

# The impact of alliance management capabilities on alliance attributes and performance: A literature review

Nielsen, E. and Jolink, A.

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# **THE IMPACT OF ALLIANCE MANAGEMENT CAPABILITIES ON ALLIANCE ATTRIBUTES AND PERFORMANCE: A LITERATURE REVIEW**

**Authors: dr. Eva Niesten and Prof. dr. Albert Jolink**

## **Abstract**

The literature on alliances has identified a variety of inter-firm antecedents of performance, including information and knowledge sharing among partners, shared partner understanding, and a focus on collective objectives. Recent studies have focused on alliance management capabilities (AMC)—firms’ abilities to capture, share, store, and apply alliance management knowledge—as an important antecedent of performance. In this paper, we review 90 studies on AMC and make two important contributions to the literature. First, our review provides an overview of and classification scheme for the different types of AMC to better organise the diverse empirical findings that have been presented in the literature. In our novel classification, we distinguish between general and partner-specific AMC and between AMC stored within the firm and within the alliance. Second, consistent with the dynamic capabilities perspective, we offer a more detailed understanding of why AMC improve performance by highlighting the intermediate impact of AMC on alliance attributes. In particular, our review demonstrates how the different categories of AMC influence alliances in terms of information and knowledge sharing among partners, shared partner understanding, and the pursuit of collective goals. Our review also demonstrates that these attributes improve performance. We note promising avenues for future empirical research that involve combining our classification scheme with research on the impact of AMC on alliance attributes and performance.

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## Introduction

The recent literature on alliances has argued that alliance management capabilities (AMC) are an important antecedent of performance (e.g., Feller *et al.* 2013; Schreiner *et al.* 2009). Specifically, AMC refer to the abilities of firms to capture, share, and store knowledge regarding alliance management and to apply this knowledge in on-going and future alliances (Heimeriks and Duysters 2007; Kale and Singh 2007). Because capabilities are difficult or even impossible to observe, researchers have identified a large set of proxies that can be used to infer the existence of AMC in firms (Godfrey and Hill 1995; Rothaermel and Deeds 2006), including structural and process elements such as specialised departments, training, evaluation procedures, and codified tools (e.g., guidelines and contract templates) (Duysters *et al.* 1999; Kale *et al.* 2002; Kale and Singh 2007). These types of alliance-related structures, processes, and tools enable firms to capture, share, store, and apply alliance management knowledge, and empirical research on AMC has shown that firms with such capabilities demonstrate better alliance performance than other firms (e.g., Heimeriks and Duysters 2007).

Studies on AMC frequently adopt a dynamic capabilities perspective (Teece *et al.* 1997; Vogel and Guettel 2013) and make theoretical claims that AMC are higher-order resources that influence the lower-order alliance-level resources (e.g., Schilke and Goerzen 2010; Sluyts *et al.* 2010). Examples of such lower-order resources include various attributes of the alliance relationship, such as information and knowledge sharing among partners, shared partner understanding, and a focus on collective goals (e.g., Goerzen 2005; Hagedoorn *et al.* 2006). The theoretical conjecture of studies on AMC is that AMC improve alliance success because such capabilities enable partners to adjust the attributes of the alliance relationship based on environmental changes (e.g., Heimeriks and Schreiner 2010; Schilke and Goerzen 2010). The empirical research on AMC has largely focused on explaining the

variation in alliance performance by studying the structures, processes, and tools associated with AMC; however, the literature has not addressed the intermediate impact of AMC on alliance attributes. Several studies have argued that a better understanding of how AMC influence performance is necessary and that such an understanding can be acquired by analysing how AMC influence alliance attributes and how these attributes, in turn, affect performance (Heimeriks and Schreiner 2010; Rocha Gonçalves and Conceição Gonçalves 2008; 2011).

This paper helps develop a better understanding of the impact of AMC on performance by offering the first review of the literature examining AMC. This review is divided into two parts and presents both the empirical research on AMC and the theoretical claims regarding how AMC influence alliance attributes. In the process, this study makes two important contributions to the literature on AMC. First, based on a content analysis of 90 articles, we identify and classify the proxies for AMC to organise the diverse empirical findings in this field and to distinguish among different categories of AMC (Duriau *et al.* 2007). The resulting novel classification distinguishes proxies that capture, share, and store general AMC (i.e., knowledge about alliance management that can be applied to any type of alliance, regardless of the type of partner) from those that capture, share, and store partner-specific AMC (i.e., knowledge about a specific alliance partner that can only be applied in future or concurrent alliances with the same partner) (Al-Laham *et al.* 2008). Simultaneously, our novel classification distinguishes proxies for AMC that are captured, shared, and stored within the firm and proxies for AMC that are captured, shared, and stored within the alliance (Ritala *et al.* 2009). This classification enables scholars to better understand the differences among categories of AMC and will allow future studies to be more explicit regarding the particular AMC category that is being studied and how this category affects performance. Second, we synthesise the claims that the literature makes regarding how AMC influence

alliance attributes, and how these attributes in turn influence performance. Our review shows that the literature most often refers to the impact of AMC on the following three attributes: information and knowledge sharing among partners, shared partner understanding, and a focus on collective goals. The review summarises the impact of AMC categories on these three attributes and the impact of such attributes on performance. This synthesis of theoretical claims not only highlights the importance of the dynamic capability literature examining AMC but also uncovers the intermediate impact of alliance attributes on the relationship between AMC and performance. Our review calls for more empirical research on the impact of AMC categories on alliance attributes and, subsequently, on performance.

This paper is structured as follows. The method section describes how we performed our literature review. The section on theoretical background and research design defines AMC and examines the theoretical perspectives and the research designs of the 90 articles included in our review. Next, we classify AMC into four categories and examine the impact of these categories on various alliance attributes, in addition to the impact of these attributes on performance. The final sections conclude, summarise our contributions, and suggest avenues for future research.

## **Method**

We used content analysis to conduct our literature review, which is a “research method that uses a set of procedures to make valid inferences from text” (Weber 1990, p. 9). To make such inferences, we employed material collection, descriptive analysis, category selection, and material evaluation (Mayring 2008).

During the material collection phase, we selected the articles and book chapters for our literature review on AMC. We conducted an extensive search for scholarly peer-reviewed journal articles using the article database EBSCO (Business Source Premier). This database

has strong coverage for the 25 journals with the highest impact factors in the fields of business and management and contains 98% of the bibliographic records for these journals' issues from the last 20 years (Christoffersen 2013, p. 3). In the EBSCO database, we searched for the terms "alliance capability", "alliance capabilities", "alliance management capability", and "alliance management capabilities". We searched for articles published between 1998 and 2013 to include the article by Dyer and Singh (1998), which is frequently referenced as the first article to examine AMC specifically. This search produced 165 publications in academic journals. To ensure that we did not exclude any relevant articles in choosing this 16-year time period, we performed an additional search of the EBSCO database for the years 1993 to 1998 using identical search terms, which produced no new articles regarding AMC. After carefully scanning the 165 articles, we included 78 articles in our study that specifically address the subject of AMC. We excluded the remaining 87 articles because they did not address the capabilities that are necessary to manage alliances; instead, these articles examined other capabilities, such as the marketing, manufacturing, or technological capabilities that firms obtain by means of their alliances with other firms. The excluded articles typically referred to AMC only in their reference lists.

After reviewing these 78 articles, we added nine additional articles and book chapters that we did not discover in our first EBSCO search. Several of our initial 78 articles refer to these nine articles and book chapters as relevant works on AMC. The new and larger number of articles extended our time period to 1997-2013 because we included Simonin (1997) on learning about inter-firm cooperation. Five of the nine publications are not included in the EBSCO database because they are book chapters or were published in journals that are not included in the EBSCO database. The remaining four publications use terms such as "alliance learning capability", "alliance management competence", or "alliance management skills" to refer to AMC and therefore were not identified in our first search. We performed a new

search in EBSCO using these three search terms. This search yielded three additional articles on alliance management skills, which we added to our review. In total, our review thus contains 90 articles, including the 78 articles from our first EBSCO search, the nine articles and book chapters that we discovered using the snowballing method, and the three articles we found by searching for "alliance management skills" (see Appendix 1 for the list of articles).

In our content analysis, we conducted a descriptive analysis of the theoretical perspectives and research designs of the selected articles (Mayring 2008). Appendix 1 lists the theoretical perspectives of the articles on AMC. Most of the articles adopt a capabilities perspective (48 out of 90 articles). In addressing research design, we distinguished between articles that present quantitative, qualitative, and conceptual research. The majority of the articles in our review employ a quantitative research design (60%). Appendix 1 shows which articles are quantitative and indicates whether the hypotheses on AMC and performance are supported, not supported, or partly supported. 22% of the articles in our review use a qualitative research design, and 18% are conceptual articles.

Next, during category selection, we organised the articles included in our review in accordance with the following topics: (1) we classified the proxies for AMC as proxies for general or partner-specific AMC and as proxies for AMC located within a firm or within an alliance; and (2) we determined the impact of AMC on alliance attributes and the impact of these attributes on performance. We selected and combined the categories of AMC found in connection with the first topic based on the previous literature on alliances (e.g., Al-Laham *et al.* 2008; Lichtenthaler 2008; Westney 1988; Zollo *et al.* 2002), but we inductively refined these categories while coding the reviewed literature (Duriau *et al.* 2007; Seuring and Gold 2012). The proxies for AMC are the empirical operationalisations of the categories of AMC (Bailey 1990; Seuring and Gold 2012). The patterns of relationships that we identified with respect to the second topic were based on the existing theory of dynamic capabilities, but the



types of alliance attributes were derived from the articles under examination. Collectively, these articles most often refer to information and knowledge sharing, shared partner understanding, and a focus on collective goals as alliance attributes that are influenced by AMC and that influence performance. Based on a close reading of the articles, we determined which of the articles refer to these attributes or to terms with similar content (see Figures 1 and 2)<sup>1</sup>.

Finally, during the material evaluation process, we ensured the validity and reliability of the data analysis by having both authors code the text and allocate it to the topics and categories listed above (Weber 1990). We also enhanced the validity of the data analysis by grounding the analysis in existing theory regarding dynamic capabilities (Seuring and Gold 2012).

### **Theoretical Background and Research Design of Studies on AMC**

An alliance management capability is defined as the ability of a firm to capture knowledge regarding alliance management, to share and store this knowledge and to apply this knowledge in on-going and future alliances (e.g., Kale and Singh 2007). Firms capture and accumulate knowledge about alliance management by effectively using their experience with alliances and by translating this experience into knowledge (e.g., Anand and Khanna 2000; Simonin 1997). Through their experience with alliances, firms learn how to manage such arrangements, and they develop AMC as a result (e.g., Heimeriks and Duysters 2007). Firms also develop AMC by implementing structures and processes designed specifically for alliances, such as specialised departments, training, and evaluation procedures (e.g., Hoffmann 2005; Schilke and Goerzen 2010; Sluyts *et al.* 2010). Firms also use codified

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<sup>1</sup> Information- and knowledge-sharing also includes communication, the exchange and transfer of information and knowledge, and information and knowledge flows. Shared partner understanding also includes mutual and common understanding, shared values and norms, and shared and aligned expectations with respect to the alliance. Collective goals include collective objectives and purpose with respect to the alliance and mutual, common, symmetrical, and aligned goals and objectives.

alliance tools, such as guidelines or contract templates, and they hire external specialists to capture and apply alliance management knowledge (Kale and Singh 2009; Sluyts *et al.* 2010). These structures, processes, and tools enable firms to capture, share, store, and apply alliance management knowledge. AMC have been defined as those abilities that allow firms to improve the management of individual alliances but have also been understood to allow firms to manage their alliance portfolios (e.g., Hoffmann 2005; Lavie *et al.* 2007; Parise and Henderson 2001; Sarkar *et al.* 2009). Wassmer (2010) refers to these two types of capabilities, distinguishing single AMC from alliance portfolio management capabilities, but leaves it to future empirical research to disentangle the different attributes embodied in these two types of capabilities. As of the date of this writing, the literature has focused primarily on the skills required to successfully manage a single alliance (Kale and Singh 2009).

### *Theoretical Perspectives*

Various theoretical perspectives have been used to study AMC, such as the dynamic capabilities perspective, organisational learning theory, the knowledge-based and resource-based views, and evolutionary economics (Wassmer 2010). In Appendix 1, we illustrate this diversity by listing the theories and the literature that are cited in the articles in our review. The majority of the articles study AMC utilising a capabilities perspective, and several studies argue that AMC can be considered a type of dynamic capability (e.g., Chang *et al.* 2008; Schilke and Goerzen 2010). In a bibliometric review of the literature on dynamic capabilities, Vogel and Guettel (2013) find that the articles on alliance capabilities form an important and separate cluster in the larger research field of dynamic capabilities. Teece *et al.* (1997, p. 516) define dynamic capabilities as “a firm’s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments”. These capabilities include the firm’s ability to adjust its routines, resources, and competences

to adapt to changes in the environment (Draulans *et al.* 2003; Rothaermel and Deeds 2006). Such capabilities are frequently referred to as higher-order or first-order resources that can alter lower-order or second-order resources (Eisenhardt and Martin 2000). The word “dynamic” in the term "dynamic capability", refers to intentional changes in or renewal of lower-order resources (Ambrosini and Bowman 2009). Because of this divide between higher-order and lower-order resources, dynamic capabilities are only indirectly linked with performance: dynamic capabilities aim to change a firm’s bundle of resources, routines, and competencies, which in turn affect economic performance (Zott 2003; Eisenhardt and Martin 2000). The resource base is directly linked to rents, but because dynamic capabilities are one step removed from rent generation, their effect on rents is only indirect (Ambrosini and Bowman 2009).

Studies on AMC propose that AMC are higher-order resources that enable changes to the attributes of the alliance, which are considered lower-order resources (e.g., Heimeriks and Schreiner 2010; Rocha Gonçalves and Conceição Gonçalves 2008; 2011; Schilke and Goerzen 2010). In Appendix 1, we indicate which articles view AMC as dynamic capabilities and refer to AMC as higher-order resources (see footnote 3 to the Appendix). For instance, Heimeriks and Schreiner (2010, p. 148) describe AMC as higher-level resources and argue that “the theoretical mechanisms by which alliance capabilities affect alliance performance can only be clarified by taking into account what happens at the dyadic level of the alliance”. The theoretical conjecture is that AMC improve alliance success because they allow partners to adjust the attributes of the alliance to changes in the environment (e.g., Heimeriks and Schreiner 2010; Schilke and Goerzen 2010). Examples of lower-order resources in an alliance that have a beneficial impact on performance include information- and knowledge-sharing among partners, shared partner understanding, and the pursuit of collective objectives (e.g., Pavlovich and Corner 2006; Spralls *et al.* 2011). Several studies on AMC indicate that

alliance partners use their AMC to alter lower-order resources in the alliance in response to environmental changes (e.g., Hoffmann 2005; Rocha Gonçalves and Conceição Gonçalves 2008; 2011; Spralls *et al.* 2011). AMC thus improve performance because they enable partners to adapt the type of information and knowledge that is shared within the alliance, their shared understanding, and the collective objectives, to environmental changes. Sampson (2005, p. 1028) argues that the positive link between recent alliance experience and performance reflects the importance of dynamic capabilities: “[W]hat matters to a firm’s ability to benefit from collaboration is not a long history of alliance experience, but recent experience, signaling the importance of adaptations to the current competitive environment. Dynamic capabilities may take the form of the specialized alliance management offices, involving specialized personnel who are committed full time to their change roles”.

### *Research Designs*

The majority of the articles in our review employ quantitative research methods to study AMC. Because capabilities are difficult or even impossible to observe (Godfrey and Hill 1995; Rothaermel and Deeds 2006), researchers use a variety of proxies to measure AMC. These proxies include alliance structures and processes, such as specialised departments, managers, training, and codified tools such as guidelines, contract templates, and databases (e.g., Kale *et al.* 2001). Appendix 1 offers an overview of the proxies that are used by the articles in our review. Studies on AMC assume that firms will have developed AMC when they have specialised alliance departments and train their managers or codify knowledge in specialised alliance guidelines (Schreiner *et al.* 2009). Studies characterise the variation in alliance performance as a function of the number of alliance structures, processes, and tools that firms possess (e.g., Heimeriks *et al.* 2007; 2009).

Alliance performance is measured in a variety of ways. One stream of the literature focuses on financial gains, such as profits, sales or abnormal stock market returns after announcements of alliances (Anand and Khanna 2000; Lambe *et al.* 2002; Rocha Gonçalves and Conceição Gonçalves 2008; 2011). A small number of studies measure the innovative output of firms or alliances (Anderson *et al.* 2011; Cui and O'Connor 2012). Another stream of the literature measures success using evaluations in which managers are asked to rate the extent to which the competitive position of the firm has improved as a result of the alliance or the extent to which the firm has acquired skills from its alliance partner (Draulans *et al.* 2003; Heimeriks and Duysters 2007; Heimeriks *et al.* 2009; Kale and Singh 2007; Schilke and Goerzen 2010; Schreiner *et al.* 2009; Zollo *et al.* 2002). These various ways of measuring performance are not specific to the field of AMC but are also employed in the literature that focuses on the inter-firm antecedents of alliance performance (Christoffersen 2012, p. 4-5). Most of the quantitative studies of AMC demonstrate that there is a positive relationship between alliance performance and the use of specialised structures, processes, and tools. The fourth column in Appendix 1 offers a detailed overview of the relationship between AMC and performance for each article in our review.

The majority of these quantitative studies on AMC adopt a capabilities perspective and view AMC as dynamic capabilities and, thus, as higher-order resources that influence resources at the alliance level (e.g., Al-Laham *et al.* 2008; Chang *et al.* 2008; Heimeriks *et al.* 2007; 2009; Kale *et al.*, 2002; Kale and Singh 2007; Lambe *et al.* 2002). However, these studies do not empirically research the effect of AMC on the attributes of alliances to determine the impact of AMC on performance. Instead, such articles primarily elaborate on the expected impact of AMC on alliance attributes in their introduction and discussion sections, whereas the empirical research that is conducted does not address the impact of AMC as higher-order resources on lower-order resources in alliances.

Our review of the literature on AMC also includes qualitative case studies and conceptual articles on AMC. Several of these articles also view AMC as higher-order resources that influence lower-order resources in alliance relationships, but they do not report on empirical research that links AMC to alliance attributes (Kind and Knyphausen-Aufseß 2007; Naqshbandi and Kaur 2011; Sluyts *et al.* 2010).

In the remainder of this article, we will first review the empirical (and mostly quantitative) findings in the literature on AMC by arranging the empirical proxies into four categories of AMC. Second, we synthesise the theoretical conjectures regarding how these four categories influence alliance attributes and how the attributes affect performance. By linking these two elements of the literature on AMC, we are able to offer valuable suggestions for future research in which empirical studies can focus on the relationship between categories of AMC and alliance attributes.

### **A Classification of Proxies for Alliance Management Capabilities**

Based on our literature review, we distinguish among three types of proxies for AMC: alliance structures, alliance processes, and alliance tools (see Table 1 and Appendix 1) (e.g., Kale and Singh 2007; 2009). Alliance structures consist of organisational units and the relationships between them. These units are dedicated to capturing, sharing, storing, and applying alliance knowledge and may include alliance departments, managers, and teams (Heimeriks *et al.* 2007; Kale *et al.* 2001). Alliance processes include the debriefing and rotation of alliance managers, forums and networks for formal and informal knowledge-sharing, training, and evaluation procedures (Kale and Singh 2007). These processes incorporate the best practices—based on alliance experience—to capture knowledge and stimulate the sharing of (often tacit) knowledge between partners and among employees.

Alliance tools include manuals, guidelines, templates, databases, and contact lists that capture, share, store, and apply codified alliance knowledge (e.g., Sluyts *et al.* 2011).

We classify these proxies as proxies for general or partner-specific AMC and as proxies for AMC that are stored within the firm or within the alliance. Zollo *et al.* (2002) refer to the former as a distinction between how firms learn to handle the complexities of the alliance process and how they learn about the partnering firms themselves. General AMC are based on alliance management knowledge that is obtained from experience with different partners and that may be useful in future alliances regardless of the type of partner. Partner-specific AMC include the ability of firms to capture, share, and store knowledge about a specific alliance partner; these abilities can be utilised in consecutive alliances with the same partner (e.g., Al-Laham *et al.* 2008). Westney (1988, p. 344) refers to the second distinction as distinguishing between the two dimensions of cooperative strategies: the transfer of learning within a firm and the management of relationships among partners. AMC are not stored exclusively at the firm level; instead, they are also retained outside the boundaries of the firm and stored at the alliance level (Lichtenthaler 2008; Ritala *et al.* 2009). Although several studies discuss the distinction between general and partner-specific AMC, on the one hand, and between capabilities within the firm and within the alliance, on the other, we offer the first classification in which we combine these two distinctions to generate four categories of AMC.

Our classification of AMC combines the conceptual and the empirical level (Bailey 1990) such that we present a conceptual classification of the four categories of AMC and provide empirical examples of these categories, which are proxies for AMC. These proxies represent the different ways in which researchers have attempted to measure AMC and can therefore also be referred to as indicators (Bailey 1994). We use Bush and Hunt's

requirements for classification schemes<sup>2</sup> to evaluate our classification. In general, we believe that our classification is particularly useful for research examining AMC and, more generally, in the field of dynamic capabilities (Bush and Hunt 2011). Classifying AMC into four categories allows us to organise the diverse objects of analysis of the studies on AMC and offers a starting point for future empirical research that might analyse how the mechanisms of each category explain the impact of AMC on alliance attributes. This classification of AMC meets the requirements of mutual exclusivity and collective exhaustiveness. Table 1 presents the proxies in each of the four categories: general AMC within the firm, partner-specific AMC within the firm, general AMC within the alliance, and partner-specific AMC within the alliance. The numbers in these four categories refer to the articles that discuss each AMC category; both the numbers and the corresponding articles can be found in Appendix 1. The following sections discuss the four categories and the proxies in detail to confirm that our classification adequately specifies the proxies and the four categories of AMC.

<< **Insert Table 1 here** >>

#### *General Alliance Management Capabilities within the Firm*

The general AMC within a firm include a firm's ability to capture, share, and store alliance management knowledge and to apply that knowledge to the firm's current and future alliances regardless of partner type. These types of AMC are developed by generating structures, implementing processes, and creating tools that are all related to alliances. Alliance structures can be quite developed in large firms, and may include a corporate alliance department that (or vice-president who) oversees alliance managers across the different departments of the firm (Hoffmann 2005; Kale *et al.* 2001). Such alliance managers

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<sup>2</sup> "Usefulness; mutual exclusivity; collective exhaustiveness; whether the scheme adequately specifies the phenomena to be classified; and whether the scheme adequately specifies characteristics that will be doing the classifying" (Bush and Hunt 2011, p. 81).



are responsible for several teams that transfer alliance knowledge both among these teams and to the alliances in which these teams are engaged (Kale *et al.* 2001; Mascarenhas and Koza 2008; Sampson 2005). Smaller firms may employ an alliance specialist or a few officers who are responsible for managing alliance knowledge (Draulans *et al.* 2003; Heimeriks and Duysters 2007; Hoang and Rothaermel 2005; Wittmann 2007). When firms employ alliance specialists, their alliances are more successful, but only when the specialists are employed near the location in which the alliances are situated and when the specialist is not part of the senior management team (Draulans *et al.* 2003).

Examples of alliance processes include coaching managers in alliance skills, developing employee training programs, sharing tacit knowledge in internal networks and forums, and evaluating the alliance processes themselves (De Man and Duysters 2005; Kale *et al.* 2001; 2002). Draulans *et al.* (2003) report that a manager's ability to compare and evaluate alliances contributes positively to their success. When alliances are compared frequently according to a set method, more people are likely to be involved in the evaluation process, and alliance knowledge will be more widely distributed within the firm.

Alliance tools provide codified knowledge regarding alliance management. Such tools include management guidelines, worksheets, manuals, and templates that assist managers with specific aspects of alliances, such as partner selection and assessment, negotiations, and the development of contracts (Kale *et al.* 2001, p. 465). Hoang and Rothaermel (2005, p. 333) refer to diagnostic tools and simulations as important elements of the codification of key insights that are gained through reflection on past alliance experiences. Firms may also maintain databases that contain factual information on each of their alliances, such as the date and purpose of formation, names of partners and of managing executives (Kale and Singh 2007, p. 999).

### *Partner-Specific Alliance Management Capabilities within the Firm*

Most alliance structures, processes, and tools that are relevant to developing general AMC within a firm may also be relevant to developing partner-specific AMC within a firm. The difference is that the structures, processes, and tools for partner-specific AMC only capture, share, and store alliance management knowledge that is specific to a particular partner and that can only be applied in alliances involving this same partner. The articles in our review refer to managers, training, informal and formal processes, databases and manuals, and an intranet as proxies for partner-specific AMC that capture, share, and store knowledge on specific partners within a firm (e.g., Dyer *et al.* 2001; Zollo *et al.* 2002). Different departments within a firm may be engaged in different alliances with the same partner. Alliance managers develop partner-specific AMC within a firm by transferring knowledge about such partner among the firm's different departments. Pangarkar (2004) discusses firms that employ 'boundary spanners' for concurrent or consecutive alliances with the same partner. Boundary spanners are alliance managers who transfer knowledge about a specific partner into the firm. Ryall and Sampson (2006) discuss the ability to contract alliances as a particular type of firm-level, partner-specific AMC. They demonstrate that firms that enter into consecutive alliances with the same partner improve their ability to write more detailed contracts with that partner at lower costs. These firms develop contracting capabilities because they learn more about their partners as they accrue additional experience contracting with them (Ryall and Sampson 2006).

In informal and formal processes and in internal training sessions, alliance managers and employees can share knowledge within the firm regarding a particular partner (e.g., Dyer *et al.* 2011).

Using alliance databases and manuals, in addition to intranets, firms store codified knowledge about alliances with particular alliance partners, such as factual information regarding events, decisions, and actions taken in these alliances (Duysters *et al.* 2012).

#### *General Alliance Management Capabilities within the Alliance*

General AMC may also be captured, shared, stored, and applied within the alliance rather than internalised within the firm. Alliance partners may decide to create a joint review committee or a cross-company management team to capture, share, store, and apply knowledge regarding alliance management within the alliance (Kale and Singh 2009; Schreiner *et al.* 2009). When an alliance is structured as a joint venture, the partners may decide to hire an alliance specialist to address the shared ownership portion of the joint venture (Albers 2010), i.e., an individual who is responsible for storing, codifying, and disseminating knowledge on alliance management within the joint venture.

Alliance partners may also agree to hire an external specialist or to register for specialised external training when they do not have access to alliance knowledge within their respective firms (De Man 2005). External parties who supply general alliance management knowledge might include consultants, lawyers, mediators, and financial experts (Heimeriks and Duysters 2007; Heimeriks *et al.* 2009; Sluyts *et al.* 2010). Various external parties may be hired during different stages of the alliance life cycle (Kale and Singh 2009). Thus, lawyers may be involved in the formation stage, when contracts must be drafted and signed, whereas mediators may be hired to resolve conflicts between partners in the post-formation stage (De Man 2005; Duysters *et al.* 2012; Sluyts *et al.* 2010).

General AMC may also be stored within an alliance as codified alliance knowledge. Using a shared intranet (or extranet), partners can assemble a repository of alliance documents, guidelines and manuals (Parise and Casher 2003). Furthermore, alliance

knowledge can be incorporated in alliance contracts that are adjusted over time to incorporate such knowledge and become “repositories for knowledge about how to govern collaborations” (Mayer and Argyres 2004, p. 394).

#### *Partner-Specific Alliance Management Capabilities within the Alliance*

Alliance partners may also capture, share, store, and apply partner-specific AMC within the alliance. Partner-specific AMC allow the effective use of knowledge about a specific partner that has developed over time and is stored within the alliance over the course of multiple consecutive alliances with that same partner (Zollo *et al.* 2002). Partners that engage in repeat alliances capture knowledge about one another in different ways. They may capture, share, and store partner-specific knowledge in inter-organisational structures that are used in consecutive alliances with repeat partners. Some examples of these inter-organisational structures include joint teams of alliance partners, channels of communication, and partner-specific interfaces (Hoang and Rothaermel 2005; Kale and Singh 2007; Khalid and Larimo 2012).

Repeat partners may also develop inter-firm routines that capture, share, and store partner-specific knowledge (Dyer and Singh 1998; Hoang and Rothaermel 2005; Kalaignanam *et al.* 2007; Kale *et al.* 2002; Kale and Singh 2007; Kim *et al.* 2002; Mayer and Argyres 2004; Parise and Henderson 2001). Zollo *et al.* (2002, p. 701) define these inter-firm routines as “stable patterns of interaction among two firms that are developed and refined in the course of repeated interactions”. In these routines, repeat partners exchange knowledge about themselves and develop a more refined understanding of the other's cultures, management systems, capabilities, weaknesses, behaviours and beliefs, while storing that information for future use (Zollo *et al.* 2002). These routines enhance the effectiveness of inter-firm agreements and strengthen interaction among repeat partners (Zollo *et al.* 2002, p.

701, 703). Kohtamäki *et al.* (2013) refer to shared strategy discussions, process development meetings, and relationship-steering group meetings as processes in which repeat partners might share and store partner-specific knowledge that will benefit the alliance.

To facilitate the sharing of codified partner-specific knowledge, repeat partners may transfer information through a shared intranet and store it in both a directory with the contact details of the partners and a repository with alliance-related documents (Heimeriks and Schreiner 2010; Parise and Casher 2003). Repeat partners may create a memorandum of understanding in which they specify their desired goals, expected outcomes, and the responsibilities and tasks of the respective partners (Mascarenhas and Koza 2008). This memorandum may be altered over time to convey and/or memorialise new perspectives and ideas. Dyer and Singh (1998) provide an example of a partner-specific alliance tool that was implemented by Xerox and Fuji. These two firms developed a communications matrix that identifies a set of relevant issues in the alliance (e.g., products, technologies, markets) and then matches individuals by function to the appropriate matters, which allows an employee of one firm to instantly find the proper contact person at the partner firm.

### **Relationships between AMC, Alliance Attributes and Performance**

In this section, we discuss the relationships between the four categories of AMC and alliance attributes, in addition to the relationships among attributes and performance. In particular, we synthesise the theoretical conjectures found in our literature review. Based on a content analysis, we establish that the literature most often refers to the following three alliance attributes: information and knowledge sharing among partners, shared partner understanding, and a focus on collective objectives (e.g., Pavlovich and Corner 2006; Spralls *et al.* 2011). Figures 1 and 2 summarise the impact of the four AMC categories on these three

alliance attributes and the impact of these attributes on performance; these figures indicate which articles in our review focus on a particular type of relationship.

<< **Insert Figures 1 and 2** >>

### *General AMC within the Firm, Alliance Attributes and Performance*

Many of the articles in our review discuss the beneficial impact of general AMC within the firm on information and know-how sharing among partners (A1 in Figure 1). The distinction between knowledge of alliance management (i.e., general AMC) and content knowledge is important in this regard. Firms with knowledge of alliance management are better able to stimulate the transfer of information and know-how about the content of the alliance, i.e., information or know-how about the alliance's products, activities, and technologies (Grunwald and Kieser 2007). Following Dyer and Singh (1998, p. 665), information is defined as easily codifiable knowledge, whereas know-how involves knowledge that is complex and difficult to codify. Although the information that partners share in an alliance can be quite diverse, most partners must share certain similar types of information during the lifecycle of the alliance (Kale and Singh 2009). During the early stages of negotiation, for example, the parties must share information about each firm's input into the alliance, such as the amount of human resources, physical assets, and financial investments (Sluyts *et al.* 2010). Subsequently, the partnering firms must share information regarding the division of responsibilities and tasks, in addition to the division of revenues and profits (Mascarenhas and Koza 2008). During its post-formation phase, the partners must share information about the alliance's progress and assess its performance, in addition to assessing the performance of each partner (Sluyts *et al.* 2010). Sharing know-how will frequently involve contributing and combining valuable resources and skills from each

partner because know-how involves knowledge that is difficult to imitate by outsiders, such that combining this knowledge in an alliance can give the partners a competitive advantage (Dyer and Singh 1998). The articles in our review highlight differences in impact between sharing information and sharing know-how regarding alliance performance. Information sharing increases efficiency of alliances (Adams 2001; Schreiner *et al.* 2009) because it decreases search and transaction costs, the costs of writing complex contracts, and monitoring costs (Heimeriks and Schreiner 2010; Sampson 2005; Spralls *et al.* 2011). Partners that share know-how increase the alliance's innovative output, which may improve the market value of the partners as a result of higher sales from innovative products (Anderson *et al.* 2011; Boyd and Spekman 2008; Nielsen and Nielsen 2009) (E1 in Figure 2).

The superior ability to transfer information and know-how between partners by firms with general AMC is described by several studies in our review (A1 in Figure 1). Cui and O'Connor (2012, p. 28) posit, for example, that “dedicated functions of alliance management help the firm systematically accumulate competencies of managing information exchange and more effectively acquire information from its partners”. Successful firms with AMC that operate in a larger network with multiple partners will “(1) have a knowledge specification and a knowledge location capability (i.e., know where what types of content should be placed within the network), (2) be able to efficiently and effectively gather, synthesize, and distribute key information content to partners, (3) be proficient in evaluating the costs and benefits of various types of information that network partners might find commercially valuable, (4) be adept at encouraging partners to share key information, (5) enhance the ability of partners to receive, process, and use information, and (6) know the right amount of information visibility for the network, which directly facilitates information exchange and increases communication quality” (Spralls *et al.* 2011, p. 62-63). Firms with AMC have superior communication abilities that enable them to enhance partners' willingness to

disclose information (Schreiner *et al.* 2009) and appropriate know-how (Anderson *et al.* 2011; Chang *et al.* 2008). Argyres and Mayer (2007) and Mayer and Salomon (2006) argue that the ability of firms to design effective contracts constitutes a particular type of AMC. Firms with contracting design capabilities craft better *ex ante* contracts that specify the knowledge to be exchanged in the alliance and lay the groundwork to foster good communication between partners (Argyres and Mayer 2007; Mayer and Salomon 2006). Schilke and Goerzen (2010) claim that firms with AMC have the managerial competence to absorb new knowledge from their R&D partners, and Rothaermel and Deeds (2006, p. 437) posit that the “demands of an alliance on a firm’s alliance management capability are likely to increase commensurately with the levels of tacitness, ambiguity and complexity involved in the knowledge exchanged in the alliance”.

Several articles in our review indicate that the positive impact of general AMC within a firm on information and knowledge sharing between partners may subsequently lead to a greater focus on collective goals (A2 in Figure 1). The exchange of information between partners highlights common goals (Spralls *et al.* 2011), and an open discussion between partners may support the achievement of these goals (Ritala *et al.* 2009). Schilke and Goerzen (2010) claim that information sharing is necessary to harmonise the activities of partners, to reconcile their interests and to achieve mutual objectives. Sampson (2005) argues that communication also allows firms to align (potential) changes in their strategies and objectives. It is believed that reliable and regular communication between partners and focused communication regarding alliance objectives and critical task-related information will improve the performance of the alliance (De Villiers *et al.* 2007; Duysters *et al.* 1999; Kale and Singh 2009) (E1 in Figure 2). Several studies also point to a direct relationship between general AMC within the firm and collective goals (A5 in Figure 1). Canter and Twombly (2010) posit that one of the tasks of alliance managers is to achieve a shared



objective among the partners, while Heimeriks and Schreiner (2010) posit that AMC may have a positive impact on partners committing to a common goal.

The exchange of information between partners leads not only to a focus on collective objectives but also to greater shared partner understanding (A3 in Figure 1). Information sharing between partners leads to shared understanding about common interests (Ritala *et al.* 2009) and a mutual understanding of the terms of the alliance relationship (Argyres and Mayer 2007). Information sharing builds a mutual understanding regarding the obligations and engagement rules of the partners and develops shared mental models of how to work together effectively (Schreiner *et al.* 2009). Spralls *et al.* (2011, p. 63) argue that information sharing between partners increases alliance performance because “communication fosters shared understanding among network partners; it helps align partners’ interests and values; it allows network partners to work collaboratively toward a shared understanding of what information is important and how best to use it”. Several articles in our review also address the direct relationship between AMC and a shared understanding (A4 in Figure 1). Hansen *et al.* (2008) refer to contractual management capabilities as a particular type of AMC and argue that some firms have superior abilities to write contracts that create shared expectations and mutual understanding regarding the alliance. The success of an alliance will increase when partners share values and create a shared identity and ideology because a shared understanding of the alliance reduces the likelihood of opportunistic behaviour (Kim *et al.* 2006) (E2 in Figure 1).

### *Partner-Specific AMC within the Firm, Alliance Attributes and Performance*

As alliance experience grows, firms learn not only to manage alliances in general but also to capture greater partner-specific knowledge when they ally with repeat partners (Zollo *et al.* 2002). Several studies in our review focus on the experience of firms with repeat

partners and address the ability of firms to translate partner-specific experience in alliance management skills that are used in alliances with repeat partners (Duysters *et al.* 2012; Hoang and Rothaermel 2005; Pangarkar 2004).

Sampson (2005) points to the beneficial impact of partner-specific AMC within the firm on information sharing among partners and on the pursuit of collective objectives (B1 and B2 in Figure 1). Partner-specific knowledge improves collaborative benefits by enabling firms to improve communication with the repeat partner and to identify effective processes for exchanging information (Sampson 2005, p. 1012). Partner-specific AMC enable firms to coordinate with their repeat partner to align the strategies of each firm with alliance activities and to work towards a common strategic goal (Sampson 2005, p. 1009, 1027). The beneficial impact of partner-specific AMC on the pursuit of collective goals is important for alliance performance because partners frequently value alliance goals differently, which might hinder collaboration. A survey has shown that the majority of alliance failures are at least partly caused by shifts in partners' objectives and expectations (Sampson 2005, p. 1012). Variations in the strategic direction of partners may be inescapable and negatively affect alliance longevity and its effective functioning (Dyer *et al.* 2001; Parkhe 1991, p. 580-581) (E3 in Figure 2). In our review, several articles report that establishing objectives that are mutually embraced by the partners leads to alliance success (e.g., Adams, 2001; Pavlovich and Corner 2006; Sherwood and Covin 2008; Spralls *et al.* 2011). Heimeriks and Schreiner (2010) argue that inducing firms to commit to a common objective leads to a competitive advantage (E3 in Figure 2).

#### *General AMC within the Alliance, Alliance Attributes and Performance*

General AMC within the alliance refer to best practices that partners capture, share, and store within the alliance, and that they apply to improve performance. These best

practices are not partner-specific knowledge but can be applied across a wide range of alliances. The articles in our review argue that partners that capture, share, store, and apply general AMC within their alliance stimulate information sharing among partners, a shared understanding, and a focus on collective goals (C1, C2, C3, C4 in Figure 1). Examples of alliance structures and processes that partners apply at the inter-firm level that may have this type of beneficial effect include cross-company management teams, joint business planning and joint evaluation sessions, external experts, and inter-firm taskforces and committees (Heimeriks and Schreiner 2010; Parise and Casher 2003; Schreiner *et al.* 2009; Sherwood and Covin 2008). “In cases where partners need to regularly inform each other of their respective actions or decisions, or they must periodically evaluate the evolving nature of their interdependence and adapt to it, feedback mechanisms such as joint teams are helpful to quickly process pertinent information” (Kale and Singh 2009, p. 50). External experts are an important source of specialised knowledge who can offer advice, training, and codified tools to partners regarding alliance management. These experts help ensure that alliance goals are set realistically and promote mutuality and shared understanding among partners (Heimeriks *et al.* 2009, p. 101). Sherwood and Covin (2008, p.167) argue that inter-firm collaboration teams facilitate alliance success by increasing the information flow between partners and by facilitating the establishment of clear and mutually embraced goals. Channels of communication that facilitate the exchange of knowledge also “enable alliance partners to overcome different frames of reference”; thus, they stimulate shared understanding (Sherwood and Covin 2008, p. 168). A shared business vision, a shared understanding of what information is important and how this information can best be used, and shared methods for problem solving, working constructively and thinking outside the box have all been reported to be important for alliance success (De Villiers *et al.*, 2007, De Villiers 2009, Duysters *et al.* 1999; Ertel 2001; Pavlovich and Corner 2006; Spralls *et al.* 2011). Hunt *et al.*

(2002, p. 24) define shared values among partners as “beliefs in common concerning what is important / unimportant, appropriate / inappropriate, and right / wrong”. Partners who share values will identify with one another and will be more committed to the alliance (Hunt *et al.* 2002) (E2 in Figure 2).

### *Partner-Specific AMC within the Alliance, Alliance Attributes and Performance*

Studies on AMC also discuss partner-specific capabilities that have been developed over time by partners that enter into consecutive alliances with the same partners. In these repeat alliances, partner-specific knowledge is stored in inter-firm routines, structures, processes, and contracts (Hoang and Rothaermel 2005; Mayer and Argyres 2004; Zollo *et al.* 2002). Examples of the structures and processes include joint teams, partner-specific interfaces, joint business planning sessions, and joint alliance evaluation sessions (Heimeriks *et al.* 2009; Heimeriks and Schreiner 2010; Hoang and Rothaermel 2005; Kale and Singh 2009; Pangarkar 2004; Zollo *et al.* 2002). Mayer and Argyres (2004) describe alliance contracts as repositories of partner-specific knowledge that can serve as a means of codifying inter-firm routines. When two firms enter into an alliance, each firm gradually learns about the other’s operations, internal organisation structure and decision-making styles. This knowledge eventually enables them to incorporate contract terms that take such factors into account and thereby improves the performance of repeat alliances (Mayer and Argyres 2004, p. 402, 405).

The articles in our review show that inter-firm routines and structures facilitate the exchange of information and know-how between partners (D1 in Figure 1). For instance, inter-firm routines can facilitate the exchange of critical task-related information between partners, and joint alliance teams can quickly process information regarding actions and decisions by partners (e.g., Kale and Singh 2009). Inter-firm routines also enhance the ability

of firms to recognise valuable knowledge from a particular partner and to effectively transfer this knowledge across inter-firm boundaries (Dyer and Singh 1998; Hoang and Rothaermel 2005). Partners in repeat alliances with partner-specific experience communicate more efficiently because they have learned how to share information (Zollo *et al.* 2002).

Heimeriks *et al.* (2009, p. 100) claim that partners that share knowledge in joint business planning sessions will become more aware of the future direction of the alliance, which will help define collective objectives at an early stage. Al-Laham *et al.* (2008) argue that repeat partners will have developed routines and procedural structures to facilitate learning from the partner and that these routines and structures will enable both firms to accomplish the goals of the alliance more quickly (D2 in Figure 1). In other words, they will spend less time setting up the alliance and more time exploiting it, which enables the partners to create common benefits more quickly and to convert common benefits to private benefits more rapidly (Al-Laham *et al.* 2008, p. 350) (E3 in Figure 2).

Information sharing in strategy discussions between partners also facilitates development of a shared purpose (Kohtamäki *et al.* 2013). Heimeriks and Schreiner (2010, p. 161) argue that joint business planning and joint evaluation sessions ensure that there are sufficient opportunities to exchange information among partners and that this information sharing is important for the development of mutual understanding. Pavlovich and Corner (2006) demonstrate that a shared mindset or a shared frame of reference is important for success because such a mindset allows partners to collectively make sense of the new alliance and its place in the environment. They show how shared frames of reference are collectively constructed during the alliance lifecycle and how such shared perspectives can only be attained by laborious communication (Pavlovich and Corner 2006, p. 189) (D3 in Figure 1). Sherwood and Covin (2008) discuss the direct relationship between partner-specific AMC within the alliance and a shared understanding among partners (D4 in Figure 1). Specialised

structures, such as collaboration teams, inter-firm taskforces, and committees facilitate repeated exposure to alliance partners and therefore mutual understanding regarding relevant alliance matters (Sherwood and Covin 2008, p. 162).

Our literature review has resulted in four categories of AMC that may positively affect alliance attributes. First, firms with general AMC demonstrate improved information sharing, mutual understanding, and the pursuit of collective goals because these firms have developed superior abilities to communicate, share knowledge, and design alliance contracts. Second, firms with partner-specific AMC have built up greater knowledge of particular partners and are therefore better able to share information and pursue collective goals in repeat alliances with such partner(s). Third, partners that store general AMC within the alliance improve their relationships by installing inter-firm alliance structures, processes, and tools that are known to have a beneficial impact on the alliance relationship. Fourth, partners also store partner-specific knowledge within the alliance. These partners are better able to share information, achieve a shared understanding and pursue collective goals in repeat alliances because they have integrated partner-specific knowledge in their inter-firm alliance structures, processes and tools. Our review has also shown that information and knowledge sharing, a shared understanding, and a focus on collective objectives are important antecedents of alliance success.

## **Conclusion**

The research on alliances in the fields of management, business, and economics is extensive. Reviews of this literature have addressed a host of topics, including inter-firm attributes of the alliance and the management of knowledge in alliances (Jolink and Niesten 2012; Meier 2011). Our review goes further by focusing on the capabilities to store and apply

knowledge regarding alliance management and by making two novel contributions to the literature. First, our review structures previous empirical research practices by providing a classification of proxies that are used to measure AMC. This classification distinguishes four categories: general AMC within the firm, partner-specific AMC within the firm, general AMC within the alliance, and partner-specific AMC within the alliance. The first distinction is consistent with research that studies alliance experience with different types of partners and partner-specific experience as two distinct forms of experience (Hoang and Rothaermel 2005; Ryall and Sampson 2006; Sampson 2005; Zollo *et al.* 2002). The second distinction is consistent with recent observations by researchers that capabilities may not only be stored within the firm but also retained outside a firm's boundaries (e.g., Lichtenthaler 2008).

Second, our review unveils an explanatory mechanism—as illustrated by the theoretical conjectures of the reviewed articles—for the impact of AMC on performance by stressing the intermediate impact of AMC on alliance attributes. It thereby contributes to the literature on dynamic capabilities because AMC are perceived to be particular types of dynamic capabilities and thus higher-order resources that affect the lower-order resources in the alliance. We show that the literature on AMC considers several attributes of the alliance as determinants of performance, including information and knowledge sharing between partners, shared partner understanding, and a focus on collective objectives. Our review offers insights about how the four categories of AMC influence these alliance attributes and subsequently improve performance. The articles reviewed demonstrate that the impact of general AMC within the firm on alliance attributes can mainly be attributed to the communication and contract design capabilities of firms, whereas the impact of partner-specific AMC on alliance attributes is mainly due to greater partner-specific knowledge embedded in the partners. AMC stored within the alliance have a positive effect on alliance attributes because partners store general and partner-specific knowledge in inter-firm alliance

structures, processes, and tools.

### **Future Research Suggestions**

Based on our contributions to the alliance literature, we are able to offer several suggestions for future research on AMC. First, future research should endeavour to study the impact of each category of AMC on alliance attributes more systematically. Our review summarises theoretical claims from the literature regarding the impact of AMC on the alliance and thereby offers a starting point for future empirical research. With respect to research on dynamic capabilities in general, Ambrosini and Bowman (2009, p. 37) have argued that qualitative, smaller sample studies are likely to be more appropriate for understanding the subtlety of resource creation and regeneration processes. A good example of a qualitative case study on alliances that examines collaborative processes in depth is the study by Davis and Eisenhardt (2011), which shows that alliances produce more innovations when partners collaboratively alter alliance objectives over time. With respect to AMC, exploratory and qualitative studies are useful in understanding the complex relationship between AMC and alliance attributes, and they offer a richer understanding of the mechanisms linking AMC to performance.

Second, the capabilities literature distinguishes different types of dynamic capabilities, such as in the following: “some are used to integrate resources, some to reconfigure resources; some are about creating new resources, while others are about shedding resources” (Ambrosini and Bowman 2009, p. 35). The literature on AMC defines AMC as dynamic capabilities, but researchers have not yet clarified whether there are differences between general and partner-specific capabilities in terms of being more or less dynamic. Future research may study whether general AMC are more important for integrating and creating new resources with new partners, whereas partner-specific AMC are



more focused on reconfiguring resources with the same partners in repeat alliances.

Third, future research might also address the impact of AMC on other attributes of the alliance, such as trust, complementary resources, or opportunistic behaviour by partners (Bertrand and Meschi 2005; Jolink and Niesten 2012). Such an approach might extend the analysis of alliance attributes beyond our focus on information and knowledge sharing, a shared understanding, and collective objectives. In addition, future empirical studies could make a stronger case for causal relationships between AMC and alliance attributes. The literature refers to the impact of AMC on alliance attributes, but a reversed causality could also be considered<sup>3</sup>: when information sharing needs are high, partners may develop AMC to improve performance. Furthermore, future research may go beyond the impact of AMC on a dyadic relationship and examine the impact of AMC on information and knowledge sharing between multiple alliances in a firm's alliance portfolio (Sarkar *et al.* 2009). The study by Spralls *et al.* (2011) offers a good starting point because it shows that a firm's capability to manage inter-firm distribution networks has a positive impact on information exchange and communication quality in the distribution network. With respect to the internal workings of a firm, the impact of AMC on the internal resources used in alliances is also worth examining empirically.

The final research suggestion is related to our observation that current empirical research on AMC frequently employs a cross-sectional design and studies AMC at a particular point in time. Longitudinal research can make a valuable contribution to the study of the evolution of AMC by highlighting how firms that implement alliance structures, processes, and tools improve information and knowledge sharing in the alliance and stimulate both a shared understanding and a focus on collective goals over time.

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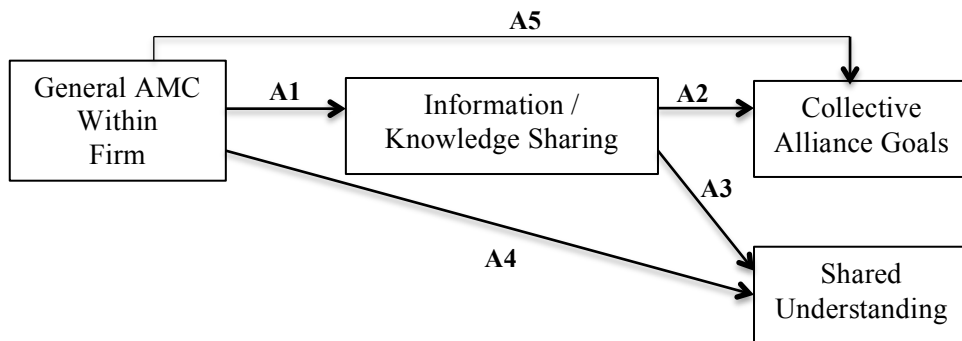
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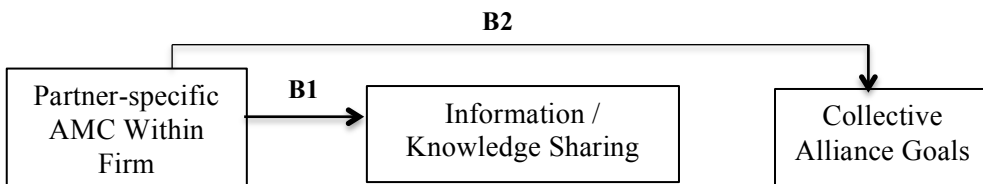
**Table 1. Classification of Proxies for Alliance Management Capabilities**

	<b>General Alliance Management Capabilities</b>	<b>Partner-Specific Alliance Management Capabilities</b>
<b>Within the Firm</b>	<p><b>1. Structures:</b> Corporate alliance office; vice-president or director of alliances; alliance (management) team; alliance department; alliance manager; alliance sponsor, alliance specialist; alliance gatekeeper; alliance committees and taskforces.</p> <p><b>Processes:</b> Debriefing of alliance managers; record-keeping and reporting on incidents, decisions and performance of alliances; rotation of alliance managers; rewards for alliance managers; forums and networks for (in)formal knowledge exchange; internal alliance training; alliance seminars and workshops; individual and cross-alliance evaluations.</p> <p><b>Tools:</b> Alliance guidelines; worksheets; manuals; checklists; metrics; templates for partner selection, alliance negotiation and alliance contracts; assessment tools to evaluate partner fit; database with factual information on alliances; simulations; logbook; contact list; intranet.</p> <p><i>References: 1, 2, 3, 4, 6, 8, 9, 11, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 27, 28, 29, 30, 32, 33, 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 54, 56, 58, 62, 64, 65, 67, 70, 71, 72, 73, 76, 77, 78, 79, 81, 82, 83, 84, 85, 87, 88, 89, 90.</i></p>	<p><b>2. Structures:</b> Alliance management office; alliance director; alliance manager; stable role definitions for boundary spanners; firm's ability to contract with specific alliance partner.</p> <p><b>Processes:</b> Informal and formal processes for sharing knowledge on alliance partner; brainstorming sessions; internal alliance training.</p> <p><b>Tools:</b> Database with factual information on alliance partners; intranet; implementation manuals.</p> <p><i>References: 27, 66, 75, 76, 89.</i></p> <p><i>Partner-specific experience: 24, 43, 55, 60, 62, 66, 68, 75, 76, 90.</i></p>
<b>Within the Alliance</b>	<p><b>3. Structures:</b> Alliance manager, alliance specialist or communication system in joint venture; joint teams of alliance partners; alliance review committee; cross-company management team; inter-firm taskforce.</p> <p><b>Processes:</b> External alliance training; use of external alliance specialist: consultants, lawyers, mediators and financial experts; joint business planning; joint evaluation; meeting events in partner program.</p> <p><b>Tools:</b> Alliance contract as repository of alliance knowledge; shared intranet; virtual team room, directory with contact details and repository with alliance documents.</p> <p><i>References: 2, 5, 18, 24, 27, 39, 40, 41, 42, 50, 51, 52, 62, 67, 75, 79, 80, 83, 84.</i></p>	<p><b>4. Structures:</b> Alliance review committee; joint teams of alliance partners; channels of communication; partner-specific interfaces; alliance specialist in joint venture; inter-firm taskforce.</p> <p><b>Processes:</b> Routines for inter-firm partner-specific knowledge sharing; joint business planning; joint alliance evaluation; partner program; shared strategy discussion; process development meeting; relationship steering group meeting.</p> <p><b>Tools:</b> Memorandum of understanding; alliance contracts as repository of alliance knowledge; virtual team room and web-conferencing; directory with contact details and repository with alliance documents; communications matrix; shared intranet.</p> <p><i>References: 3, 4, 12, 24, 26, 30, 33, 39, 40, 41, 42, 43, 47, 49, 50, 51, 53, 55, 57, 61, 62, 66, 67, 68, 75, 80, 83, 84, 90.</i></p>

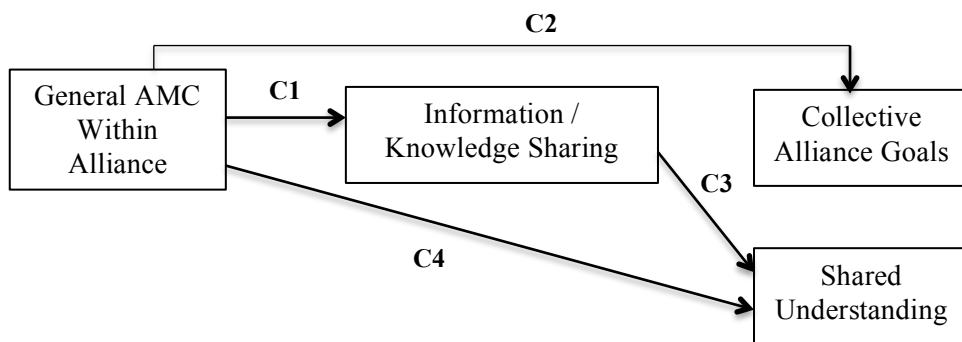
**Figure 1. Impact of AMC on Alliance Attributes**



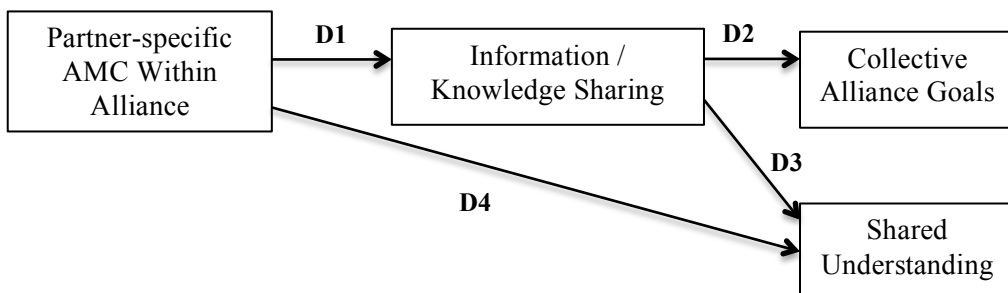
**A1:** 1, 2, 5, 6, 12, 13, 14, 15, 17, 21, 25, 32, 35, 37, 42, 46, 50, 51, 52, 53, 58, 59, 63, 64, 65, 67, 70, 73, 77, 78, 79, 82, 83, 85, 87.  
**A2:** 1, 30, 42, 70, 76, 78, 85. **A3:** 6, 15, 37, 42, 54, 70, 79, 85. **A4:** 32, 36, 63. **A5:** 13, 30, 35, 42, 46, 70, 77, 78.



**B1:** 76 **B2:** 76

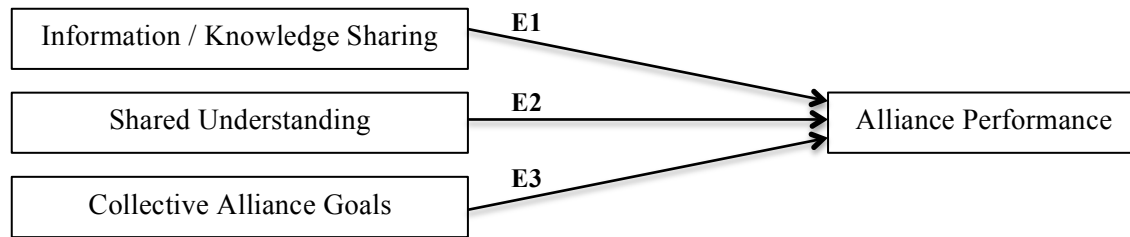


**C1:** 42, 51, 67, 79, 80. **C2:** 40, 80. **C3:** 42, 79, 80. **C4:** 42.



**D1:** 3, 12, 26, 33, 40, 42, 43, 51, 57, 62, 66, 67, 68, 90. **D2:** 30, 40, 57, 68. **D3:** 12, 42, 69.  
**D4:** 42, 62, 69, 80.

**Figure 2. Impact of Alliance Attributes on Alliance Performance**



**E1:** 1, 3, 5, 6, 12, 16, 20, 21, 23, 25, 28, 30, 31, 33, 42, 43, 44, 45, 46, 51, 54, 57, 65, 66, 67, 70, 75, 76, 79, 80, 85, 87, 90. **E2:** 3, 20, 21, 23, 26, 28, 30, 33, 45, 54, 55, 57, 69, 80, 85. **E3:** 1, 3, 20, 23, 27, 42, 46, 55, 61, 69, 76, 80, 85.

### Appendix 1. Overview of Articles on Alliance Management Capabilities<sup>1</sup>

Articles:	Proxies	Theoretical perspectives	Main argument with respect to impact of AMC on performance <sup>4</sup>
1. Adams 2001	<b>Structure:</b> Strategic alliance manager; alliance (management) team <b>Process:</b> Alliance training	-	Skills of alliance managers and alliance team (AMC) are determinants of alliance success. (QL).
2. Albers 2010	<b>Structure:</b> Alliance manager (in joint venture); dedicated alliance function; alliance team <b>Process:</b> Performance evaluation system <b>Tool:</b> Alliance manual, guidelines and metrics	Configurational approach, organisational design literature	AMC affect alliance governance system: e.g. firms with dedicated alliance functions/units are more likely to use specialization, monitoring and standardization as governance system. (QL).
3. Al-Laham <i>et al.</i> 2008 <sup>3</sup>	Increasing speed of alliance formation <b>Structure:</b> Dedicated alliance function; alliance managers; partner-specific interfaces <b>Process:</b> Inter-organisational routines	Literature on learning & dynamic capabilities, knowledge-based theories	AMC are reflected in ability of firms to enter into alliances faster (measured by increasing speed of alliance formation), which affect the number of alliances a firm enters in the future. AMC thus positively affect alliance formation rate. (H supported).
4. Anand & Khanna 2000	Alliance experience <b>Structure:</b> alliance manager; administrative entity that coordinates multiple alliances <b>Tool:</b> Alliance manuals; contracts as repository of alliance knowledge; databases and newsletters with alliance activity	Incomplete contract theory, literature on learning & capabilities	When controlling for alliance experience, strong differences exist the ability of firms to create value (measured by abnormal stock returns after alliance announcement), which is interpreted as reflecting differences in AMC. (H supported).
5. Anderson <i>et al.</i> 2011	<b>Structure:</b> Communication systems in joint venture, changes in alliance management by senior team <b>Tool:</b> Rules for managing alliance life cycle	Literature on learning, alliances & commitment	AMC positively influence innovation. (H supported).
6. Argyres & Mayer 2007	<b>Tool:</b> Contract templates	Capabilities theory, organisational learning theory, transaction cost & agency theory	Alliance contract performance improves when contract design capabilities develop among appropriate groups of personnel (e.g. lawyers, engineers, managers), given the type of contract terms. (I)
7. Arian & McGahan 2010	Strong investor response to announcement of alliance: Measure 1: absolute value of average cumulative abnormal return (CAR) for prior alliances. Measure 2: CAR of current deal - absolute value of average CARs for prior alliances	Capabilities theory	Investor responses (in terms of responses on the stock market after alliance announcement by firms) offer information about (unobserved) AMC of these firms. (H supported).
8. Barbarinsa 2011	<b>Structure:</b> Dedicated strategic alliance group <b>Process:</b> Alliance training <b>Tool:</b> Alliance manual	Literature on radical innovation & alliances	AMC enhance efficacy of alliances aimed at sourcing technology periods of technological discontinuity. (QL).
9. Bell <i>et al.</i> 2006	<b>Structure:</b> Alliance department; alliance manager	Transaction cost, social	A main determinant of alliance success is whether people have AI



11. Booth & McCredie 2004	<b>Structure:</b> Alliance group; alliance department <b>Process:</b> External alliance experts <b>Tool:</b> Alliance metrics	Principled negotiation	A programmed approach to alliance management and involving external alliance experts (i.e. AMC) achieve a collaborative mind and alliance success. (QL).
12. Boyd & Spekman 2008	Alliance experience. Alliance duration; cross-border and horizontal alliances; alliance portfolio size and composition. <b>Process:</b> Inter-firm information sharing routines	Inter-firm competency literature	When a firm has AMC (measured by alliance duration; cross-border horizontal alliances; alliance portfolio size and composition), industries have a greater impact on a firm's market value. (H partly supported).
13. Canter & Twombly 2010	<b>Structure:</b> Dedicated alliance manager; vice-president of alliances; alliance director Practices and tools of alliance management	-	AMC improve alliance success. (QL).
14. Carstens <i>et al.</i> 2008 <sup>2</sup>	-	Social ecology theory, organisational & management literature	Entrepreneurial leaders with AMC adopt innovations. (QL).
15. Chang <i>et al.</i> 2008 <sup>3</sup>	Alliance experience; ratio of a firm's market value to its book value <b>Tool:</b> Alliance guidelines	Resource-based & knowledge-based perspectives, dynamic capability, evolutionary economics, organisational learning	AMC, defined as the interaction between alliance experience and intellectual capital (ratio of a firm's market value to its book value) positively impact value creation of alliances, measured as stock price responses to alliance announcements. (H supported).
16. Chonko 1999	<b>Structure:</b> Alliance manager, dedicated alliance team <b>Process:</b> Alliance training	Alliance literature	Firms with AMC can gain a marketplace advantage and alliance success. (QL).
17. Cui & O'Connor 2012	<b>Structure:</b> Dedicated alliance function; alliance manager <b>Process:</b> Alliance seminars and workshops <b>Tool:</b> Alliance checklists	Organization & marketing theory; literature on alliances, innovation & capabilities	AMC (measured by alliance function) moderate the relationship between alliance portfolio resource diversity and firm innovation. AMC enable diversity to positively affect innovation. (H supported).
18. De Man 2005	<b>Structure:</b> VP of alliances; alliance office; alliance specialist; alliance manager; gatekeeper <b>Process:</b> Internal and external alliance training; partner selection process; joint business planning; culture program; partner program; alliance evaluation; joint evaluation; incentives for alliance managers; meetings of alliance managers; external consultants; legal experts; mediators; financial experts <b>Tool:</b> Alliance metrics; alliance database	Capability theory	AMC are the determinants of competitive strength of companies & success of alliances. American companies have more AMC than European companies supported).
19. De Man & Duysters 2005	<b>Process:</b> Courses and workshops on alliance management Alliance management tools	Alliance literature	A higher level of AMC increases the innovativeness of firms. (C)
20. De Villiers <i>et al.</i> 2007	<b>Structure:</b> Dedicated alliance staff	Alliance literature	AMC positively affect alliance success. (H supported).
21. De Villiers 2009	<b>Structure:</b> Alliance specialist; alliance manager <b>Process:</b> Alliance training; alliance evaluation; alliance workshop <b>Tool:</b> Alliance database; alliance checklist	Management literature on alliances	AMC positively affect alliance success. (QL).

22. Draulans <i>et al.</i> 2003 <sup>3</sup>	<b>Structure:</b> Alliance specialists <b>Process:</b> Training; individual alliance evaluations and cross-alliance evaluations	Dynamic capabilities approach, resource-based view, evolutionary economics	AMC enhance alliance success (measured by managerial assessment of performance). (H supported).
23. Duysters <i>et al.</i> 1999	<b>Structure:</b> Alliance function; alliance managers <b>Process:</b> Alliance training <b>Tool:</b> Alliance monitoring; alliance methodology (one language & best practices)	Alliance literature	AMC improve alliance success. (C).
24. Duysters <i>et al.</i> 2012	Partner-specific experience <b>Structure:</b> Alliance department; alliance manager; alliance specialist; gatekeeper; vice-president of alliances; local alliance manager <b>Process:</b> Formal knowledge exchange between alliance managers; approval processes; rewards and bonuses for alliance and business managers; alliance metrics; use of own knowledge about national cultural differences; country-specific alliance policies; external parties: consultants, financial experts, legal experts, mediators for conflict resolution <b>Tool:</b> Alliance best practices; database; handbook; alliance management development plan; training in intercultural management; competency framework for alliance managers; cross-alliance evaluation; culture program; external and internal alliance training; individual and joint alliance evaluation; intranet; joint business planning; partner portal; partner programs; partner selection approach	Organisational learning theory	AMC positively moderate the relationship between alliance portfolio diversity and alliance portfolio performance (measured by managerial assessments). AMC moderate relationship between diversity and performance only at high levels of AMC, offering support for the notion that higher levels of diversity require higher levels of AMC (H supported).
25. Duysters & Lokshin 2011 <sup>2</sup>	-	Alliance literature	Alliance portfolio complexity has an inverse U-shaped relation with innovative performance. Limits of AMC are reached when increasing complexity lowers performance. (H supported).
26. Dyer & Singh 1998	<b>Structure:</b> Alliance function; director of strategic alliances <b>Process:</b> Inter-firm knowledge sharing routines <b>Tool:</b> Communications matrix; alliance manuals	Relational view of competitive advantage	AMC allow firms to generate relational rents, by combining complementary resources, sharing knowledge, partnering with firm with AMC. (C).
27. Dyer <i>et al.</i> 2001	<b>Structure:</b> Dedicated alliance function; vice-president and director of alliances; alliance manager <b>Process:</b> Internal and external training programs; internal networks of alliance managers; processes to share knowledge; virtual summits; alliance workshops <b>Tool:</b> Value-chain analysis form; needs-analysis checklist; manufacturing-versus-partnering analysis; partner screening form; technology and patent-domain maps; cultural-fit evaluation form; due diligence team; negotiations matrix; needs-versus-wants checklist; alliance contract template; alliance-structure guidelines; alliance-	Alliance literature	Firms with AMC create more alliance value and improve alliance success. (QL).

	metrics framework; problem tracking template; trust-building worksheet; alliance contact list; alliance communication infrastructure; relationship evaluation form; yearly status report; termination checklist; termination-planning worksheet		
28. Ertel 2001	<b>Structure:</b> Alliance manager <b>Process:</b> Alliance training <b>Tool:</b> Alliance manuals; templates; alliance health checks	-	AMC lead to greater improvements in market value. (QL).
29. Faems <i>et al.</i> 2010	<b>Structure:</b> Dedicated alliance function; alliance manager	Alliance literature, innovation literature, resource-based view	Alliance portfolio diversity increases share of personnel costs in value added, which reduces profit margin. (H supported). Greater diversity implies investments in AMC, but AMC are not measure
30. Feller <i>et al.</i> 2013	Improvements in release management, milestones, allocation of tasks <b>Structure:</b> Dedicated alliance function <b>Process:</b> Inter-organisational processes; inter-organisational knowledge sharing and communication routines <b>Tool:</b> Manuals, databases	Knowledge-based perspective, capability literature	Socialization, externalization and internalization of knowledge contribute to development of AMC. (H supported). AMC improve the development of new products and processes, and are an impor driver of alliance success.
31. Fink & Kessler 2010	Alliance experience	Cooperation, organisational learning & evolutionary theory; resource-based view	AMC improve business performance (measured by managerial assessments). (H partly supported).
32. Goerzen 2005	<b>Structure:</b> Affiliated companies department; relationship manager; alliance taskforce <b>Tool:</b> Alliance guidelines; alliance workshops	Alliance literature	AMC reduce organisational costs, enhance competitive position a improve knowledge acquisition. (QL).
33. Grunwald & Kieser 2007	<b>Structure:</b> Dedicated alliance function; partner-specific common coordination <b>Process:</b> Alliance training; alliance summits; standardized procedures for repeat alliances <b>Tool:</b> Alliance guidelines, manuals; and templates	Organisational learning theory	AMC enhance cooperation efficiency, and economize on the exchange of content knowledge. (QL).
34. Gulati 1999	Alliance experience; diversity of alliance experience; time duration since a firm last entered an alliance <b>Structure:</b> Alliance units <b>Tool:</b> Alliance guidelines; checklists; templates; legal framework for alliances	Resource-based view, network theory, literature on capabilities	The greater a firm's AMC, the greater the likelihood that it will enter a new alliance in the subsequent year. (H partly supported, only w AMC are measured by experience).
35. Hagedoorn <i>et al.</i> 2006	Alliance experience; relative betweenness measure of centrality; network constraint measure	Literature on learning and capabilities, network theory	The larger the AMC of firms, the higher the likelihood that firms engage in future alliance activities. (H supported).
36. Hansen <i>et al.</i> 2008	<b>Structure:</b> Alliance function	Capabilities theory, resource-based view, transaction cost theory	Firms with AMC can simultaneously pursue opportunism minimization and gain maximization objectives. (C).
37. Hartmann <i>et al.</i> 2010	<b>Structure:</b> Procurement department; procurement team <b>Process:</b> Auditing systems; consultants	Capability theory	Acquisition, development & application of AMC are essential for successful procurement of products by public agencies. (QL).

	<b>Tool:</b> Standardized contracts		
38. Heimeriks & Duysters 2007 <sup>3</sup>	<b>Structure:</b> Vice-president of alliances; alliance department, specialist, manager; local alliance manager <b>Process:</b> Rewards and bonuses for alliance managers; formal knowledge exchange between alliance managers; external parties: consultants, lawyers, mediators, financial experts <b>Tool:</b> Alliance database; intranet; guidelines for partner selection program and joint business planning.	Capability and organisational learning theory, resource-based view, evolutionary economics	AMC are positively related to a firm's alliance performance (measured by managerial assessments of performance). AMC mediate between alliance experience and alliance performance. (F supported).
39. Heimeriks <i>et al.</i> 2007 <sup>3</sup>	<b>Structure:</b> Alliance manager; vice-president of alliances; alliance department; alliance specialist; gatekeeper; local alliance manager <b>Process:</b> Rewards and bonuses for alliance managers and business managers; formally structured knowledge exchange between alliance managers; use of own knowledge about national cultural differences; alliance metrics; country-specific alliance policies; use of third parties: consultants, lawyers, financial experts, and mediators <b>Tool:</b> Internal and external alliance training; training in country differences; partner selection program; joint business planning; alliance database; intranet; best practices; culture and partner program; individual and joint alliance evaluation; comparison of evaluations	Capability and organisational learning theory, resource-based view, evolutionary economics	Alliance experience and integrating AMC (training, alliance best practices, culture program, alliance evaluation & metrics) are key drivers of alliance success (measured by managerial assessments of performance), but not institutionalizing AMC (alliance department manager, vice-president of alliances, partner selection program, intranet, rewards, formal knowledge exchange, alliance policies). supported).
40. Heimeriks <i>et al.</i> 2009 <sup>3</sup>	<b>Structure:</b> Alliance manager; vice-president of alliances; alliance department <b>Process:</b> In-house company courses; intercultural training programs; courses by external experts, third parties: consultants, financial experts, mediators and legal experts <b>Tool:</b> Guidelines for partner selection protocol and joint business planning; codified best practices; use of best practices from individual alliances as input for network-sharing sessions and intranet	Capability and organisational learning theory	AMC have a positive impact on alliance portfolio performance (measured by managerial assessments of performance). Alliance managers and an intranet are important in helping firms move from low-performing to a medium-performing portfolio, and training solutions and codified best practices are important in helping firm move to a high-performing portfolio. (H supported).
41. Heimeriks 2010	<b>Structure:</b> Alliance manager; vice-president of alliances; alliance department; local alliance manager <b>Process:</b> Rewards alliance managers tied to alliance performance; formally structured knowledge exchange between alliance managers; alliance metrics; country-specific alliance policies <b>Tool:</b> Internal and external alliance training; training in country differences; partner selection program; intranet to disperse practices; alliance best practices; culture program; comparison of alliance evaluations with partner	Capability and organisational learning theory	Integrating AMC (training, alliance best practices, culture program, alliance evaluation & metrics) positively influence alliance portfolio performance (measured by managerial assessments of performance). With increasing alliance experience, institutionalizing AMC (alliance department & manager, vice-president of alliances, partner selection program, intranet, rewards, formal knowledge exchange, alliance policies) negatively affect performance. (H supported).
42. Heimeriks & Schreiner 2010 <sup>3</sup>	<b>Structure:</b> Alliance department; alliance function; vice-president of alliances; alliance manager; alliance specialist in alliance; alliance	Capabilities- and competence-based view, transaction cost	Relational quality (i.e. commitment, trust, information exchange & communication, conflict) mediates between AMC and alliance

	<p>gatekeeper  <b>Process:</b> Alliance training; use of external specialists; joint business planning; joint evaluation sessions; meetings in partner program; mediator  <b>Tools:</b> Alliance evaluation; checklist for partner selection and monitoring; alliance metrics; alliance reward and bonus systems; alliance database; shared intranet</p>	<p>and agency economics, process-oriented, trust and social embeddedness perspectives</p>	<p>performance. (C).</p>
43. Hoang & Rothaermel 2005	<p>Partner-specific alliance experience; general alliance experience  <b>Structure:</b> Dedicated personnel; alliance managers; dedicated alliance function  <b>Process:</b> Inter-firm knowledge sharing routines; partner-specific interfaces  <b>Tool:</b> Alliance metrics, manuals, database, simulations</p>	<p>Organisational learning theory, literature on capabilities</p>	<p>General AMC (measured by general alliance experience) positive affect joint project performance with diminishing marginal return; Partner-specific AMC (measured by partner-specific alliance experience) negatively affect joint project performance. (H supported).</p>
44. Hoffmann 2005 <sup>3</sup>	<p><b>Structure:</b> Dedicated alliance function; vice-president of alliances; relationship manager; alliance coordinator; alliance sponsor; alliance governor; alliance manager; alliance specialist; internal consultant  <b>Tool:</b> Reviews, alliance evaluation; benchmarking; congresses and seminars; checklists; manuals and procedures; data warehouses; job rotation; intranet; performance measurement; incentive systems</p>	<p>Dynamic capabilities view, alliance literature</p>	<p>Firms with better instruments for multi-alliance management have better AMC and are more satisfied with the performance of their alliance portfolio. Firms with multiple alliances and AMC can achieve a higher return on management. (H supported).</p>
45. Hunt <i>et al.</i> 2002 <sup>3</sup>	<p>Alliance experience; alliance manager development capability; partner vigilance capability</p>	<p>Competence- and resource-based view, resource advantage theory</p>	<p>Alliances are successful when the partners have developed AMC. AMC are positively related to idiosyncratic and complementary resources, which are also determinants of alliance success. (C).</p>
46. Ireland <i>et al.</i> 2002	<p>Dedicated alliance function; alliance managers; alliance management routines</p>	<p>Transaction cost economics, social network theory, resource-based view</p>	<p>Firms with AMC create more value, achieve a competitive advantage, have a higher long-term success rate and have lower transaction costs for managing alliances. (C).</p>
47. Kalaignanam <i>et al.</i> 2007	<p>Alliance experience, partner alliance experience  <b>Process:</b> Inter-organisational routines; partner-selection routines  <b>Tool:</b> Knowledge stores for partner-selection and alliance design</p>	<p>Alliance literature</p>	<p>The magnitude of financial gains (short-term changes in sharehold values after alliance announcement) accruing from a firm's AMC (measured by experience) is higher for smaller than for larger firm AMC of alliance partners (measured by partner alliance experience) positively affect financial gains of larger firms. (H supported).</p>
48. Kale <i>et al.</i> 2001	<p><b>Structure:</b> Corporate alliance office; alliance management team; director strategic alliances and alliance teams  <b>Process:</b> Debriefing alliance managers; forums and networks of alliance managers to share alliance knowledge; internally conducted alliance training programs  <b>Tool:</b> Alliance management guidelines; worksheets; manuals; templates for partner assessment and selection, alliance negotiation and alliance contracts; assessment tools to evaluate organisational and</p>	<p>Alliance literature</p>	<p>A firm with AMC has a larger performance measured by both managerial assessments and stock market gains after an alliance announcement. (H supported).</p>

	technological fit		
49. Kale <i>et al.</i> 2002 <sup>3</sup>	<b>Structure:</b> Dedicated alliance function <b>Process:</b> Partner-specific routines; joint reviews	Dynamic capabilities, organisational learning, knowledge- and resource-based view, evolutionary economics	A firm with AMC has a larger performance (measured by both managerial assessments and stock market gains after an alliance announcement). (H supported).
50. Kale & Singh 2007 <sup>3</sup>	<b>Structure:</b> Dedicated alliance function <b>Process:</b> Debriefing of managers involved in alliances; record-keeping and reporting on incidents, decisions, actions, progress and performance of alliances; collective review of alliances; forums; informal sharing of alliance information; rotation of alliance managers; incentives for managers to share alliance information; internal and external training; alliance committees and taskforces; inter-firm knowledge sharing routines <b>Tool:</b> Database with factual information on alliances; directory or contact list of alliances; checklists or guidelines; manuals; logbook; templates	Dynamic capabilities and knowledge-based view	A firm's dedicated alliance function and its alliance learning proc (i.e. a firm's AMC) positively affect alliance success (managerial assessments). The alliance learning process (articulation, codification, sharing and internalization of alliance management know-how) partially mediates the relationship between the allianc function and alliance success. (H supported).
51. Kale & Singh 2009 <sup>3</sup>	Alliance experience <b>Structure:</b> Dedicated alliance function; alliance manager; alliance review committee; joint teams of alliance partners <b>Process:</b> Alliance training; alliance apprenticeships; forums for sharing of alliance knowledge <b>Tool:</b> Value-chain analysis form; tool to decide partnering need and form; partner screening form; technology and patent-domain maps; cultural-fit evaluation form; negotiations matrix; needs-versus-wants checklist; alliance contract template; alliance-structure guidelines; alliance-metrics framework; problem tracking template; trust-building worksheet; alliance contact list; alliance communication infrastructure; relationship evaluation form; yearly status report; termination checklist; termination-planning worksheet	Dynamic capabilities and knowledge-based view	Firms with AMC can increase their overall alliance success throug alliance experience, by creating an alliance function and establish alliance learning processes. (C).
52. Kaufmann & Schwartz 2009	Resources; routines; firm's degree centrality; strength of entrepreneur's network; consultants	Network theory	AMC positively affect the degree centrality of firms (i.e. the direc contractual contacts a firm has with other firms). (H supported).
53. Khalid & Larimo 2012 <sup>3</sup>	<b>Process:</b> Intra-firm knowledge sharing; inter-firm knowledge sharing routines; channels of communication	Dynamic capabilities, organisational learning and knowledge-based view	AMC positively affect alliance performance (measured by managerial assessments). (H supported).
54. Khanna 1998	<b>Structure:</b> Central alliance management entity	Alliance literature	Partner-specific AMC will lead to a higher level of common bene and a greater longevity of the alliance. (C).
55. Kim <i>et al.</i>	Partner-specific experience; procedures for inter-firm knowledge	Organisational ecology and	AMC allow firms to reach their goals quickly and to pursue new

2006	sharing	network theory	goals that require changes in the firms' network. (C).
56. Kind & Knyphausen-Aufseß 2007 <sup>3</sup>	<b>Structure:</b> Dedicated alliance function	Dynamic capabilities perspective	AMC are important for the competitive position of a firm. (QL).
57. Kohtamäki <i>et al.</i> 2013	<b>Process:</b> Shared strategy discussions; process development meetings; relationship steering group meetings	Relational research, network and transaction cost theory, social capital literature	Relational capital, which indicates quality of interaction between alliance partners, has a positive impact on profit. (H supported). Relational capital presumes an investment in AMC.
58. Lambe <i>et al.</i> 2002 <sup>3</sup>	Alliance experience; alliance manager development capability; partner identification propensity <b>Structure:</b> Alliance manager; director of strategic alliances <b>Process:</b> Alliance training <b>Tool:</b> Alliance database	Resource-based view, competence-based approach, resource advantage theory	AMC contribute to alliance success (measured by joint profits of alliance partners). (H supported).
59. Lavie <i>et al.</i> 2007	External involvement: participation in number of competing alliances	Literature on capabilities, alliance literature	External involvement of firms in alliances contributes to firms' AMC, which help them to extract alliance benefits (measured by productivity, market success and exposure). (H supported).
60. Lee 2011	Alliance experience	Literature on alliances, relationship marketing and new product development	The alignment of contract terms with knowledge creation or knowledge appropriation in alliance portfolios has a positive impact on new product development. (H supported). AMC may be a moderating factor, and reduce the need for formal contract terms.
61. Mascarenhas & Koza 2008	<b>Structure:</b> Senior manager that assembles alliance team; dominant management of the alliance by one partners, alliance function, vice-president of alliances <b>Process:</b> Communication between managers of each alliance partner <b>Tool:</b> Memorandum of understanding of strategic purpose of alliance	Alliance literature	AMC improve alliance performance. (QL).
62. Mayer & Argyres 2004	<b>Process:</b> Internal sharing of alliance knowledge; formal processes for sharing experiences; meetings of project managers; sharing of status reports; inter-firm knowledge sharing routines <b>Tool:</b> Alliance contract	Transaction cost economics and organisational learning	AMC, in particular alliance contracting capabilities, improve alliance performance. (QL).
63. Mayer & Salomon 2006	Alliance experience	Resource-based view and transaction cost economics	The relation between hold-up and internal governance decreases in the presence of strong governance capabilities. (H supported). Governance capabilities improve alliance success and reduce cost
64. Naqshbandi & Kaur 2011 <sup>3</sup>	<b>Structure:</b> Dedicated alliance function	Dynamic capabilities theory	AMC have a positive impact on alliance success, competitive advantage, innovative output and flexibility of the firm. (C).
65. Nielsen & Nielsen 2009	Alliance experience; level of know-how in technology/process assessment, knowledge/skills acquisition, knowledge/skill protection. <b>Structure:</b> Alliance managers <b>Process:</b> Collaborative knowledge management processes	Knowledge-based, organisational learning, and social capital perspectives, literature on capabilities	AMC improve alliance performance (innovative improvements to products or processes). (H supported).
66. Pangarkar	Partner-specific experience; alliance formation and termination	Organisational learning theory	AMC, in particular the ability to learn from alliance failure, reduce

2004	experience; stable role definitions for boundary spanners; cooperation routines		the likelihood of future alliance terminations. (H supported).
67. Parise & Casher 2003	<b>Structure:</b> Alliance director; alliance manager; alliance team; alliance professional; office of alliance management <b>Process:</b> Alliance-focused communities of practice; educational workshops; inter-firm knowledge sharing routines between alliance professionals; inter-firm virtual team room; web-conferencing technologies <b>Tool:</b> Best-practice repositories; instant messaging; extranet; training manuals; alliance database; directory with contact details; repository for alliance documents	Alliance literature	AMC, in particular the capabilities to manage alliance portfolios, have a positive effect on alliance success. (QL).
68. Parise & Henderson 2001	<b>Process:</b> Content learning; partner-specific learning; alliance management learning; inter-firm knowledge-sharing routines	Resource exchange model, relational view of the firm	AMC influence the success of alliances. (QL).
69. Pavlovich & Corner 2006 <sup>2</sup>	-	Literature on social capital, knowledge, entrepreneurship	Firms with AMC have more extensive network ties and are more likely to develop new knowledge in alliances. (QL).
70. Ritala <i>et al.</i> 2009	<b>Structure:</b> Alliance specialist <b>Process:</b> Forum for inter-firm knowledge sharing	Evolutionary economics, resource-based view	AMC are a source of competitive advantage and will lead to more successful alliances. (QL).
71. Rocha-Gonçalves & Conceicao-Goncalves 2008 <sup>3</sup>	Experience with previous alliances; managers' skills at managing alliances; proactivity towards new alliances	Dynamic capabilities view	A positive relation exists between the portfolio of alliances of a fi (as a proxy for the degree of abundance of external resources) and firm's performance outcomes (profitability and sales). This relatic moderated by AMC. (H supported).
72. Rocha-Gonçalves & Conceicao-Goncalves 2011 <sup>3</sup>	Experience with previous alliances; managers' skills at managing alliances; proactivity towards new alliances	Dynamic capabilities view	A positive relation exists between the portfolio of alliances of a fi (as a proxy for the degree of abundance of external resources) and firm's performance outcomes (profitability and sales). This relatic moderated by AMC. (H supported).
73. Rothaermel & Deeds 2006 <sup>3</sup>	Point of diminishing total returns in the relationship between a firm's alliances and its new product development <b>Structure:</b> Office of alliance management; alliance champion; alliance leader; alliance manager; dedicated alliance function; dedicated unit <b>Process:</b> Alliance training <b>Tool:</b> Diagnostic tools; codified routines	Dynamic capabilities view	AMC have a positive effect on performance (measured by new product development). (H supported).
74. Rothaermel & Hess 2007 <sup>3</sup>	Alliance experience	Dynamic capabilities perspective	AMC positively impact innovative output. (H not supported).
75. Ryall & Sampson 2006	Firms' ability to draft detailed contracts; alliance contracts; partner-specific and general alliance experience	Relational contracting literature, organisational economics	Alliance experience increases the detail of alliance contracts. (H supported). This suggests that a firm's alliance contracting ability (i.e. AMC) improves with experience and reduces contracting cos
76. Sampson 2005 <sup>3</sup>	Alliance experience; alliance management processes <b>Structure:</b> Alliance management offices, director of alliance	Dynamic capabilities view, learning theory	Alliance experience has a greater impact on performance when alliances are characterized by a greater complexity and uncertain



	management, alliance manager		(H supported). This implies AMC positively affect performance.
77. Sarkar <i>et al.</i> 2009 <sup>3</sup>	<b>Structure:</b> Alliance function, alliance management department, centralized competency center <b>Process:</b> Partnering pro-activeness; relational governance; portfolio coordination <b>Tool:</b> Templates and metrics	Resource-based perspective and dynamic capabilities framework	AMC (measured by partnering pro-activeness, relational governance portfolio coordination) positively influence alliance portfolio performance (measured by managerial assessments). Alliance function strengthens the effect of partnering pro-activeness and relational governance on performance. (H supported).
78. Schilke & Goerzen 2010 <sup>3</sup>	Routines: inter-organisational coordination, alliance portfolio coordination, inter-organisational learning, alliance pro-activeness, alliance transformation Alliance experience <b>Structure:</b> Alliance structures, alliance units, alliance specialists, alliance coordinator, vice-president of alliances, alliance departments	Dynamic capabilities perspective	Five types of routines of AMC have a positive impact on alliance performance (measured by managerial assessments), and AMC mediates the impact of dedicated alliance structures and alliance experience on alliance performance. (H supported).
79. Schreiner <i>et al.</i> 2009 <sup>3</sup>	Skills: Coordination, communication, bonding <b>Structure:</b> Alliance manager; cross-company management team	Dynamic capabilities perspective	Coordination, communication and bonding aspects of AMC have positive impact on alliance performance (measured by managerial assessments). (H supported).
80. Sherwood & Covin 2008	Alliance experience <b>Structure:</b> Partner interface mechanisms; collaboration teams; communication interfaces; inter-firm taskforces and committees <b>Process:</b> Inter-firm knowledge sharing routines	Learning theory	AMC have a positive effect on technological knowledge acquisition (H partly supported, only when measured as partner-specific experience, but not when measured as general alliance experience collaboration teams).
81. Simonin 1997	Alliance experience <b>Structure and process:</b> Collaborative management know-how (including staffing and training); negotiation know-how; partner searching know-how; knowledge and skills transfers; exiting skills	Organisational learning and capabilities perspectives, resource-based view	AMC have a positive impact on tangible (profit, market share, competitive advantage) and intangible benefits (learning about cooperation, learning skills & competences held by partner, learn skills & competences independent of partner). (H supported).
82. Sivakumar <i>et al.</i> 2011	Alliance experience and diversity of alliance partners. <b>Structure:</b> Alliance management function	Resource-based and knowledge based view, TCE	AMC have a positive effect on innovation. (H partly supported, only when measured with experience). Diversity has a negative effect.
83. Sluyts <i>et al.</i> 2010 <sup>3</sup>	<b>Structure:</b> Alliance manager; alliance sponsor; communication between units inside the firm; external specialists, such as alliance search bureaus, lawyers, mediators, accountants, management consultants <b>Process:</b> Strategy, management, alliance and skill training; training in legal, financial, intercultural issues, conflict management and in competence analysis <b>Tool:</b> Strategic grid with priority rankings; policy on alliance strategy; interdepartmental meetings; intranet; alliance database; social network software; screening procedures; due diligence checklists; partner selection program; procedure on alliance negotiation; payment and legal policies; financial tools; project management; alliance metrics; checklists for cross, joint and individual alliance evaluation;	Dynamic capabilities view, strategic and competence-based management literature, knowledge-based view of the firm, organisational learning theory	AMC positively influence alliance success. (C).

	benchmark techniques		
84. Sluyts <i>et al.</i> 2011	<b>Structure:</b> Alliance department, alliance manager <b>Process:</b> Debriefing of managers; recordkeeping of incidents/decisions in alliances; reporting on alliance progress/performance; forums; informal sharing of alliance information; rotation of managers alliance training; collective review of alliances; management incentives to share information; in-house and external alliance training <b>Tool:</b> Guidelines, manuals, templates; database with factual alliance information	Resource-based view, behavioral theory of the firm, and capabilities- / competence-based theory	AMC, in particular alliance learning processes (codification and sharing), have a positive impact on alliance performance (measured by managerial assessments of performance). Codification partially mediates the effect of the alliance function on alliance performance (H supported).
85. Spralls <i>et al.</i> 2011 <sup>3</sup>	Inter-firm distribution network experience; manager development and partner identification capabilities <b>Structure:</b> Alliance manager <b>Process:</b> Alliance training	Dynamic capabilities view, resource-based view, alliance literature	The ability of a firm to manage inter-firm distribution networks has a positive effect on trust, information exchange and communication quality in the network, which positively affect responsiveness, financial performance, efficiency, effectiveness and innovativeness (H supported).
86. Swaminathan & Moorman 2009	Trend in firm's ability to generate abnormal returns from alliances over time.	Capabilities theory, network theory, marketing literature	AMC have a positive effect on value creation (measured by a firm's abnormal stock returns). (H supported).
87. Walter <i>et al.</i> 2008	Skills to make alliance-related decisions. <b>Structure:</b> Dedicated alliance management function, alliance managers	Behavioral theory of the firm, information processing theory, alliance & capability literature	AMC, in particular skills to make alliance decisions, have a positive impact on alliance performance (measured by managerial assessments). (H supported).
88. Wassmer 2010 <sup>3</sup>	<b>Structure:</b> Dedicated alliance function <b>Process:</b> Alliance training; alliance evaluation; partner program <b>Tool:</b> Alliance database	Dynamic capabilities view, organization learning, knowledge-based view, evolutionary economics	AMC leads to a better performance of alliances and creates a competitive advantage for firms. (C).
89. Wittmann 2007	<b>Structure:</b> Alliance manager; dedicated alliance function	Capabilities theory, escalation theory	Alliance failure is more likely when managers choose not to allocate resources to create AMC. (C).
90. Zollo <i>et al.</i> 2002	Alliance experience <b>Process:</b> Inter-organisational routines; brainstorming sessions; internal training <b>Tool:</b> Alliance database; knowledge management tools; implementation manuals; intranet	Capabilities theory, evolutionary economics, organisational learning, transaction cost economics	AMC have a positive impact on alliance performance (measured by managerial assessments). (H partly supported, only when AMC refers to partner-specific experience, but not to general experience).

<sup>1</sup>. Articles either refer to these proxies or they use these proxies in empirical research.

<sup>2</sup>. Articles that discuss AMC, but that do not refer to proxies for AMC.

<sup>3</sup>. Articles that refer to AMC as a dynamic capability or as a higher-order resource.

<sup>4</sup>. Articles with reference to 'hypothesis supported or not, or partly supported' are quantitative studies; QL refers to qualitative studies, including case studies, interviews and examples of companies with AMC; C refers to conceptual papers and/or literature reviews.