

Towards a Dynamic Concept of Alliance Capability

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Abstract

This paper has a threefold purpose. First, we offer a literature review on alliance capability, which integrates strategic management literature and IMP literature. Second, we extend existing literature on alliance capability by breaking this concept down into five sub capabilities, which are each linked to a stage of the alliance life cycle. Finally, we suggest a number of ways firms can support these capabilities by recommending structural, technological and people-related tools, techniques and solutions. We argue that current literature has focused mainly on organization-wide characteristics, the general alliance function and alliance experience to explain the level of alliance capability. Although we acknowledge the importance of these elements, we stress that more attention needs to be given to the various stage-specific components, tasks and supportive mechanisms that can lead to improved alliance capability.

1 Introduction

Since the seventies, the number of interorganizational alliances (e.g., joint ventures, R&D collaborations, co-marketing agreements) has increased exponentially. More and more, firms tend to call on external partners to meet the increasing uncertainty in the (inter)national business world, resulting in a growing pressure on margins, higher quality standards, advanced customer demands and fast changes in technological developments. The use of collaboration has become particularly acute in capital- and knowledge-intensive

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business sectors. Product and technological complexity, and the shortening of the innovation cycles have made companies increasingly dependent on external parties in their product development, leading to the so-called *open innovation model* (Chesbrough 2003). These pressures have also led to a more relational and network approach to business marketing (Hakansson and Snehota 1990, Anderson et al. 1994, Ford et al. 2006). Alliances help firms to improve their current operations (e.g. through economies of scale, by sharing risks, etc.), creating a more favorable environment (e.g. by setting technological standards) and facilitating entry or exit (Barney and Hesterly 2006). Many researchers have analyzed alliance success, which has been measured by a variety of variables such as increases in stock market prices after the announcement of an alliance (Baum and Oliver 1991), the speed to announce an IPO (Stuart et al. 1999), innovation rate (Hagedoorn, John and Schakenraad, Jos 1994), survival rates (Uzzi 1996, Mitchell and Singh 1996) and interorganizational learning possibilities (Hamel 1991, Powell 1998). Despite the high rate of engaging in alliances, firms often fail to get the results they had hoped for. Several studies have shown that the rate of success of strategic alliances is fairly low - on average between 30-50 percent (Spekman et al. 1996, Duysters et al. 1999).

As Stuart (2000) notices, it is remarkable that current literature has focused so much on structural characteristics of the alliance to explain alliance success and that some partner-specific characteristics have been relatively neglected. Alliance success has often been assigned to the type of alliance, the strategic or cultural *fit* between the partners, the status of the partners and to the level of trust, commitment and communication (e.g. Larson 1992, Das and Teng 1998, Kale, Prashant et al. 2000). We argue that alliance success can be influenced to a great extent by specific firm characteristics and more specifically by the degree to which partners are adept at managing their alliance processes, referred to as their level of *alliance capability*. Alliance capability is defined by Draulans et al. (2003) as the degree to which a company is capable to create successful alliances, based on internal learning processes on alliance management and the capability to leverage alliance knowledge within the company.

According to Möller (1999, 2003) there are four levels of network management: network visioning, net management, portfolio management and relationship management. The first three levels emphasize the importance of value systems and the identification of key actors, the way a company should mobilize and coordinate different value nets and the choice it has to make as to which net(s) it wants to belong now and in the future. The fourth level considers how single strategic relationships can be created, managed and controlled efficiently. Alliance capability can be situated at this last level. Research on alliance capability is relatively new and deals with the importance of internal processes, tools, specific functions and/or structures that aim to capture and diffuse alliance knowledge that is gathered through alliance experience. This way firms can leverage knowledge on the alliance management process which will not only improve the firm's ability to manage a single relationship but also its management ability of the portfolio of all relationships (Gemunden and Ritter 1997). The concept is rooted in theoretical perspectives and concepts that put forward knowledge and competence creation, accumulation and integration

as a central issue, such as the *competence based view of the firm* (Sanchez et al. 1996), the *learning organization* (Levitt and March 1988), *absorptive capacity* (Cohen and Levinthal 1990, Zahra and George 2002, Lane et al. 2006) and the *Knowledge- Based Theory of The Firm* (Grant 1996). The common idea behind these theories is that competitive advantage is closely linked to the organizational knowledge or competences a firm possesses.

Authors within the field of alliance capability have investigated how firms can improve alliance outcome through sound alliance management and by internalizing the firms' acquired experiences. Up to now the focus has been put mainly on the role of alliance experience (e.g., Zollo, Maurizio et al. 2002, Hoang and Rothaermel 2005) and on the importance of the alliance function (e.g., Spekman et al. 1996, Dyer et al. 2001, Kale et al. 2002, Hoffmann 2005). This study aims to deepen the concept of alliance capability in several ways. First, we offer a literature review of the concept of alliance capability by integrating several insights about alliance capability from various research streams. Currently there seems to be a gap between the body of work within the IMP literature and that of the strategic management community with regard to this topic. Second, we identify gaps in the literature and put forward conceptual extensions and suggest possibilities for future research. Spekman et al. (1998) points out that there is little research on the various capabilities which are important throughout the different stages of the alliance life cycle. Instead of describing the concept of alliance capability as one meta skill at corporate level, we aim to break it down into different "micro competences" at different stages in the alliance life cycle (ALC). Although the concept of the ALC is well-known (e.g., Kanter 1994, Das and Teng 2002), the authors know of little research on the specific demands, skills and competences that are required during the different stages.

In the next paragraph we will elaborate on the concept of alliance capability. The relation between alliance capability and alliance experience will be explained in more detail. Next, we propose a five-stage model of the alliance life cycle process. Finally, we will specify stage-specific competences and provide an overview of relevant tools that firms can implement in order to improve their alliance management process. By specifying the stage-specific competences and tools, we aim to advance the current literature on alliance capability. Alliance literature has elaborated on the *content* of alliance capability, while the *process* of how to build alliance capability has been somewhat neglected. By providing a model with a clear overview on stage-specific tasks and goals, we aim to open the black box on the capability- building process and provide managers with a tool that can help them with setting up successful alliances. We believe these insights are highly relevant in the B2B-market context, where alliances - and therefore also alliance management - have gained considerable importance over the past 20 years.

2 The concept of alliance capability and alliance experience

In alignment with the *competence based view of the firm* we aim to reveal the capabilities which are needed to successfully manage the alliance process. According to the *competence*

based view of the firm, as developed by Sanchez (1996), a competence can be described as the “ability to sustain the coordinated deployment of assets in a way that helps a firm to achieve its goals” (Sanchez et al. 1996, :8). Both tangible and intangible assets can be distinguished. Capabilities form a special category of intangible assets and are defined as “repeatable patterns of action in the use of assets to create, produce and/or offer a product to a market...Capabilities arise from the coordinated activities of groups of people who pool their individual skills in using assets” (Sanchez 2004). Based on these authors and other literature on competences and (dynamic) capabilities (Nelson and Winter 1982, Kogut and Zander 1992, Teece et al. 1997), we argue that the concept *alliance capability* is the most accurate, as it specifically refers to the firms’ deliberate and emergent learning processes with regard to alliance management, which are translated in firm-specific routines. Furthermore, the use of the word “capability” implies that the concept is understood as a dynamic process and a higher order resource (Amit and Schoemaker, 1993 and Teece et al., 1997). This description is similar to discussions on competencies as series of activities and a process (Li and Calantone, 1998; Winter 2003).

With respect to alliance learning and the transfer of knowledge, authors within network literature have focused primarily on circumstances and factors that facilitate the improvement of the *interorganizational* transfer of knowledge and learning between firms. The concept of “learning races” (Gulati, Ranjay et al. 2000), which refers to the firms’ efforts to outlearn their partners, is a typical example of this focus. Although there has been research on the impact of *alliance experience* on alliance outcome (e.g. Zollo, Maurizio et al. 2002, Hoang and Rothaermel 2005, Sampson 2005), with mixed results, few authors have investigated the *intraorganizational* alliance knowledge processes, which aim at gathering and diffusing knowledge on the alliance management process within the firm. The terminology on these processes has been very diverse, the most frequently used terms are *alliance competence* and *alliance capability* and often the two terms are used intertwined. Table 1 summarizes the studies on this topic and shows the different concepts and definitions that have been used. In this paper we will adopt the definition of Kale et al. (2002, : 750), who define alliance capability as *the firm’s ability to effectively capture, share and disseminate the alliance management know-how, associated with prior experience*. Central to this definition is the idea that companies need to accumulate and spread alliance knowledge, which is gathered through alliance experience.

In general, the literature on alliance capability can be divided into two groups: studies on alliance experience (seen as an antecedent of alliance capability) (Anand and Khanna 2000, Rothaermel and Deeds 2006, Draulans et al. 2003) and studies on how firms can integrate and spread alliance know-how (usually these studies have focused on the importance of the alliance function and on the alliance tools and mechanisms a firm can adopt) (e.g. Spekman et al. 1996, 1998; Kale et al. 2001, 2002; Heimeriks, 2007). According to Kale et al. (2002), organizational capabilities result out of recombining and/or integrating knowledge within the firm. This knowledge is created by learning processes that take into account past actions, the effectiveness of those actions and future actions. When applied to the context of alliances, one can assume that alliance capability can be improved by installing

Author	Year	Term	Definition
Ritter et al.	1999, 2003	Network Competence	A company-specific ability to handle, use, and exploit inter-organizational relationships
Spekman et al.	2000	Alliance Competence	Alliance competence is partly a function of individual skills and capabilities and firm-level attributes that enhance, encourage and support alliance-like thinking and behaviour throughout the firm.
Lambe et al.	2002	Alliance Competence	The organizational ability for finding, developing and managing alliances.
Kale et al.	2002	Alliance Capability	The firm's ability to effectively capture, share and disseminate the alliance management know-how, associated with prior experience.
Rothaermel, Deeds	2006	Alliance Management capability	A firm's ability to effectively manage multiple alliances.
Heimeriks, Duysters	2007	Alliance Capability	The degree to which firms are able to use mechanisms to integrate alliance related knowledge which enable them to create routines for managing alliances.
Kale et al.	2007	Alliance Capability	The firm's ability to learn and accumulate alliance management know-how.

Table 1: Alliance capability: concept review

mechanisms and routines that capture and spread alliance know-how, which can be created through alliance experience. Figure 1 summarizes this process and shows the relation between the different concepts.

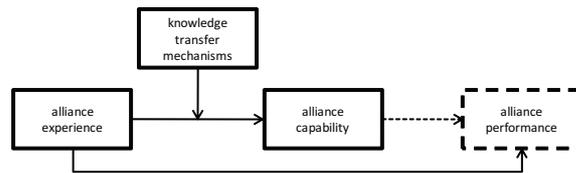


Figure 1: The Alliance Capability Process

The focus of this paper will lie on the arrows and building blocks that are presented in bold, the dashed lines and blocks are added for the completion of the model. Several authors have investigated the impact of alliance experience on alliance performance (e.g. Anand and Khanna 2000, Sampson 2005, Rothaermel and Deeds 2006). Most studies have focused on the direct impact of alliance experience on alliance outcome, without taking into account the capability-building ability of the firm. A notable exception forms the study of Heimeriks et al. (2007) who have investigated both the direct effect of alliance experience on alliance outcome and its indirect effect via the contribution to alliance capability. They empirically tested these relations and found evidence that both experience and alliance capabilities contribute to alliance success. They found that the simultaneous development of the firm's alliance experience and learning mechanisms (in figure 1 referred to as "knowledge transfer mechanisms")- which both are needed to build alliance capability will improve the alliance performance of the firm. In this paper we will specifically emphasize the process through which companies can build their alliance capability, by focusing on stage-specific and meta tasks and related learning mechanisms which can improve the alliance capability of the firm.

Alliance experience has become a central theme within the alliance capability literature. Scholars have used alliance experience both as an antecedent and proxy for alliance capability. In line with previous research we describe *alliance experience* as the know-how on alliances which is generated through the firm's engagement in prior alliances (Gulati 1995, Kale et al. 2002, Heimeriks and Duysters 2007, e.g.). Often alliance experience has been measured as the number of alliances the firm has been involved in during a period of time (Draulans et al. 2003, Sampson 2005, Heimeriks and Duysters 2007, e.g.). According to Simonin (1995), alliance experience will contribute to the rise of alliance capability, because experience is the source of knowledge on alliance processes. This idea adheres closely to the concept of "learning by doing" and to the "organizational learning theory" (Levitt and March 1988) which - applied to alliance management - predicts companies can learn to improve the management of alliances through repetition.

Several studies have analysed the direct effect of alliance experience on alliance outcome and have found mixed results. Some studies have emphasized a strictly positive relationship such as Shan et al. (1994), who showed that high-tech start-ups with prior alliance experience managed to increase their innovativeness. Experience seems to play a significant role in joint venturing, especially in R&D - joint ventures, where firms with more experience are found to create more value than firms without previous alliance experience (Anand and Khanna 2000).

While the previous studies found a positive linear relationship between prior alliance experience and alliance outcome, Rothaermel and Deeds (2006) and Draulans et al. (2003) find that there are diminishing returns to alliance experience: increases in alliance experience do not continuously improve alliance performance. The research of Rothaermel and Deeds (2006) links innovativeness of bio-tech firms to alliance experience and shows that there exists an inverted U-shape relationship between the number of alliances the biotech firm entered and its performance: after a certain threshold there is a negative return on alliance experience. Several reasons can be found: firstly, there is a limitation with respect to dedicated financial and human resources, the more alliances a firm enters, the more these resources get stretched to the maximum. Secondly, firms may become stuck in a competency trap (Quynh and Martens 2008). They have developed routines, processes or structures to deal with certain specific alliances and fail to adapt to changes in the environment (inertia). Thirdly, it is possible that firms enter the most promising alliances first, this way limiting the alliance opportunities with other partners. The disappointing outcome of the subsequent alliances may be due to the fact that these alliances only represent "second best" options (Hoang and Rothaermel 2005). Finally, companies may become less eager to learn from new experiences. The incentive to learn from new alliances may diminish over time, leaving them less "open" to new learning possibilities.

The studies mentioned above have investigated the relationship between experience and alliance outcome, but do not analyze the relationship between experience and alliance capability or how experience actually affects alliance performance. The link between experience, alliance capability and alliance performance has not yet been clearly defined (Rugman, 2002). Scholars have emphasized that experience in itself will not cause per-

formance improvement, such as suggested in studies on the “experience curve”. The underlying explanation is that performance improves due to learning effects, caused by experience. Organizational learning occurs through the firm’s inferences of past experiences and the translation of these inferences for future actions (Levitt and March 1988). These inferences are firm-specific and can explain the differences in alliance outcome.

Moreover we want to emphasize that alliance *capability* and alliance *outcome* are two different constructs. In several studies, these two concepts are either used as synonyms or alliance outcome is used as a measurement instrument of alliance capability (Rothaermel and Deeds 2006, e.g.). We would like to stress that alliance outcome can be positively *influenced* by the presence of alliance capability (Kale and Singh 2007, e.g.) but that there is no clear linear relationship. Alliance experience is to be viewed as an *antecedent* of alliance capability - and not a proxy - of alliance capability. By the use of learning mechanisms that capture and disperse the knowledge that stems from alliance experience, companies can get better at successfully managing their alliance portfolio. Therefore, experience will only result in improved alliance outcome if the knowledge that flows from experience is effectively captured and dispersed. We argue that alliance experience is a necessary but not sufficient condition for alliance success. We argue that the constant monitoring and enhancing of the alliance management processes is crucial for an improved alliance outcome.

3 The Alliance Life Cycle

Up to now, alliance capability has often been defined at corporate level, where it has been described as a firm’s ability to successfully manage alliances, based on the collection and dispersion of alliance know-how. In this section we will analyze the process of alliance capability-building more in-depth. Alliance capability can be viewed as a meta skill, which can be divided in sub-capabilities according to the different stages of the alliance life cycle (ALC). For this purpose, we need a clear overview of the different goals which need to be achieved at each stage and the tasks which need to be accomplished in each stage. The ALC captures the stages through which alliances emerge, grow and dissolve. Although the Life Cycle approach is nothing new in marketing and management literature (for example the Product Life Cycle), the concept of the ALC has not yet been clearly defined.

3.1 Stages in the Alliance Life Cycle

In figure 2, we offer a literature review on the ALC. Over the years different models of the ALC have been conceived, distinguishing different stages and describing these stages by various levels of abstraction. Each stage is presented as a discrete event in a linear series of events, but in business practice stages can blend into each another. As such, it becomes hard to define strict boundaries between stages. Based on the literature review we distinguish five stages, in each of which a couple of key-activities need to be fulfilled.

- *strategy stage*: firms need to develop an alliance business case in which they will analyze the specific need of the firm and the costs and benefits of fulfilling this need via an alliance (Dyer et al. 2001). Moreover, the company needs to analyze the fit of the alliance with the overall corporate strategy and vision.
- *search stage*: this stage comprises the firm's efforts to find and select a partner. Based on the firm's needs and organizational profile, firms need to find a suitable partner that can fulfill their needs. Firms will scan the environment for potential partners, create a short-list and select one (or more), based on an in-depth analysis of the profile of the partner. Both cooperative compatibility (e.g. shared vision, the will to collaborate and commit and the presence of alliance *spirit* (Ritter 1999, Ritter and Gemunden 2003, Spekman et al. 2000)) and business compatibility (e.g. reconcilable goals, complementary resources, strategic, operational and cultural fit) need to be explored (Chan and Harget 1993, Douma et al. 2000, Bierly and Gallagher 2007)
- *creation stage*: firms will start the negotiations which will determine the exact conditions of the alliance. During this stage companies will approach potential partners, argue, bargain and negotiate on terms and procedures. Both parties have to decide on the value of the alliance and the contributions (e.g. human, financial, material and/or technological investments) they are prepared to make. Furthermore, the financial (determination of royalties and milestones, profit sharing, etc.) and legal framework (choice of governance structure, arbitration clauses, exit clauses, etc.) need to be elaborated (Chan and Harget 1993, Das and Teng 2002). The agreement on the deal will impose a number of duties and rights on the organizations (Mouzas and Naud 2007).
- *operational stage*: firms need to manage the day-to-day operations of the collaboration. Resources and staff need to be assigned to the alliance. In this stage conflicts (e.g. on money issues, operational procedures, interpersonal or intercultural differences (Kanter 1994)) are most likely to occur and need to be resolved (Chan and Harget 1993).
- *evaluation stage*: During this stage, firms need to compare the original alliance objectives with the objectives of the alliance. Several performance indicators can be taken into account (for example: evaluation of the collaboration process, the commitment of the partner, learning possibilities), as financial measures are not always sufficient to capture the value of the alliance (Lorange and Roos 1992). This stage does not necessarily take place at the end of the alliance life cycle after all other stages have been completely terminated. During each of the previous stages, firms should evaluate the alliance and decide on its future. Depending on the result of the evaluation, several options are possible: an alliance can be continued, renegotiated, spun off or ended or a mixture of the previous options (for example first renegotiated and then later spun off). Alliance renegotiation or termination does not necessarily imply that the alliance has failed. It could for instance that external (for example changes in the competitive environment) or internal (for example a technological

breakthrough in one of the companies) conditions have changed and renegotiation or termination is just the best option for the alliance (Das and Teng 2002).

In order to be able to define the stage-specific tasks which need to be accomplished, uniformity between the different ALC models is necessary. Based on the five stages mentioned above, we have analyzed the different ALC models and have incorporated the existing models into our ALC model. By comparing the descriptions the authors gave for each of the stages in their models, we could either incorporate two or more stages into one of our five stages or we could stretch a stage over several stages in our model. Table 2 shows how each of the existing models fit within each of the five stages.

Author	Year	ALC Stages	Strategy Stage	Search Stage	Creation Stage	Operation Stage	Evaluation Stage
Chan and Harget	1993	7	Strategy	Search and Dialogue	Negotiation and Formation	Operation	Termination
Van de Ven et al	1994	4		Negotiation and Commitment		Execution	Evaluation
Kanter	1994	5		Courtship	Engagement	Housekeeping and Learning to collaborate	
Newman	1995	3		Partner Selection	Planning and negotiation	Implementation and control	
Spekman et al.	1996	7	Anticipation	Engagement and Valuation		Coordination and Investment	Stabilization and Decision
Das and Teng	1997	7	Alliance Strategy	Partner Selection	Negotiation and Formation	Operation	Evaluation and Modification
Brouthers et al.	1997	5	Selecting Mode	Locating Partners	Negotiation	Management	Evaluation
Ford et al.	1998	4	Pre-relationship		Exploratory	Development and Stable	
Dyer et al.	2001	5	Alliance Business Case	Partner assessment and selection	Negotiation and governance	Management	Assessment and Termination
Das and Teng	2002	3		Formation		Operation	Outcome

Table 2: Overview of ALC models

Based on the fit between the different models, we were able to integrate definitions, descriptions and relevant tasks for each of the five stages. In the next section we will elaborate on this.

3.2 Alliance Life Cycle: stage-specific capabilities and skills

In this section we break down the concept of alliance capability in different micro-capabilities, which are stage-specific. In order for companies to be able to develop above-average levels of alliance capability, companies need to comprehend, support and execute the key tasks and skills of the different stages. Gemunden and Ritter (1997) point out the need for the identification of critical resources, activities and tools to create “best practices” with regard to network capability. Based on the literature review, we were able to extract the most important tasks that can contribute to each of the five capabilities. Table 3 presents an overview of the stage-specific goals and key skills in each stage of the ALC.

Stages in the Alliance Life Cycle							
	Strategy stage	Search stage	Creation stage	Operation stage	Evaluation stage		
Goal	Strategic alignment between alliance business case and corporate strategy	Selection of a suitable partner	Realize agreement on the alliance conditions and legal elaboration	Effectively manage day-to-day operations	Compare alliance goals and outcomes and decide on alliance future		
Tasks	<ul style="list-style-type: none"> • evaluate alliances as a strategic option • determine fit with overall strategy • determine fit with overall strategic vision 	<ul style="list-style-type: none"> • create shortlist of potential partners • screen for business compatibility • screen for compatible goals • due diligence 	<ul style="list-style-type: none"> • quantify goals • determine evaluation measures • determine both parties' contributions to the alliance • define legal clauses 	<ul style="list-style-type: none"> • ensure operational and cultural integration • trust building • determine resource allocation 	<ul style="list-style-type: none"> • evaluate outcome • evaluate collaboration process / results • consider common and private benefits • determine the future of the alliance 		

Table 3: Alliance sub-capabilities

In order to create more knowledge on the alliance management process, firms need to amplify and internalize the knowledge held by individuals in the organization (Nonaka 1994). Several studies have already emphasized the benefits of intrafirm knowledge and competence transfer (Argote et al. 2000). By building operational routines, that enable the firm to develop a collective understanding about the execution of tasks, firms can increase their performance significantly (Nelson and Winter 1982). Zollo, Maurizio et al. (2002, :709) investigated the role of *interorganizational* routines on performance and concluded that “...*Routines may contribute to the performance of the alliance by facilitating the information gathering, communication, decision-making conflict resolution, and the overall governance of the collaborative process*”. This conclusion can easily be transferred to an *intrafirm* context, by assuming that firms will improve their alliance success through installing *learning mechanisms* that can capture and spread the knowledge on the alliance management process. If an organization wants to implement a knowledge management program in which they aim for the transfer of knowledge among and between employees and the firm, Leavitts (1965) model of organizational change can provide insight. The model breaks the organization down into four interacting components (task, technology, people and structure) and requires the change agent to examine the impact from a human, technological and structural perspective. The model suggests that the four components must be coordinated and balanced to create an effective knowledge management culture (Grant and Mergen 1996, Hurley and Green 2005). The major aim is to improve task performance, i.c. the management of the alliance. By providing each stage with the right structure, technology and people, firms should be able to support each specific capability and hence also the alliance capability of the firm.

- *Structure* : in the model *structure* is defined as a system of communication, system of authority, and system of workflow. Several models have been proposed as an attempt to depict these organizational relationships see e.g.,Mintzberg). Mintzberg (1979:2) defines *structure* as the sum of the ways in which it divides labor into distinct tasks and then achieves coordination among them. In alliance literature, the focus has

been put mainly on functional and staffing solutions. The alliance function can be considered as the *linking pin* of organizational knowledge on alliances. It can act as a focal point of learning and leveraging of lessons from prior and ongoing alliances, as a visible point of contact for external parties and it creates legitimacy which is needed to attract the necessary resources to the alliance (Kale et al. 2002). The need for a separate alliance function and especially for an alliance manager has been underlined several times in the literature (Spekman et al. 1996, 1998, Dyer et al. 2001, Kale et al. 2002). Spekman et al. (1998) describes the changing role of the manager during the alliance life cycle (see tabel 4). In each of the seven distinguished stages , they propose a different role for the manager, according to key activities that have to be performed.

The alliance life cycle	Anticipation	Engagement	Valuation	Co-ordination	Investment	Stabilization	Decision
Roles of the alliance manager	Visionary	Strategic sponsor	Advocate	Networker	Facilitator	Manager	Mediator

Table 4: Changing roles of the alliance manager (Spekman et al., 1998)

Hoffmann (2005) investigated the multi-alliance management practices of 25 leading European companies and found that most of them have created, in varying degree, very specialized alliance roles and positions. In addition to the function of *alliance manager* (the operative executive), companies have installed *sponsors* (responsible for the alliance at senior executive level), *internal consultants* (a pool of internal specialists who provide technical support) and a *relationship manager* (contact person for a specific alliance partner at operational level). At BU level they have installed an *alliance coordinator* (internal contact person or coordinator for an alliance or all alliances within a specific field of business), an *alliance governor* (non-operative supervisor who supports and monitors the co-operation unit) and a *vice-president of alliances* (head of the central alliance department). We would like to emphasize the importance of a structural position that supervises the total alliance process at alliance and BU level, which we will call a *process manager*. Given the wide variety of specialist skills and knowledge that is needed to successfully finish all stages of the alliance, it is virtually impossible that one person can manage all aspects of the process. Nevertheless, it is necessary that one (or more) person(s) maintain(s) the overview over the different stages. This person needs to closely monitor the total alliance process, making sure the right people are involved in each stage and sufficient resources are dedicated to specific alliances.

- *Technology*: Leavitt (1965:1144) defines technology as “...direct problem-solving inventions like work-measurement techniques or computers or drill presses.” He also notes “that both machines and programs may be included in this category.” Technology is thus to be understood as all management systems, tools and processes that can support the creation and transfer of alliance knowledge. Firms can use several tools to provide guidelines and to encourage learning about alliances, such as written policies/ procedures, job rotation, work schedules, databases, intranet, codified

best practices, network software, creation of knowledge networks, culture programs, brainstorm sessions, etc. (Alavi and Leidner 2001, Heimeriks and Duysters 2007). Also evaluation techniques reside under this category. Through evaluation of both the ongoing alliance and past alliances, firms can draw conclusions with regard to the future of the ongoing alliances. Several techniques can be used such as benchmarking, checklists, individual or cross-alliance evaluation, collective assessments (with the partner company) and *zero blame reports* (partners assess each other on a number of criteria without blaming each other (Spekman, 2000)). Hoffmann (2005) proposes a model whereby firms need to evaluate alliances on three levels: individual alliance level, portfolio at business level and portfolio at corporate level. Although the focus of these evaluations has been put mostly on financial (such as profit or cash flow) and strategic (such as goal attainment) measures, other factors need also be taken into account such as relational factors (trust, communication, commitment), the partners' expertise in certain domain (for example technological or market knowledge) and input factors (staff, investments etc.).

- *People*: By dedicating people in the alliance management process that possess the right skills, knowledge, attitudes and competences, firms can improve their alliance capability. This requires that workers create tacit knowledge through their routine tasks (i.e. learning-by-doing) and internalize that knowledge so that it becomes explicit (i.e. so they can share it with others). This sets the stage for sharing the information through structural mechanisms. Aside from learning-by-doing, firms can enhance knowledge creation and transfer by offering employees the opportunity to learn more on alliances or to share insights and ideas. Alliance management training can help employees to gain more insight in -for example- the critical success factors of alliance management, the company's (alliance) strategy, the company's goals or it can help to develop certain skills such as negotiation skills or evaluation skills. Both in-house and external training can be useful and several training possibilities are available such as seminars, workshops, discussion forums, role-playing, group discussions, case reviews and lectures. Firms can also involve external parties (Prevot 2006) during different stages of the alliance process to provide specialist knowledge on certain aspects of the process or to complement some of the alliance practices that were mentioned before. Examples are consultants, mediators, alliance partner search offices, financial experts and legal experts. Although this may seem appealing, we would like to emphasize that firms need to build their *own* capabilities and not simply rely on external parties. The services that these external parties provide will however only lead to competitive advantage if they can be combined with unique internal skills and knowledge on the process.

Based on this classification, our previous table can be extended by inserting the three organizational approaches in each of the stages. By doing this we try to provide insight in the methods and mechanisms a firm can use to deploy or transfer capabilities. In table(5), we have highlighted some of the methods and mechanisms a firm can implement according

to each of the three approaches. We emphasize that a good balance between the three approaches is crucial to obtain a good result.

- *strategic capability*: a structural support can be given by installing a dedicated alliance function. In this stage, the alliance manager needs to fulfill the role of visionary and sponsor (Spekman et al. 1998). He will formulate, articulate and promote the alliance to both CEO level and the operational level. To ensure communication between strategic units, who may initiate the idea of alliance strategy, and the operational units, structural linkages between the different departments need to be encouraged. Firms can use several guidelines to simplify the strategic decision-making. Interdepartmental brainstorm sessions and meetings (Prevot 2006) can create new insights on market developments or opportunities which firms can achieve through alliances. A strategic grid that captures the firms strategic goals (in products, markets,...) and signals priorities (Which are the top growth strategies of the firm? Which are viable options? which options will not be taken into account?) can serve a guideline in the process. A handbook or policy on how the firm thinks about alliance strategy within the firm and or the BU and a intranet site that provides people with adequate information can improve the task execution. For people to be able to think strategically about alliances, a sound training in strategy, management and alliance is necessary.
- *search capability*: to encourage people throughout the company to be alert for business and partner opportunities and to approach and screen potential partners, several mechanisms can be used. An alliance manager that sponsors not only specific alliances, but the general idea of partnering, and who encourages people to be constantly on the watch for opportunities can help in creating the right culture. An effective and up-to-date alliance database that contains information on other companies (their core business, patent information, research domains, financial information etc.) is crucial here. To perform effective and thorough due diligence, checklists and screening procedures are needed. This ensures a standard screening method (De Man and Duysters 2005, Bierly and Gallagher 2007). Intranet can be used to provide the people with the strategic grid, which can serve as a guideline during their search. In order to create the atmosphere of opportunity seeking behavior and out-of-the box thinking, people can be trained in open-system thinking and be encouraged to actively participate in seminars, conferences, trade fairs etc. To ensure compatibility between the partners, competence training or information sessions (what are *our* core competences and which competences are we looking for?) can be helpful. People need be kept up to date within their own specialist fields (through training, literature, journals, meetings) to make sure they are able to accurately screen the partners (Prevot and Spencer 2006).
- *creative capability*: this capability relies heavily on specialists within or outside the company. Legal and financial specialists can either be involved from other departments in the company, through structural linkages, or can be bought on the market

when internal specialists are not available. The firm can provide procedures on the negotiation process (the way things are negotiated) and can provide payment (guidelines on royalties, upfront fees, etc) and legal (guidelines on the governance of the alliance, exit clauses etc.) policies. A database that captures previous agreements and conditions and deal information on the sector, can provide employees with guidelines during the negotiation process (Heimeriks and Duysters 2007). People do not only have to be trained in specific domains (alliance finance, alliance legal governance), but need also be aware of the intercultural differences that exist between entities with regard to negotiation style (De Man and Duysters 2005).

- *operational capability*: a relationship manager (Hoffman, 2005) at operational level, that can serve as a contact person for the alliance partner, can help to create trust and good communication between companies. Furthermore the alliance manager in this stage needs to ensure commitment of all parties, oversee the operation of the on-going alliance and perhaps mediate conflicts between partners or between people involved in the alliance. If necessary, assistance of consultancy offices that are specialized in alliance management can be used. Structural linkages with the overall operational core of the rest of the company is necessary, to guarantee the encapsulation of the alliance in current operations. To facilitate day-to-day management of the alliance, project management techniques (e.g., project charters, status reports, communication plans) can be used. People need to be trained in these techniques and be given insights on intercultural differences with regard to operational procedures.
- *evaluation capability*: the firm must provide structural communication linkages to people in all the stages of the ALC need to be ensured. This will contribute to a thorough and multi-dimensional evaluation, where several aspects of the alliance are analyzed. A database with previous evaluations and lessons-learned needs to be constantly kept up-to-date and actively used. In order to be able to compare alliances, standard evaluation sheets and metrics can be used (De Man and Duysters 2005). Metrics should be used for financial outcomes as well as for relational and operational factors. Firms can evaluate individual alliances, compare several alliances the company has engaged upon or can stimulate joint evaluations, where partner companies are actively involved (Draulans et al. 2003). An example are the Zero-blame reports (Spekman,2000) in which companies are encouraged to provide feedback on the alliance as a whole, without *blaming* each other for shortcomings. To evaluate outcomes, people need to possess analytical skills which enable them to extract crucial information out of a case and be able to interpret the results in the context of the alliance. Synthetic skills are also necessary to be able to see the bigger picture, and to comprehend and transfer the most important lessons that can be learnt from the experience. Therefore, firms need also to foster a learning attitude, which encourages people to critically evaluate events and to be open and alert for lessons that can be drawn.

ALC	Strategy stage	Search stage	Creation stage	Operation stage	Evaluation stage
	Alliance capability				
Capability	Strategic capability	Search capability	Creation capability	Operational capability	Evaluation capability
Goal	Strategic alignment between alliance business case and corporate strategy	Selection of a suitable partner	Realize agreement on the alliance conditions and legal elaboration	Effectively manage day-to-day operations	Compare alliance goals and outcomes and decide on alliance future
Tasks	<ul style="list-style-type: none"> ● evaluate alliances as a strategic option ● determine fit with overall strategy and vision 	<ul style="list-style-type: none"> ● create shortlist of potential partners ● screen for business compatibility ● screen for compatible goals 	<ul style="list-style-type: none"> ● quantify goals ● determine evaluation measures ● determine both parties' contributions to the alliance ● define legal clauses ● trust building ● determine operational clauses 	<ul style="list-style-type: none"> ● ensure operational and cultural integration ● trust building ● determine resource allocation ● operational management 	<ul style="list-style-type: none"> ● evaluate outcome ● evaluate collaboration process/results ● consider benefits for own company and for partner ● determine the future of the alliance
Structure	alliance process manager				
	<ul style="list-style-type: none"> ● alliance manager (as visionary and sponsor) ● alliance sponsor ● communication linkages between strategic and operational BUs 	<ul style="list-style-type: none"> ● alliance manager (as sponsor) ● structural (communication) linkages with strategy unit ● involvement of external specialists: alliance search bureaux 	<ul style="list-style-type: none"> ● alliance manager (advocate role) ● involvement of external specialists: lawyers, mediators and/or accountants ● linkage structures with legal and financial department need to be involved 	<ul style="list-style-type: none"> ● alliance manager (networker, facilitator, mediator) ● involvement of external specialists: management consultants ● linkage structures with current operations 	<ul style="list-style-type: none"> ● alliance manager (mediator) ● structural linkages to people involved in all of the ALC stages
Technology	<ul style="list-style-type: none"> ● strategic grid with priority rankings ● policy on alliance strategy ● inter-departmental meetings ● intranet 	<ul style="list-style-type: none"> ● alliance database ● social network software ● screening procedures ● due diligence checklists ● partner selection programmes ● intranet 	<ul style="list-style-type: none"> ● alliance database ● procedure on alliance negotiation ● payment policies (royalties, fees etc.) ● financial tools (for risk analysis, valuation, ...) ● legal policy ● intranet 	<ul style="list-style-type: none"> ● project management 	<ul style="list-style-type: none"> ● alliance database ● alliance metrics ● evaluation checklists (for financial and strategic performance, relational factors) ● benchmark techniques ● cross-alliance evaluation ● individual alliance evaluations ● joint evaluation (zero blame reports) ● intranet
People	<ul style="list-style-type: none"> ● strategy training ● management training ● alliance training 	<ul style="list-style-type: none"> ● training in open system thinking ● training in competence analysis ● skill training 	<ul style="list-style-type: none"> ● training in legal issues ● negotiation skill training ● training in financial issues ● training in intercultural differences (negotiation) 	<ul style="list-style-type: none"> ● training in conflict management ● training in intercultural differences (operations) ● project management training 	<ul style="list-style-type: none"> ● training in analytic skills ● training in synthetic skills ● developing learning attitude

Table 5: Table: Transfer mechanisms

In addition to stage-specific capabilities, a company should also manage organizational context variables, which do have an impact on the global alliance life cycle. In order to enhance alliance knowledge creation and transfer, the firm needs to create a setting in which communication, openness and learning is encouraged. Although these organizational characteristics do not make up the core of this paper, we briefly mention some of them. Ritter et al. (1999, 2002, 2003) refer to these context variables as *antecedents for network competence* and have found empirical evidence that these positively contribute to alliance capability. An important condition for the improvement of alliance capability is the firm's *commitment* to their alliance-portfolio by investing in internal resources that support the alliance management. Human resource management has to be aligned with the alliance strategy of the firm. For example, personnel can be selected and evaluated based on their network-orientation (their focus on network abilities and experience) and social skills (e.g., empathy, emotional stability, communication ability) in order to further enhance information exchange and alliance learning (Spekman et al. 2000). The firm needs to provide financial, physical (computers, board rooms, etc.), human and informational resources, which will enable the execution of the management tasks (Ritter, 1999). Firms can also improve their alliance capability by stimulating *communication* between members of the organization. Both formal and informal information sharing can lead to new insights in the alliance management process. Ritter (2003) has shown that firms with higher levels of integrated communication structures (intensive cross-departmental communication) managed to achieve higher levels of alliance capability, than firms with only limited communication integration. Firms can foster inter-departmental communication by installing both formal mechanisms (such as brainstorm sessions, evaluation meetings, cross-functional seminars and workshops, intranet and job rotation) and allowing informal information-exchange. Open communication also resides in a broader context, hence an open corporate *culture*. Ritter (2003: 472) describes an open corporate culture in terms of "emphasizing flexibility, spontaneity and individuality" where cooperation, tolerance and respect for other parties are important values.

4 Conclusion

The aim of this paper was threefold. First, we have presented a comprehensive literature review on the concept of alliance capability in which we have incorporated both strategic management and IMP literature. From this review it became clear that too little attention is being dedicated to the building process of alliance capability. Although several authors have investigated the role of alliance experience, the importance of an alliance function and the antecedents of alliance capability, research has not yet focused in detail on the various capabilities which are important throughout the different stages of the alliance life cycle. We acknowledge the importance of the general organizational context, but stress that there is a need to look into the specific skills and tasks that need to be fulfilled in each stage in order to improve alliance capability. Therefore, in the second part of this paper, we have examined the different components of alliance capability. We have

distinguished five sub-capabilities, which are each linked to a stage in the alliance life cycle: a strategic capability, search capability, creative capability, operational capability and evaluation capability. Based on a literature review, we were able to describe the most important tasks that need to be executed during each stage of the ALC. Furthermore we have underlined the importance of a *process manager*, who supervises the global alliance management process and guarantees that the right people are involved in each stage and sufficient resources are dedicated to specific alliances. Finally, we have extended this model by describing several (learning) mechanisms that can support each of the five sub capabilities. We have provided recommendations in three fields: structures, technologies and people. We argue that in order to build alliance capability, a firm needs to provide the right structures and management tools/ techniques for each stage in the alliance process and select, train and evaluate people based on both their specific and network skills. We have placed our model in a broader organizational context, by briefly touching upon some organizational variables which are important for the creation of alliance capability.

This study tries to complement earlier studies on alliance capability - that have mostly considered alliance capability as one meta-capability at corporate level- by looking into the requirements of the different sub stages of the alliance life cycle. In each of these stages, specific tasks need to be fulfilled and specific goals need to be attained, therefore in each stage a company needs to build a specific capability. A company can then improve the effectiveness of their alliance management by building each specific capability, by building organizational linkages between the capabilities that ensure a solid global process management (for example through the global process manager) *and* by providing an alliance-oriented structure and culture.

4.1 Lessons for Managers

Managers should be aware that in order to build an effective alliance management, firms need to engage in actively building alliance capability. By capturing and sharing alliance management know-how and by learning from previous alliance experience, firms can improve their alliance management process, which will contribute to alliance success. In this paper we stress that alliance capability can be improved at three levels:

- Macro or corporate level: create an alliance-oriented structure and culture that encourages collaboration, communication, learning and an open mindset towards alliances.
- Meta or alliance and/or alliance portfolio level: provide structural linkages that enable effective management of the total alliance process. A global alliance manager can act as a linking pin, making sure the right people are involved at the right time, attracting resources and gathering and dispersing knowledge over the total alliance process and/or a number of different alliance cycles.

- Micro or alliance stage level: in each stage of the alliance life cycle, specific tasks need to be fulfilled and specific goals need to be attained. Therefore in each stage a company needs to build a specific capability. We have found five sub capabilities (a strategic, search, creative, operational and evaluation capability) and propose a number of tools that can help the firm support each of these sub-capabilities.

We emphasize the importance of the micro level, as in the past too little attention has been paid to this aspect of alliance capability. Firms need to be aware of the very diverse demands that are posed upon the firm in each stage of the alliance life cycle. Managers should actively manage each of the stages and build the alliance-specific capabilities by providing the adequate structures, management tools/techniques and people in each stage. Alliance experience creates a great potential to internally build, adapt and review alliance management systems because the current alliance capabilities get challenged in every new alliance. Over time, firms can develop certain efficient approaches and "best-practices" to handle the alliance process. After a certain amount of experience, the additional learning effect might stagnate and the influence of a new partner on the current management system might be diminishing. For a firm that has no or little alliance experience, forming an alliance with a partner that has a well-developed alliance management system can be very valuable. The inexperienced firm might be able to draw important lessons with regard to the approach the other company uses and be able to faster climb on the learning curve. The main goal of the alliance will be to achieve a certain (strategic) goal such as gaining market share, developing a new product or service or build a new technology. Nevertheless we think companies should also be aware of the learning potential an experienced partner can offer in the field of alliance management knowledge. By looking at the partner's approach on the alliance process, its internal structures, processes, tools and dedicated human resources, the focal company can evaluate and improve its own internal alliance management process. A more effective alliance management process might also be a key in a more effective and/or efficient achievement of the strategic goals of the alliance.

4.2 Limitations and future research

This study has only started to explore this domain and therefore there are several ways to further elaborate and complement this study. We here propose two avenues for future research which we plan to further explore.

Because of firm-specific characteristics, competitive environment and history, firms differ widely in the level of alliance capability they possess. To control for these inter-firm differences and to empirically test the model we have put forward, we will start our research with an in-depth case study in a large, multinational pharmaceutical company. Through interviews with key players within the alliance team we will study the current alliance management approach and its evolution over the past years. We would like to gain more insights in the alliance life cycle of R&D alliances and define the various goals and tasks in each phase.

This paper has elaborated on the general internal learning mechanisms which a firm can install in order to improve its alliance management. Our model can be situated at the fourth level of Möller's (1999, 2003) network management scheme, that of relationship management. We are aware that individual relationships need to be managed as a part of an interrelated portfolio of relationships and that different types of portfolios, relations or partners need different managerial approaches (Ford et al. 1998, Möller et al, 1999). Although we do not aim to integrate all these issues and levels of management, as this would lead us too far, we plan to investigate whether different types of alliances -whether they are core or non-core, with a research or marketing goal - are managed in a different way. With a quantitative survey we wish to further reveal learning mechanisms in the three categories (people, technology and people) and will empirically test their presence and importance in the alliance capability building process in these different types of alliances. We will also take into account control variables such as the size of the company and its experience with alliances.

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