enthusiasm and think it consumes a lot of the company's resources to transfer knowledge between different R&D units. Apart from that if one unit has enough resources to conduct the project, they prefer to have limited cooperation. For instance, Respondent Yale from BBB *'Cooperating with others is always difficult sometimes (…) it cost money, time and effort for the communication.'* In addition, when the R&D units focus on totally different research areas, their incentive to share information and knowledge is low. According to Respondent Daniel from CCC, '*we rarely talked with the people in Shanghai (…) we are doing radically different stuff.'*

The other obstacles

Apart from the inhibitors described above, there are more obstacles regarded by a few of the Respondents as difficulties in knowledge sharing. Two of the Respondents deemed mistrust among different R&D units and data unreliability as barriers for knowledge sharing. As mentioned by Daniel from CCC, '*you heard of the language "they broke our stuff", "they don't know what they are doing" (...) There is a problem when we don't see the other people as our colleagues. It's definitely being a problem before, there has been some mistrust.*' Besides, Hank from BBB talked about his own experience of encountering the mistrust dilemma, '*Only once or maybe twice I have run into a situation where we had some kind of a crisis because of this.'*

Some of the interviewees also hold a view that knowledge coding is a tough task. According to Anne from AAA, '*Sometimes ideas, if you can't draw or if they are is too complex to explain in conversation or type in the e-mail, can be ambiguously understood.'* Daniel from CCC said, '*We don't write extremely specific document. It is very complicated to specify exactly what you want. It is an effort that will take you a month for a single system. Doing that is a long complicated process.'*

Last but not least, the not-invented-here phenomenon occurs in the companies as well. As pointed out by Hank from BBB, '*You can also run into people that shut all the windows and doors. There is a key word 'not invented here'.'*

Knowledge distribution

As the main concern in this study, the intrafirm team project provides an option for different R&D units to interact with each other and exchange information. Respondent Yale from BBB '*you have projects meeting; gate model, and you have this process going on. You have some common information disk, computer database. You have all the material shared there.'* The team is constructed in a way that people possess various backgrounds and come from different places around the world. As Amy from BBB mentioned, *'We are very different. Some people come from the materials side; some of them are more physicists. People work on different parts. You can actually work on a project and have no relations with other people in the project because they are working in very different areas.'*

In addition, knowledge sharing within a MNC can be done by a variety of means, such as workshop, telephone meeting, and video conference. These channels enable everyone in the company to demonstrate what they have achieved and discuss the problems they have faced. At the same time of presenting what they do, they also need to attend presentations of other people. Therefore, they get a chance to be up to date about what other teams and other R&D units are doing. For example, Respondent Anne from AAA said '*We organize a lot of workshops, where we brainstorm about ideas. It is especially valuable between*

different groups and people from different areas.' In addition, individuals who are working in one company have many chances to know each other by cross visiting, so the knowledge sharing becomes a co-product of personal interaction. Respondent Yale from BBB '*Quite often we have the cross visit. Sometimes the group leader goes and sometimes the other centre will come to visit us.'* In CCC managers also try to encourage more personal interaction on individual level by moving people around different units and relocating them for a quite long time. Respondent Harry in CCC mentioned '*sometimes they stay for three months in other location. Sometimes we even relocated people for more than years.'*

Cooperation

The Respondents quite commonly declare existence of shared values within the corporate environment. Respondent Mike from BBB said *'at the same time, everyone is and should be aware that we work for one company, we work for common goal and we work for society.'* Trust plays a vital role when individuals establish relationships with members from other units; it generates the cooperation between different R&D units which motivates people to share their knowledge with others. As Respondent Hank from BBB mentioned *'It is based on trust. If you trust someone you can share not only problems but also opportunities.'* Even if distributed geographically, everyone in the company works in similar areas and collaborates a lot with each other on projects. Respondent Harry from CCC pointed out '*There is a desire for people to share their knowledge because they want the other game teams to use that piece of technology they built. (…) they just want other teams to take benefits of it.'*

Team Work Benefits

For all Respondents, the perception of the cooperation function among different R&D units is positive. More often than not, a single unit have limited competence and resources to conduct a project. Furthermore, it often has a narrow view and looks at things from one aspect. The primary advantage of working in intra-firm teams is getting access to more resources to carry out the project. In the meantime, people involved in the interunit teams will gain a broader perspective on a problem as well as an opportunity to learn from individuals having different background. Respondent Mike from BBB mentioned *'To educate yourself and understand how people look differently at the same problem in different part of the world'.* This opinion is in line with Respondent Yale from BBB '*So we need to go out, to work with people from different backgrounds, even different countries to get best ideas more effectively.'* As a mutual help process, individuals

working in the intrafirm team benefit a lot from knowledge sharing. As Respondent Simon from BBB points out *'It's also good to share knowledge with each other. So you can also learn more and get help when you need it. One cannot be good at everything. So you have to cooperate and get help from others.'* This view is also in line with Respondent Anne from AAA who said '*It is important to share knowledge with other people, because otherwise the people will not share knowledge with you.'*

Establishing Cooperation Ties and the Knowledge Broker Role

There were almost no cases when new collaboration was set up, as people mostly rely on already established lateral relations. Individuals get used to the relationship they have, and they further emphasize the need to know each other. According to Respondent Cara from BBB '*It will be much better if you know the people (understand their way to do things) knowledge sharing will be much easier.'* And Respondent Karl from BBB also possessed a similar view that '*The reason is they don't know me. If they know you, they know your capability, they trust you, and then you can go ahead with the project.'* Furthermore, there is a difference in perception depending on how and who starts collaboration. The initiative of establishing a partnership between units is not always regarded as positive, especially if there is no former collaboration experience with the approaching unit.

The interviewed researchers hardly ever seek knowledge beyond existing ties. Only if the need for knowledge cannot be satisfied by the established network, the researchers will consider new partnerships. According to Amy from BBB *'I can search for people on Internet and look them up, but I have never done that (…) If I am looking for a person in a Research Centre with a specific knowledge I would probably call the ones I know and they will help me to get more information about the people.'*

What is interesting is that in all case companies a proxy function of knowledge broker exists. People on different corporate levels, higher then researchers, are responsible for finding synergies by screening the internal market. In the case of AAA, the line managers and their supervisor serve as a 'corporate knowledge hubs'. As Respondent Anne in AAA mentioned *'the management is the one who knows who is doing what, and where are what competences (…) He (line manager) is looking around what everybody is doing (…) They (line managers) are also suggesting us to contact this person*

from product unit or that person from research. Line managers know more, on a higher level, who is doing what.' In the case of BBB, the proxy role is located on a global level. Nicklas described it as '*He (Global Program Manager) goes around all Research Centres, within entire discipline, and talks to researchers working on different projects and looks what they are doing. He also has the knowledge about the needs and the market.'* In the case of CCC, the proxy function seems to be assigned to Chief Technology Officer. According to Daniel *'His (CTO) speciality is getting people to work together and drive communication and the process (…) His job is to specify requirements, fix communication problems and ensure transparency in what each group is doing.'*

Competition

The Respondents distinguish competition on the corporate and team level. The corporate level refers to a unit's general performance in the research network. *'Some other unit might come up as best but then we work hard the next year to catch up'*, said respondent Mike from BBB. In Hank's opinion *'If a local company or organization sees the opportunity to enhance and get their own benefits before the others, it becomes in a way a competition.'*

Competition on the team level is more about team members' limited openness. The reasoning behind this is one's focus on career and compensation. Carlos from AAA reported, *'People might not share what they think, because of threat that others will use their ideas for own projects. Besides, people want to keep their position in the organization and try to gain as much resources as possible'*. Hank from BBB added, *'…someone tries to make his own benefits and put themselves and their organization in front of the target of the enterprise'*. The competition is manifested by focusing on different objectives in the project work. As William from AAA stated, *'You notice this very clearly when you work with other people. Everybody has his own agenda. You try streamline as much as possible but everybody wants to reuse the results for their own purposes for internal use, for his own career.'* Competition among researchers cooperating on the team level can be sometimes directly driven by the line management. According to Hank from BBB, '*People might be much suppressed. Some countries have organizations like that. The boss is basically the "god". He controls information, he controls the person. You are not allowed to speak unless he allows you to do so.'*

When it comes to the influence of competition on knowledge sharing among R&D units, people have various opinions. As a rule of thumb, the majority of respondents possess the general view that the competition between different R&D units hampers knowledge sharing. *'If there is competition, the company is silo and people don't share the technology'* said Harry from CCC. Only a few Respondents mentioned positive aspects of competition.

Source of Competition

The appearance of intrafirm competition has been investigated through the level of overlap among Research Units and their access to corporate resources.

Overlapping Structure

The R&D activities in all three cases are gathered under one distinct corporate unit. A research department typically consists of several divisions, which in turn are composed of project groups. The group is the smallest entity in a research organisation and might be composed from approximately eight to ten people. The organizational structure of research activities in investigated companies is pictured on a figure below.

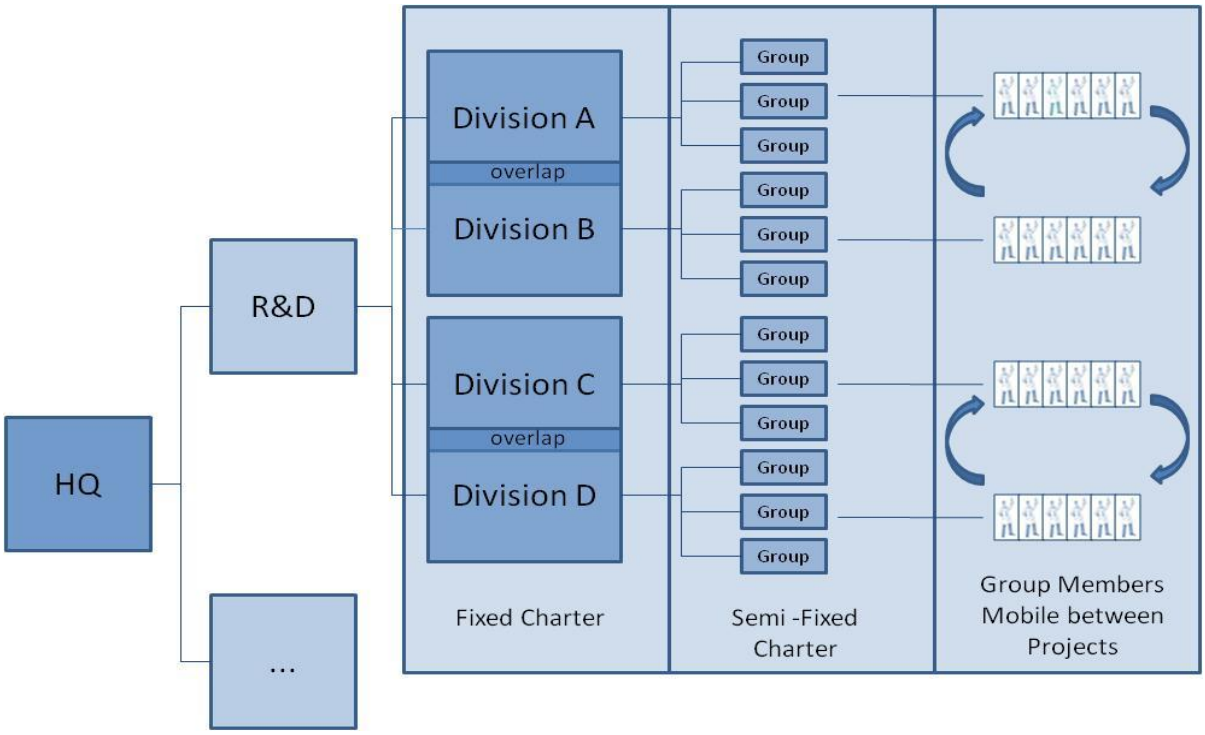

Figure 1. Organizational Structure of Research Activities

Research Divisions are spread out geographically, the location however does not seem to be a major criterion for organizing the research structure. According to Anne from the AAA *'We are just spread globally'*. Instead, the unique capabilities of each unit serve as a division key. William from AAA said *'We have six divisions, all focusing on different topics.'* Also, Yale from BBB stated *'Each Centre has a focus area, the strong*

area.' In all cases charters on the division level are well defined. Although the Respondents disagreed about the extent of overlap among divisions, all of them agreed that it exists. For instance, Anne from AAA mentioned that *'we overlap in some areas, but in the same time we have projects on our own.'* For Mike at BBB, *'two centres can have some overlap in competence and activities.'* The Respondent Harry from CCC who declared that *'Absolutely. There is an overlap between different R&D units'* is supported by his colleague Daniel who stated *'There is a bit of overlap in some shared technologies.'*

Most of the time, the interviewees identified only one division performing activities similar to their parent unit. Although there is no formal hierarchy between divisions, the interviewed group was able to point the 'superior unit' in the research network. The superiority was regarded in terms of technological advance, experience, closeness to the most profitable product or amount of management attention and the value of assigned resources. For example, William from AAA stated that '*Some (Research Units) are more successful than the others. Of course the ones that are cash cows get more attention.'* Mike from BBB claimed *'The Blue unit is quite established in terms of technology development.'* Karl from the same company pointed out that '*The decision-makers are located here',* whereas Daniel from CCC said *'Most of projects are here.'* The divisions are matrix organizations with line management responsible for allocation of goals and evaluation on one side and scientific supervision structure on the other. According to Hank, BBB is a *'so called matrix organization.'*

The group level of the companies is less fixed in terms of both the intended charter and staff. The group's charter might evolve in time. In case of the AAA, due to management attempts to catch up with rapidly changing research profiles, groups are often renamed. As William from AAA described, *'these are just names, and everything is just floating and being reorganized. You stay with your topic, but things around you change (…) Sometimes they try to adjust it, but things move too quickly. The line structure will never reflect reality.'* Although the group itself does not relocate, the group members might be assigned to projects run in or with other research divisions. Anne from AAA and Nicklas from BBB declared that *'Often we work all in the same project, we are just distributed geographically'* and that *'Units might be doing slightly different things, but there might be a project that involves both teams. Some parts are from here, other are from there. It could be that*

several Research Centres might participate in the same project and depending on the competence they have focus on a particular part.' The group members work on more than one project at a time. The number of hours allocated to a researcher reflects the project's priority in his or her work.

Resource Dependence

As none of the interviewed Research Units generates income directly, the primary source of financing are resources dedicated by headquarters. *'We use our profit to fund the R&D' Harry, CCC*. For instance, at the BBB Company all Business Units are obliged to contribute part of its profit to Research Fund, which in turn is distributed among Research Divisions.

At AAA and BBB the process of Budgeting is aligned with Strategic Planning. The strategic focus of research is set in a mix of top down and bottom up processes. As Anne from AAA said, *'Some of the ideas are proposed by us, some of them come from our line managers'.* Once a year, on the top corporate level it is decided what the company should focus on. At the same time employees have an opportunity to propose their own ideas. If the initiative is consistent with the strategic objectives it might be granted resources. The money is not assigned to divisions but to research programs or projects. As Hank from BBB put it, *'There is management that works globally, they participate in designing strategy. We all participate, in a way that we propose and formulate strategy in terms of what technology should be developed and how it could work. These proposals are then managed by the global team. Together with local managers they agree on the strategy. When the strategy is formed, these managers decide about the projects and their funding.'*

Units can gain partial independence by obtaining external financing. In the case of AAA and BBB, Research Units might either apply for funds from governmental agencies or they may enter academic collaborations where resources are already secured. Additionally, in the case of BBB, an internal market for development activities exists. Business Units act as customers who order a certain type of research activity and pay for it directly from their own budget. It happens that Research Units promote themselves and their research area among Business Units in order to ensure more resources.

Resource Distribution

The resources are allocated to a particular Research Unit in a course of evaluation. The performance of a Research Unit cannot be measured in terms of profit; instead divisions are assigned research goals. *'We have internal research target, set by Top Management'*, said Anne from AAA. Yale from BBB added, *'Each Research has its*

own goals (…) and all Research Divisions must report some kind of a result. You must achieve these goals, otherwise you lose money'. A benchmarking system comparing results of different units is set in AAA and BBB. As Mike from BBB mentioned, *'We have some statistical index to compare one unit with the other unit, and to judge the performance in a particular year. The index looks for example on how many projects we completed, are they valuable projects, or on how many publication we made'*. In intrafirm projects the problem of sharing the result appears. Yale from BBB indicated the problem by saying, *'So how to share results? How many percentage you should take? 20%? 30%? How to divide the work and how to share the results is difficult in some extent.'*

Timing Competition

In all cases the top management indirectly manages competition. On the corporate level one strategy can be to mitigate it by fixing divisions' charters and decreasing the level of overlap. In such cases, regardless the source of initiative, projects are assigned to units which have formal corporate competence in a given research area. *'Just to avoid competition, they (management) say that a certain type of research is performed here not there. They say: the key competence lies here not there. As a result the same type of project is not run in two locations at a time'*, said Nicklas from BBB. The other approach is to increase competition by assigning the same type of task to two different research units. Harry from CCC notes, *'I would admit we do engage in targeting a little competition on these things.'* The Respondents in all companies declared that the management encourages cooperation and that its level is higher than the one of competition. *'I think it is the company's policy. One has to share knowledge with others in order to work in this environment'*, said Simon from BBB, while Hank added *'The top management have emphasized the importance of cooperation much more. They have also made it much clearer'*. On the researcher level, the company employs remuneration systems based on individual performance and team work components.

Competition and Motivation for Knowledge Search

Lack of motivation for knowledge searching has not been identified by the Respondents as one of the knowledge transfer inhibitors. However, all of them were able to identify the phase of knowledge search in their research work.

The direct driver to search for knowledge is a lack of competence to solve a problem. This trigger is relevant on both an individual and corporate level. Carlos from AAA stated, *'I start to search for knowledge when there is a problem I cannot solve by myself, when there is a lack of certain type of capability'.*

The problem must be solved in order to reach a project objective. The Respondents identify themselves with the parent unit and correlate their contribution in the project with strengthening the unit's importance in the corporate network. Anne from AAA said, *'Well you want to have more projects eventually, and then you are getting more money. Everything is about the money and the budget. Project means more money and more people to hire. You want your unit to become bigger and stronger and more important'.*

The extrinsic motivation as well as self-interest plays a critical role for knowledge search. Although the process of researcher's evaluation differs among the case companies, in all firms it is based on individual and project team performance. According to Anne from AAA, *'It is the result of the team, which is evaluated. All group members get the same financial bonus. In the same time your individual performance is evaluated based on your professional development'.* The Respondents have contradicting opinions about which component is more important. Usually the evaluation takes place once a year. *'You have your personal development meeting with your boss. You discuss what you have done during the year and you put up new goals. It is not directly aligned with the project'*, said Amy from BBB. In AAA, the follow up meetings are every three months.

The unit's research goals are cascaded to the employee level. Anne from AAA said *'All this goes filtered up and up, and then it comes back. And in the end you get text saying what you have to do'.* The target is defined more as a problem to solve than as a particular task. The researcher's progress in his expert domain is the primary subject of evaluation. A number of filed patents and/or published papers are a common measurement. Carlos from AAA shared *'You are supposed to deliver research result in terms of patent and published articles.'* Also Hank from BBB admitted *'For example when we file an idea, then we get quite nice amount of money, just when it is filed. If it develops into patent application or publication, then it is also gratified with some money. We have rewords for accepted publications.'* Employees are remunerated also for soft skills development.

In AAA everybody in the group receives the same financial bonus if the project has positive results. At the same time, it is the project leader who receives the most of the recognition.

'Most of the benefits go to the leader in the team. As a team member, my effort will not be recognized that much. It is always the project leader who takes the points' said Karl from BBB. In both, AAA and BBB promotion is commonly understood as an upgrade from team member to project leader, and more freedom in deciding which projects to participate in. In CCC's case, the researcher's evaluation is also based on the market success of the developed product. The distinctive feature of the CCC's incentive system is that employees, instead of receiving financial bonuses, own the company's stock. As Harry from CCC described, *'every employee in CCC has stock options. That is how people relate to the success of the company. They understand that if the company does well, that their stocks will be valued at a higher price. They understand they can make more money'.*

The Respondents declare that the main benefit of knowledge sharing is advancement in their expertise, creativity and cognitive skills. Respondent Mike from BBB believes that *'By sharing knowledge the level of competence will never go down.'*

Knowledge sharing enhances the ability to generate innovative ideas which are capitalized in patents, publications and fulfilling research goals. Anne from AAA explained, *'The more you share with others the faster you learn and come up with something new (…) You get inspired by other people work. If you are not looking what the other people are doing you will not get ideas yourself (…) If you have seen what other people have done then you will get yourself some new idea much faster. We read all these papers and related works and we try to identify what is good about them and what is missing. By reading and listening to these people, by thinking about their mistakes, you come up with your own ideas. That is the point.'* Cara from BBB added, *'It will enlarge your own perspective on the product portfolio and will help you to generate new projects. You will become more productive and more efficient for the company. The value you add to the company will be greater. This is a good argument to not only to try to increase your salary significantly but also to stimulate your enthusiasm at work'.* Another respondent from BBB, Simon expressed a similar view, '*It is for one's own benefit. It is good to share knowledge with each other. You can learn and get more help when you need it.'*

The personal advancement and reaching research goals is in turn recognized by the company and is gratified by increase in responsibilities, decision making power, research freedom or financial compensation. *'You are more interested in your own career path. So what you have is that you have your own personal goals and of course you do want to fulfil these goals… By doing this I also help the project.'* said William from AAA. Karl from BBB said, *"I will contribute 100% as a team member. It is a way to become a project leader when you show some good skills'*.

The intrinsic motivation is another factor driving a problem-solving need. *'People are really interested in what they do'*, said William from AAA. Similarly, Carlos said, '*The reason why I want to get better in my projects is partly because of my ego'*.

Discussion

Fruitful Variety

In all investigated Research Units the primary objective for knowledge management is to enable creation of new capabilities. Focus on knowledge synthesis, rather than equalisation, can be seen as a distinctive feature of research departments. The reason why so little equalization takes place is that the function of R&D departments is to deliver innovation, which consists of new knowledge. To encourage knowledge synthesis, the companies often compose teams out of members with diverse backgrounds, so that there are substantial differences in their knowledge domains. As the knowledge flow usually takes place in an intrafirm team when individuals interact, people with different backgrounds can propose alternative ways of looking at problems and thus prompt innovative solutions. In all cases both types of knowledge, explicit and tacit, were the subject of exchange.

Impediments

The Respondents reported almost all inhibitors of knowledge transfer that are specified in the literature. Particular attention was given to problems appearing due to geographical distance and cultural differences. Work overload, given by most of the Respondents as an explanation for lack of sender's motivation to share knowledge, might suggest that there are no concealed reasons to block the knowledge flow. On the other hand, information regarding hidden agendas clearly points on competition as a motivation inhibitor. Lack of retentive capacity received very little attention and what even more interesting none of the Respondents was indicating the problem of absorptive capacity. The explanation for that might be in the composition of the research sample; researchers as a profession are characterized by well-developed expert knowledge. Additionally, the technical language eases knowledge codification. On top of that, a high level of Respondents' intrinsic motivation might positively influence their cognitive skills.

All that Glitters is Not Gold

Based on collective values, cooperation between different units improves the information exchange by overcoming some obstacles of knowledge transfer. As a benefit of working in an interunit project, individuals have a chance to enrich their life experience by cooperating with people who have different cultural backgrounds. They can see how other people solve problems and get better understanding of their ways to do things. Furthermore, as an essential tool for communication, common language is easier to achieve when a strong tie is established between different R&D units. Communication difficulties such as difference in terminology can be lessened through more interunits' information exchange. As reported by the Respondents, cooperation has also significant importance for overcoming problems related with casual ambiguity or unprovenness. Long term relationships helps to establish trust between sharing partners and overcome contextual impediments.

It seems however that cooperation does not only help to overcome knowledge transfer problems but might also become a knowledge inhibitor by itself. None of the Respondents identified the problem of lack of motivation for knowledge search. The primary reason might be a high level of cooperation and conformity. Almost none of the researchers were engaged

in establishing new horizontal collaboration. All interviewees underlined the importance of further need for strengthening existing collaboration ties, whereas none of them discussed the need for new partnerships. Even when the knowledge gap could not be satisfied via existing ties, the first step to establish new connections was through active lateral relationships. The researches had no or very little information regarding activities taking place in sister units. None of the Respondents declared interest in knowing what is happening in other units. Such a situation might indicate that the Respondents had no interest in establishing new collaborations and the process of screening the internal market in search for synergies does not take place. Knowing that not only the depth but also the number of collaborative ties is important for knowledge synthesis it can be suggested that too much focus on long term cooperation might limit the motivation for knowledge search. Apart from that, long term collaborations carry the risk of equalizing knowledge of the sharing partners, which invalidates their ability to synthesize new knowledge. This in turn leads to a smaller amount of valuable partnerships and decreases the number of marketable opportunities.

Despite existing disadvantages of cooperation the majority of Respondents were uncritical towards it. A possible reason for that might be that most academic researches focus on the positive aspects of collaboration. This in turn has an impact on managerial practices and ignorance towards cooperation's drawbacks.

King without a Crown

One of the interesting findings regarding establishing new collaboration ties is a function of a knowledge broker, also called an infomediary, which is commonly assigned to a managerial position. The knowledge broker might complement for lack of researchers' initiative to search knowledge beyond existing collaboration ties. His knowledge regarding a sister units' research focus might be utilized in the process of the synergies search.

However, the knowledge broker solution seems to have at least several significant limitations. First, the knowledge broker is commonly activated only when being approached by researchers. This in turn implies that the search for synergies is not an ongoing process but an ad hoc event. Secondly, limitations of his expert knowledge might decrease the number of identified collaboration opportunities. Finally, a broker's network might have limited reach. A group of researchers actively screening the internal knowledge market could have much larger capacity for searching for synergies than a single person.

Cinderella

Intrafirm competition has been identified in all three cases. Although the managerial emphasis is on improving cooperation between units, the research organisational structure as well as a common source of founds facilitate the rivalry between research departments. Additionally the bottom up and top down nature of strategic planning creates space for charters overlap.

The explanation why management allows competition to exist might be that all three companies operate in rapidly changing industries and internal competition can decrease the risk of being outdated.

Although most of respondents regarded competition as a negative phenomenon some of the findings indicate that it may have a positive impact on motivation to search knowledge. On the unit level the process of evaluation and resource allocation, which is based on benchmarking, enhances a unit's entrepreneurial orientation and strategic vulnerability. In order to secure its position within the corporate network and secure access to resources, a unit focuses on reaching assigned research targets. These in turn are being cascaded to particular researchers. In order to strengthen their intrinsic motivation for problem solving, a company constructs an incentive system which balances self-interest and team work orientation. A search for knowledge is a part of the problem solving process. The figure below pictures the interdependences between intrafirm competition and motivation for knowledge search.

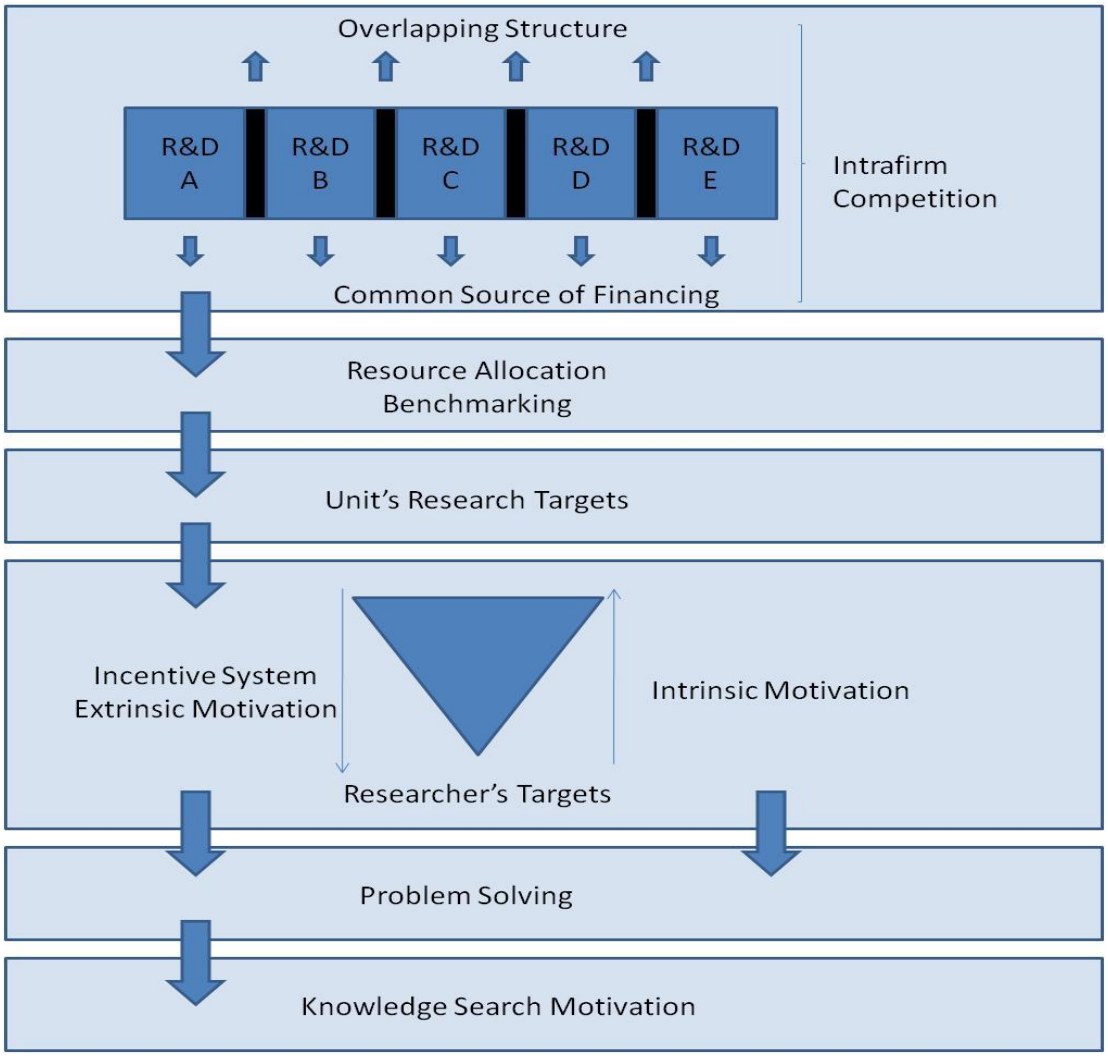

Figure 2 Intrafirm Competition and Knowledge Search Motivation

Another complementary mechanism which might explain the influence of intrafirm competition on knowledge search motivation is employees' identification with their parent unit. Most of the Respondents recognized a link between the number and quality of delivered projects and their research division's centrality in the corporate network. As a unit's position is related with access to resources, the Respondents might regard their unit's

underperformance as direct threat. A drive to deliver projects increases motivation for the knowledge search if a substantial capability to solve a problem is lacking.

Dance for Two

This research outcome suggests that cooperation cannot solve all of the problems related to knowledge transfer. The motivation for a knowledge search might be one of the impediments which cannot be addressed by cooperation. On the contrary competition, which might be harmful for an established knowledge exchange, could have an indirect but positive impact on the initial stage of knowledge sharing. Intrafirm rivalry might enhance the individual's motivation to screen the internal market in search for synergies; and to engage in new and valuable collaborations. Therefore when answering the stated research question it can be said that cooperation could be complemented by competition in overcoming knowledge transfer inhibitors in Multinational Corporations.

The strategy of coopetition, which is coexistence of cooperation and competition, represents a number of benefits from the knowledge transfer perspective. This approach on one hand promotes collaborative culture based on mutual trust and on the other boosts motivation for knowledge search. Some of the managerial implications are as follows: first, it seems important to recognise both the downsides of cooperation and the upsides of competition. The conscious decision of which type of coopetition strategy, cooperation-dominated, equal or competition-dominated, to perform should be made. Each of them serves different purposes and leads to different results. The collaboration and competition should be separated, as it is impossible to compete and cooperate in the same activity. Therefore it is recommended to lock competition on the unit level and promote the benefits of collaboration on a team level. The cooperation between units should be always legitimized by headquarters. The contribution of resources as well as the division of results should be agreed upon in advance. The management should always support a 'losing' competition unit in order to sustain a high level of entrepreneurship behaviour within the network. Apart from that, it is important to keep in mind that competition and supportive incentive systems can strengthen but not replace intrinsic motivation. Last but not least, it is suggested to reconsider a role of knowledge broker. Although the knowledge broker solution provides solution to low motivation for knowledge search among researchers, it also represents a number of limitations like number of identified synergies.

Research Suggestions

The research might draw the attention of the managers in MNCs who are looking for a practical prescription to manage the dynamic interaction of units within the company network. Future research can be dedicated to critical issues related to the strategic management of coopetition from knowledge transfer perspectives. Since this study only concentrates on a knowledge intensive industry, an intriguing query can be made to other industries and how the characteristics of industries will influence the choice of coopetition strategies. Furthermore, more thought can be put on the role of culture to influence the intrafirm knowledge sharing. By influencing the individuals' perception of competition and cooperation, it plays a key role in some business settings that decide the optimal level of

competition within company. Additionally, work can be added to how competition can be kept on corporate level in diverse cultural settings.

Conclusion

Knowledge is regarded as a resource of strategic importance. As an intangible asset it cannot be copied by competitors and by that becomes a primary source of a coopetitive advantage. Internal flows of knowledge among Multinational Corporation's units play a significant role in utilizing existing competences and generating new capabilities.

Due to the importance of the knowledge transfer a substantial amount of research has been focusing on ways to improve the efficiency of the process. Identified knowledge transfer inhibitors can be classified into ones related to knowledge itself and ones related to capabilities of actors participating in the process of knowledge sharing. Much attention has been given to the role of cooperation in overcoming knowledge transfer barriers. The recent trend in Knowledge Management studies implies however, that competition cannot solve all problems related to knowledge sharing.

Lack of motivation to search for knowledge is one of the difficulties that cannot be addressed by cooperation. There are two primary reasons why it is important to encourage new collaborations within the MNC internal network. First, the company benefits from exploring internal synergies. Lack of motivation to enter new partnerships reduces the number of potential business opportunities. Secondly, without stimuli to screen internal markets, units tend to remain in fixed collaboration patterns. In a long term perspective sharing partners might equalize their knowledge and by that the collaboration can lose its ability to innovate.

On the contrary, widely criticized intrafirm competition might be a successful driver for knowledge search motivation. The intrafirm competition as well as its influence on knowledge transfer has not attracted significant attention yet. The results of this study imply that cooperation and competition do not have to be mutually exclusive. What is more, under certain conditions competition might complement cooperation in overcoming knowledge transfer inhibitors in Multinational Corporations. On a way of analysis two mechanisms for cooperation positive influence on motivation for knowledge search have been identified. First the internal competition for corporate resources might create pressure on units to achieve assigned research objectives. In order to reach these targets, goals are cascaded to particular employees. The incentive systems strengthen the researcher's intrinsic motivation and boost his orientation towards problem solving. Knowledge search takes place when one is lacking the capability to solve a problem. Therefore increased motivation towards fulfilling research goals turns into motivation for knowledge search. A second identified mechanism refers to employees' identification with their parent unit. Quality and value of delivered projects strengthen a unit's position within the corporate network; often it means more resources for research activities within the unit. Employees aware of this system feel more motivated to deliver good results. Once again the increase in problem-solving orientation triggers motivation for knowledge search.

In some companies the problem of lack of motivation for knowledge search is solved by establishing a knowledge broker function. Although this solution might prevent excessive

competition on the team level, it also carries number of limitations like for instance limited number of identified synergies.

As already mentioned the strategy of simultaneous cooperation and competition, called coopetion, might be successful only under number of conditions. In order to benefit from coopetition the management is advised to recognise both the downsides of cooperation and the upsides of competition. In order to choose most suitable type of strategy, it is recommended to estimate one's competition appetite. As competition hinders knowledge transfer on a team level, the overall effort should be made to time competition on a unit level. In order to support units' entrepreneurship behaviour, the management should always support unit which has lost the competition. Finally, it is important to remember that incentive systems can only complement, but never supplement the role of intrinsic motivation in knowledge creation.

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