Alliance Management Capability in Dutch Universities

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ABSTRACT

Over the past two decades alliances have become an important strategic element for organizations. Prior research has identified alliance management capability (AMC) as an important determinant for alliance success and three phases that can be distinguished in the life cycle of an alliance. A case study was conducted to identify what organizational elements constitute AMC in Dutch universities and which of these organizational elements are employed in different phases of the alliance life cycle. Additionally, general organizational elements that do not refer to specific phases of an alliance were investigated. This research provides two contributions to the AMC literature. First, this research focuses on AMC in universities, instead of commercial firms. Second, AMC is studied over three different phases in the alliance life cycle.

As general organizational elements almost all Dutch universities have departments and individual functions that are responsible for alliance related activities, however the alliance related activities and responsibilities are very much decentralized over different levels of the universities. Efforts to diffuse knowledge on alliance management are generally limited and focused on certain aspects.

For the first phase of the alliance life cycle, the alliance formation and partner selection, Dutch universities have organizational functions to facilitate in this phase. The networks of individuals in the universities are an important element in this phase. There is also a bilateral process of scouting internally for researchers that match projects externally and, searching for parties externally that match inventions and knowledge internally. Furthermore, various organizational tools are employed in this phase in the form of bibliometric analyses, trainings, documents and organizing days for external parties.

The second phase of the alliance life cycle, the governance and design, is also facilitated through organizational functions at different levels of the universities. Governance of collaborations is discussed at different levels of the universities. The universities use tools in the form of documents containing guidelines and rules about contracts, intellectual property (IP) and to take into account the academic interests of the universities.

Most of the Dutch universities also have organizational functions that are involved in the postformation alliance management, the third phase of alliance life cycle. The involvement of these functions consists mainly of providing support to the researchers. Functions involved in alliance related activities also expressed the fragility of managing ongoing alliances at the universities.

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1. Introduction

Alliances have become an important strategic element for organizations over the past two decades. The reason being that alliances can be a source of competitive advantage by accessing new resources and capabilities, decreasing organizational inertia, entering new markets and increasing efficiencies (Kale and Singh, 2009; Heimeriks and Duysters, 2007). As alliances have gained importance in business strategy, academics have studied this topic, mainly to explain the heterogeneity in commercial inter-firm alliance performance (Kale et al., 2001, 2002; Draulans et al., 2003; Hoang and Rothaermel, 2005; Heimeriks and Duysters, 2007; Kale and Singh, 2007, 2009; Schreiner et al., 2009). Through this research on alliances, several determinants for alliance performance were derived, such as alliance experience, trust and efficient contracts (Heimeriks and Duysters, 2007; Kale and Singh, 2009). More recently the concept of *alliance management capability (AMC)* has emerged as an explanation for alliance performance. Alliance management capability can be defined as the organizational elements that comprise an organization's capability to manage an alliance (Schreiner et al, 2009). Some of the previous research has also identified examples of organizational elements, which constitute this capability of firms to manage an alliance, such as creating a separate unit responsible for managing alliances and learning mechanisms to capture the alliance management know-how (Heimeriks and Duysters, 2007; Schreiner et al., 2009; Kale and Singh, 2009). Consequently, learning from experience in alliance engagement plays an important role in developing AMC.

These previous studies on AMC have focused mainly on alliances between commercial firms (Draulans et al., 2003; Hoang and Rothaermel, 2005; Heimeriks and Duysters, 2007; Kale and Singh, 2007). However, other types of organizations like universities, nongovernmental organizations (NGO's), non-profit organizations and even individuals, also engage in alliances with firms or with each other. Alliances with these types of organizations are different from commercial inter-firm alliances, because the main objective of these organizations is not profit, and they possess different skills and a different organizational culture (Kale and Singh, 2009). This raises the question of what impact these differences have on the AMC of these organizations. In this research the focus will be on AMC in Dutch universities.

In collaborations, universities mainly serve as research institutes; therefore literature concerning collaborations with research institutes is considered to be relevant. There has been some research on collaborations with research institutes in general, but none that specifically concerns the management of these alliances. These studies have mainly focused on public-private partnerships (PPPs) in general. The studies on PPPs are varied in terms of specific sectors being studied (Li et al., 2005; Hodge and Greve, 2007; George et al., 2002; Faerman et al., 2001) and different aspects of these alliances being highlighted. Examples are the motives for these alliances (Sakakibara, 1997; Elmuti et al., 2005), knowledge transfer (Santoro and Chakrabarti, 2002), performance (Hall et al., 2003; George et al., 2002) and political issues and tensions (Flinders, 2005) in PPPs. Some studies have also specifically addressed collaborations between universities and firms (Santoro and Chakrabarti, 2002; George et al., 2002; Elmuti et al., 2005), but none of these studies has addressed the capabilities to manage these partnerships.

Studying alliances with research institutes in general is important for a couple of reasons. First, these collaborations are increasingly important for producing patents, prototypes and licenses. Also, from a global competitiveness view these alliances are important for the increasing demand for innovation in products and processes. Furthermore, they also serve as a stepping-stone for more complex collaborations that involve multiple firms and research agencies (Elmuti et al., 2005). Collaborations between firms and research institutes have some specific benefits for both parties. The benefits for a firm are access to highly educated people and facilities, as well as an enhanced image when collaborating with a ‘high profile’ research institute (Santoro and Chakrabarti, 2002). Research institutes collaborate with firms to obtain additional funds, gain access to proprietary technology, research tools and an opportunity to develop and bring technologies to the market. Furthermore, they are exposed to practical problems, obtain expertise and in the case of universities, create employment opportunities for their graduates (Santoro and Chakrabarti, 2002; Elmuti et al., 2005).

As for the Netherlands specifically, it is increasingly becoming a knowledge-based economy. Therefore knowledge transfer between firms and research agencies is becoming more important. This is also demonstrated by the Dutch government who is trying to narrow the gap between research and entrepreneurial (or intra-preneurial) activity, by implementing policies to provide financial and regulatory incentives for firms to invest in research[1]. Furthermore, the Dutch government has asked

[1] www.rijksoverheid.nl, Kamerbrief ‘Naar de top: het bedrijvenbeleid in actie(s)’, 2011

research institutes to encourage and reward researchers for valorization efforts, meaning that knowledge is converted to commercially viable products, processes and services (CBS, 2011). Another factor that is relevant for universities specifically in the Netherlands is their financing. Universities in the Netherlands rely on three 'flows' of funding. The first flow is provided by the Dutch Ministry of Education, Culture and Science and in the last several years, accounts for about 60% of their funding. The second and third flows of funding for Dutch universities are obtained as temporary subsidies. The second flow of funding comes from the Dutch organization for scientific research (NWO) and the third flow comes from firms, ministries, the EU and charities (CBS, 2011, Jaarboek onderwijs in cijfers). This means that Dutch universities are in competition for the second and third flow of funding. The third flow of funding is obtained partly through collaborations with other organizations. The economic crisis has had a negative effect on acquiring funds from the third flow for some universities (VU Amsterdam, Jaarverslag 2011; TU Delft, Jaarverslag 2011). This implies that alliance management in universities can be important in acquiring third flow funds and probably increasingly so.

This research provides two contributions to the AMC literature. The first is that a research on AMC has been conducted focused on universities, instead of commercial firms. The second is that AMC is studied divided over three different phases of the 'alliance life cycle'. Previous research has identified that three phases can be distinguished in the life cycle of each individual alliance (Kale and Singh, 2009). These are, (a) the formation phase, wherein an organization selects an appropriate partner to form an alliance with, (b) the design phase, wherein the alliance parties decide on the type of governance to oversee the alliance, (c) the post-formation phase, wherein the parties manage the alliance after it is up and running (Gulati, 1998; Kale and Singh, 2009; Schreiner et al., 2009). More recent literature on alliance capability has also noted the importance of more research on the alliance life cycle and the different mechanisms within each phase (Heimeriks and Schreiner, 2010; Sluyts et al., 2010).

Therefore, the aim of this research is to find out which organizational elements are employed by Dutch universities to handle each phase (and thus manage alliances) of the alliance life cycle. A better understanding of alliance management capabilities in Dutch universities can provide useful insights for improving alliance performance and create more value from collaborations involving universities and possibly other type of research institutes.

The organizational elements to determine AMC in Dutch universities were derived with a case study approach, wherein the case is 'Dutch universities'. Ten semi-structured interviews were conducted at six Dutch universities. In addition, publicly available data from the websites of <u>all</u> the Dutch universities and privately obtained documents were gathered and analyzed for this research. This provided an answer to the following research question:

What organizational elements constitute alliance management capability (AMC) in each phase of the alliance life cycle in Dutch universities?

The following sections will present the theoretical background, the methodology, results and conclusions. Finally, the discussion is presented.

2. THEORETICAL BACKGROUND

In the last two decades strategic alliances have increasingly become a source of competitive advantage for organizations. An alliance is defined *as an independently initiated relationship between two (or more) organizations to exchange, share, or co-develop resources or capabilities to gain mutual benefits (Gulati, 1995; Kale and Singh, 2009).* Previous studies on alliances used the same definition, with the exception that ‘organizations’ was replaced with ‘firms’ as they studied inter-firm alliances. Using the term organizations includes research institutes such as universities as well.

Research revealed a consistent difference in alliance performance among firms (Kale et al., 2002; Heimeriks and Duysters, 2007; Kale and Singh, 2009). This, along with the increasing importance of strategic alliances, sparked a growing interest in the topic of alliances for academics, and resulted in many articles that studied various issues related to alliance management and performance (Kale and Singh, 2009). In this section, the background regarding alliance management and the concept of alliance management capability and the alliance life cycle is further elaborated.

2.1. Challenges in managing alliances in general

The reason for organizations to develop alliance management capability is that managing alliances successfully is a challenging task. Successfully managing alliances is difficult because of the uncertainties concerning cooperative motivations and complexity of coordinating tasks across the boundaries of an organization (Rothaermel and Deeds, 2006; Kale and Singh, 2009; Schreiner et al., 2009). Uncertainty concerning cooperative motivation is an issue of potential absence of trust between alliance partners. Studies have found that trust is an important factor for alliance success. Trust facilitates alliance governance and helps the parties work more cooperatively. Furthermore, strong personal bonds help with conflict resolution (Schreiner et al., 2009; Kale and Singh, 2009). Coordinating tasks in an alliance is challenging because of the difference in location, skills and culture. The problem here is aligning actions between the partners. A key instrument here is communication. Lack of knowledge about how their actions are interdependent, how to handle information and rules regarding obligations and decision-making, can create serious coordination problems (Kale and Singh, 2009; Schreiner et al., 2009).

2.2. Challenges in managing collaborations with research institutes

As for collaborations with research institutes, previous research has mainly addressed the concerns with public-private partnerships (PPPs) in general. A PPP is basically an alliance between a public and a private organization (or multiple organizations). All the large universities in the Netherlands are public organizations. Some studies have specifically addressed collaborations between universities and firms (Santoro and Chakrabarti, 2002; George et al., 2002; Elmuti et al., 2005). None of this previous research has addressed the organizational elements of managing these collaborations. However, these studies provide some valuable insights on the importance, motivation and concerns for these collaborations that may provide reasons for differences between alliance management capabilities (AMCs) in firms and in universities.

The aforementioned challenges in managing alliances are general problems of collaboration that also apply for collaborations with research institutes like universities. Previous research fails to mention the significance of these challenges in different type of collaborations and organizations. Public research institutes and private firms are different types of organizations in several ways. Research institutes are concerned with creating and spreading knowledge, while firms produce and commercialize products, processes and services in a competitive environment. Elmuti et al. (2005, p. 119), on strategic alliances between universities and corporations, state: "Companies typically do not comprehend how work is allocated in universities or how university budgets are handled. University partners, on the other hand, do not understand the real market forces, time demands, and the incentive structure of the firm". This, along with differences in organizational cultures, languages and values can create additional communication and coordination problems for these types of collaborations.

Furthermore, commercial firms and research institutes have different final objectives. Research institutes like universities often use research to contribute to science in the form of new concepts, models, empirical findings, measurement techniques and other similar objectives (George et al., 2002; Elmuti et al., 2005). Firms on the other hand prefer research that results in commercially viable products, services, innovative processes and problem solving (Elmuti et al., 2005). This can further enhance the uncertainty concerning cooperative motivation mentioned earlier and thus further emphasizes the importance of trust in these collaborations.

In a study on R&D alliances by biotechnology firms, Rothaermel and Deeds (2006, p. 437) argue that alliances with research institutes (upstream alliances) demand 'the highest level' of the AMC of firms, compared to other types of alliances (horizontal and downstream alliances). The knowledge involved in these alliances is generally new and the value of it is evolving, and thus requires continuous monitoring and re-evaluation. Also, it is unclear how the partners are going to advance this knowledge into a viable product or process. Furthermore the partners have distinctively different values and priorities that can be in conflict with the firm's need for secrecy and protection of intellectual property (Rothaermel and Deeds, 2006). Again, these additional challenges put more emphasis on the importance of trust and coordination in these alliances.

These challenges and differences between firms and research institutes raise the question of what research institutes like universities on their end do an organizational level to deal with these challenges. In other words: how do universities manage alliances?

2.3. Alliance Life Cycle and Key Drivers

Previous research identified that there are three main phases in the life cycle of an alliance. Also each phase has several 'key drivers' that are critical for alliance success (Kale and Singh, 2009). These three phases and key drivers are presented in figure below.

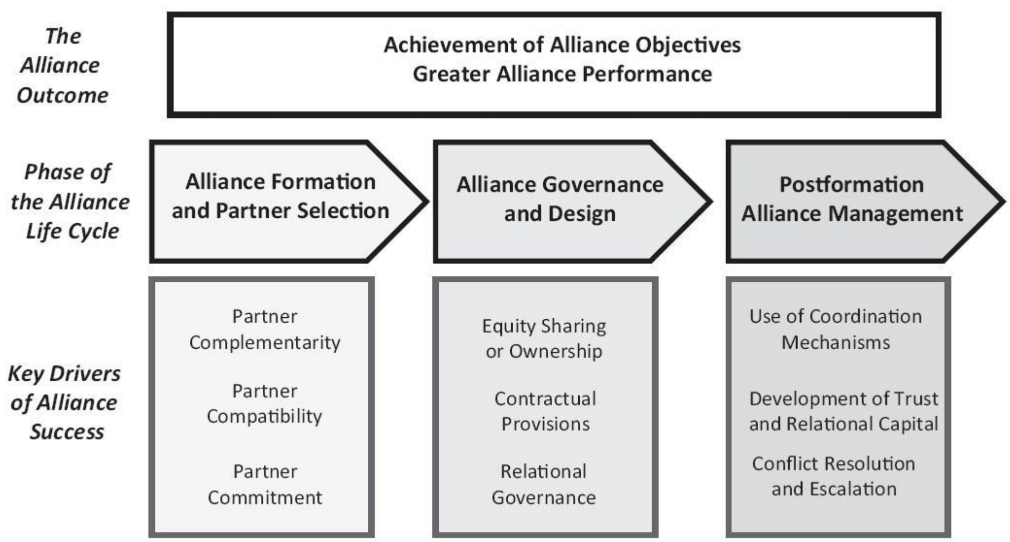


Figure 2.1: The alliance life cycle and key drivers of alliance success: Kale and Singh, 2009, p. 48

The alliance formation and partner selection phase is about selecting an appropriate partner. The key drivers in the formation phase are partner complementarity, partner compatibility, and partner commitment. Partner complementarity is the extent to which non-overlapping resources can be contributed to the alliance. Partner compatibility refers to the fit in working styles and cultures of the partner. Partner commitment refers to the willingness of a partner to contribute resources and to make short-term sacrifices to realize longer-term benefits (Kale and Singh, 2009).

In the alliance governance and design phase the key drivers are mechanisms to address governance issues in an alliance. The key drivers are equity sharing or ownership, contractual provisions and relational governance. Equity sharing or ownership means that alliance partners take an equity stake in each other or create a new venture wherein both partners take a stake. This can have several benefits for the governance of an alliance. First is that the shared equity aligns the mutual interests of the partners. This is also referred to as 'mutual hostages'. Second, equity facilitates supervision to monitor the functioning of the alliance. Finally, equity ownership sets a basis for the share of the return, dependent on the level of ownership (Kale and Singh, 2009). Contractual provisions helps manage exchange hazards in several ways. Contracts help specify various issues like mutual rights and obligations, inputs to the alliance, process of exchanges, how disputes will be resolved and expected outputs from the relationship. Other benefits of contractual provisions are enforcement provisions related to IP protection and provisions that facilitate the coordination that is required between the alliance partners (Kale and Singh, 2009). The third and last key driver in the design phase is relational governance. This is governance relying on goodwill, trust and reputation. This type of governance increases the likelihood of alliance success by reducing transaction costs in several ways (less involvement from third parties to for example set up contracts). Relational governance also enables the partners to exchange resources and capabilities for initiatives that are not necessarily in the contract. Furthermore it is an effective means to monitor and control partner behavior regarding resource dependence (Kale and Singh, 2009).

The postformation alliance management phase is about actively managing the alliance after it is up and running. The key drivers in this phase are the use of coordination mechanisms, development of trust and relational capital and conflict resolution and escalation. The use of coordination mechanisms is an answer to the difficulties in aligning actions between partners. The development of trust and relational capital is critical to alliance success, because it helps partners work more cooperatively and offers protection against opportunistic behavior (Kale and Singh, 2009). Trust thus facilitates in conflict resolution, but formal methods of conflict resolution (e.g. involving third parties) become important when trust is not developed through the alliance and escalation is more likely.

What is important for this research is that the structure and content of the different phases are going to be used as a framework for this research, meaning that the collection of data and the results will be divided over the three phases (referred to later in the report as 'sub-concepts'). Also, the key drivers presented in each phase of the alliance life cycle are possible determinants for alliance success at the level of an alliance. This research is about organizational elements at the level of the universities. The relation here is that the organizational elements at the university level should be designed to establish or facilitate the key drivers at the level of the alliances.

2.4. Alliance Management Capability (AMC)

Previous research on AMC can be divided in two streams of research (Schreiner et al., 2009). The first focuses on how AMC develops and what mechanisms explain this development (Kale et al., 2002; Draulans et al., 2003; Kale and Singh, 2007; Heimeriks and Duysters, 2007). The second stream focuses on what organizational elements constitute AMC (Gulati, 1998; Kale et al., 2001; Hoang and Rothaermel, 2005; Schreiner et al., 2009). This study will use insights from both research streams and will contribute mainly to the second research stream, as it will identify the organizational elements of AMC within Dutch universities.

Even though there has been research on AMC, researchers have also identified that there are methodological barriers to the empirical investigation of AMC. The fact that 'capability' in general is inherently unobservable has made empirically investigating AMC a challenging task. This intangibility of capabilities is reflected in the various definitions of AMC that researchers have used, such as "a higher-order resource" (Heimeriks and Duysters, 2007, p.30), "a multidimensional construct" (Schreiner et al., 2009, p. 1400) and "ability to effectively manage multiple alliances" (Rothaermel and Deeds, 2006, p. 431). Therefore researchers have resorted to identifying the observable and measurable premises and consequences of these (unobservable) capabilities (Kale et al., 2002; Rothaermel and Deeds, 2006; Heimeriks and Duysters, 2007; Schreiner et al., 2009).

These observable and measurable premises and consequences include organizational functions, processes and tools (Kale et al., 2002; Rothaermel and Deeds, 2006; Heimeriks and Duysters, 2007; Schreiner et al., 2009). These premises and consequences are referred to as 'organizational elements' in this research. Consequently the definition of AMC in this research is as follows*: AMC is a higher order resource relying on organizational elements to manage alliances.* In relation to figure 2.1 shown earlier (p. 11), these organizational elements should contribute to managing each phase of the alliance life cycle. Previous research on inter-firm alliances has identified some organizational elements that positively affect several of the key drivers of alliance success presented in figure 2.1.

Kale et al. (2002) identified that having a dedicated alliance function that coordinates alliance-related activities and captures prior alliance experience generates value from alliances in different ways. A dedicated alliance function (a) increases tacit knowledge regarding alliance management and facilitates the dissemination of alliance know-how, (b) helps to increase visibility on the market in terms of new alliances and outcome of current alliances, (c) increases probability of accessing and coordinating resources to support alliance activities and (d) motivates the organization to create systems and metrics to evaluate alliance performance. These benefits contribute to effectively handling the three phases of the alliance life cycle. Increasing knowledge concerning alliances contributes to all phases of the life cycle, since an organization will generally be better informed on how to handle alliance related activities. Increasing visibility on the market can contribute to the formation phase, as other organizations are likely to prefer a partner with more alliance experience. Increasing the probability of accessing and coordinating resources for alliance activities contribute to the post-formation phase where one of the key drivers is 'use of coordination mechanisms'. Demonstrating the ability to access and coordinate resources for alliance activities can also contribute to developing trust among parties. Developing systems and metrics to evaluate alliance performance can be used to reflect on decisions made concerning the alliance. This could reveal that different governance structures or coordination mechanisms are more beneficial for one or more parties involved in the alliance.

Heimeriks and Duysters (2007) conducted an empirical investigation on the development of alliance capability and identified some (deliberate) learning mechanisms that they see as the building blocks of 'organizational routines' that form the organization's alliance capability. These learning mechanisms are grouped in categories. The categories and some examples of learning mechanisms within each category are presented in table below. The table presents mechanisms in the form of functions, tools, processes and external parties to capture alliance management knowledge. For instance, having an organizational function in the form of a department or manager, dedicated to alliance management serves as a centerpiece for capturing this knowledge. Leveraging alliance management knowledge can be done by employing an organizational tool such as alliance training.

Category	Examples of learning mechanisms
Functions	alliance department, Vice-President of alliances, alliance manager
Tools	internal and external alliance training, partner selection programme, alliance database
Control and management processes	rewards and bonuses for alliance managers, alliance metrics
External parties	consultant, lawyer, mediator

Table 2.1: Alliance learning mechanisms, source: Heimeriks and Duysters, 2007, Appendix 1, p. 44

Heimeriks et al., (2009) conducted a research where they identified how important certain practices for alliance capability development are, labeled as ‘solutions’, for certain alliance portfolio sizes. These solutions for alliance capability development are similar to those in the research of Heimeriks and Duysters (2007), presented in table 1. The solutions are classified in four categories. These are (1) functional and staffing solutions, (2) tool-based solutions, (3) management processes and training solutions and (4) third party solutions. The table below presents these categories, along with descriptions and examples of solutions.

Solution category	Descriptions
1. Functional and staffing solutions	Units or functions within units which are mandated with responsibility for managing and coordinating alliance activities within the firm e.g. alliance manager, Vice-President of alliances, alliance department.
2. Tool based solutions	Instruments containing guidelines on alliance management issues within different stages of the alliance-life cycle. E.g. partner selection protocol, joint business planning, codified best practices.
3. Training solutions	Programs organized internally or externally to nurture understanding of and accountability for critical issues in alliance management for the employees involved. E.g. in-house company courses, intercultural training programs, courses by external experts.
4. Third-party solutions	Outside experts who provide specialized content related, for instance, to conflict mediation, legal issues, financing, and alliance management. E.g. consultants, financial experts, mediators, legal experts.

Table 2.2: Solutions for alliance capability development, source: Heimeriks et al., 2009, p. 98

The benefits of having a dedicated function (or entire staff) responsible for coordinating alliance activities and how they benefit the different phases in the alliance life cycle has already been discussed earlier (p. 13). Other learning mechanisms and solutions shown in table 2.1 and 2.2 can also be linked to some of the key drivers in the different phases of the alliance life cycle shown in figure 2.1. Using a tool (or tool-based solution) like a partner selection programme contributes to the formation phase by providing a more formal and standardized approach to selecting a partner. It can help an organization solidify its knowledge from past experience and reduce the likelihood of selecting inappropriate partners (Heimeriks et al., 2009). Other tools help disseminate alliance related knowledge in general which is useful for all phases of the alliance life cycle. Tools like joint-business planning and training contribute to the post-formation phase. Joint-business planning helps coordinate activities and has the potential to reduce conflicts and aid in joint problem-solving activities. Training provides employees with insights on different aspects of alliance management and allows learning from different alliances at firm, alliance and individual levels (Heimeriks et al., 2009). Involving third parties can contribute to the design and post-formation phase by for instance hiring lawyers to set up contracts for the governance of the alliance. Third parties can also contribute to practical problem solving, developing alliance specific know-how, but also act as independent objective mediator in for example planning and conflict resolution (Heimeriks et al., 2009).

Schreiner et al. (2009) argue that AMC comprises three distinct skills, or dimensions. These are coordination, communication and bonding. Several items were used to measure the firm’s ability in each dimension of AMC. The measured items are not mentioned in the research, but the abilities, processes and behavior that that they should represent in each dimension were. The dimensions and some examples of related abilities, processes and behavior are presented in the table below. As the authors of this article clearly state, the study emphasizes skills that are relevant for managing alliances after they are up and running, thus referring to the post-formation phase of the alliance life cycle.

Dimension	**Examples of related ability, process and behavior**
Coordination	Adaptation to its partner's work processes.
Communication	Ability to convey information that enables a partner to understand its market position, competencies, organizational features and value propositions.

Bonding	Attentive, considerate and supportive behavior toward the partner.

Table 2.3: AMC in dimensions and examples of related ability, process or behavior, source: Schreiner et al., 2007, p. 1406-1407

Heimeriks and Schreiner (2010) propose that 'relational quality' is a mediator between alliance capability and alliance performance. Relational quality consists of four aspects, namely commitment, trust, information sharing and communication, and conflict. Each of these aspects mediates between alliance capability and alliance performance in specific ways. Examples of organizational elements given in this research are alliance department, training and evaluation programs, databases and involvement of third parties.

Sluyts et al. (2010) also conducted a study on alliance capability, where they present organizational elements in the form of 'methods' and 'mechanisms' a firm can use to deploy or transfer capabilities. In their research they organized methods and mechanisms in the categories 'actions', 'structure', 'technology' and 'people'. This is similar to the organizational elements in the form of functions, processes and tools, used in this research. Examples of organizational elements from Sluyts et al. (2010) are alliance manager, involvement of external specialists, alliance database, alliance metrics and alliance training.

In this research AMC will also be investigated by identifying organizational elements on which AMC relies. Organizational elements in this research are divided in four dimensions. These are organizational functions, processes, tools and the involvement of third parties. The definitions of organizational functions, tools and the involvement of third parties is based on the ones defined in Heimeriks et al. (2009), wherein; functions are units or functions within units which are mandated with responsibility for managing and coordinating alliance activities, tools are instruments containing guidelines on alliance management issues and the involvement of third parties is defined by outside experts who provide specialized content to the management of an alliance. An organizational process is defined as a pattern of behavior to create and/or transfer alliance management knowledge.

2.5. Conceptual model

Some of the organizational elements mentioned in the previous section, like having an alliance department, training programs and the involvement of third parties, do not refer to any specific phase of the alliance life cycle. Therefore a fourth 'sub-concept' is introduced that does not refer to any phase of the alliance life cycle, named 'general organizational elements of alliance management'. Figure 2.2 below presents the conceptual model on how this concept is incorporated in the framework of concepts and how this and the concepts described earlier are linked to each other.

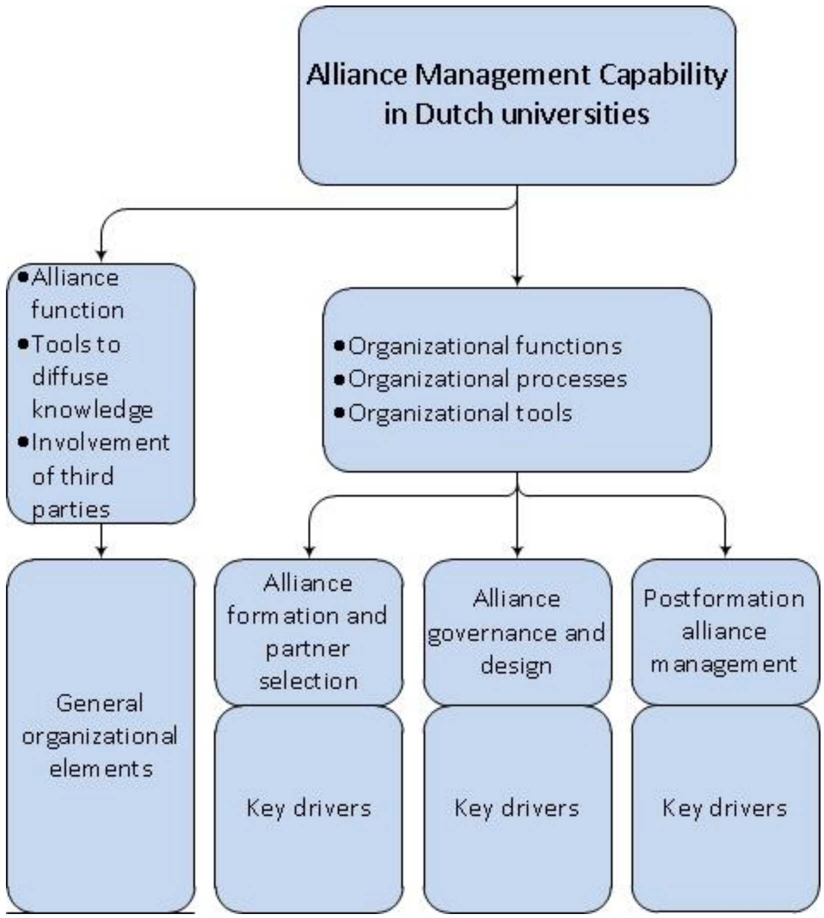


Figure 2.2: Conceptual model for research on alliance management capabilities in Dutch universities

3. METHODOLOGY

3.1. Research design

A case study approach was chosen as the research strategy for this research. So what exactly is the case in this research? The case is 'Dutch universities'. More specifically, the case is publicly funded Dutch research universities. The Netherlands has fourteen public research universities. These are listed in the table below.

Research universities in the Netherlands	
Delft University of Technology	Tilburg University
Eindhoven University of Technology	University of Amsterdam
University of Twente	University of Groningen
Erasmus University Rotterdam	Utrecht University
Leiden University	VU University Amsterdam
Maastricht University	Open Universiteit Nederland
Radboud University Nijmegen	Wageningen University

Table 3.1: Public research universities in the Netherlands

Five of these universities have a specific focus. The universities of Delft, Eindhoven and Twente are universities of technology. The university of Wageningen focuses on agriculture and life sciences. Open Universiteit Nederland is a distance teaching university.

The aim for this research is to provide descriptive information of organizational elements that constitute AMC in Dutch universities. For this purpose a descriptive case study approach was chosen as a research design, as this is a widely used method for constructing theory, in this case in the form of descriptive information (Yin, 1984). Eisenhardt (1989, p. 535) also indicates that providing description is one of the aims that can be accomplished using a case study approach.

Four major types of designs are possible for a case study approach. First there is a distinction between a single-case study and a multiple-case study design. A multiple-case study simply means that there are multiple defined cases that are going to be analyzed. This approach allows for a comparison between the different cases to possibly find striking similarities or differences. The second distinction to be made is between a holistic and an embedded design. Both of these designs can occur in combination with either a single- or multiple-case study approach. A holistic design means that there is just a single unit of analysis within the case, whereas an embedded design means that there are multiple units of analyses (Yin, 1984; Eisenhardt, 1989). The table below summarizes the four possible designs for a case study approach.

	Single-Case Designs	Multiple-Case Designs
Holistic (single unit of analysis)	Type 1	Type 3
Embedded (multiple units of analysis)	Type 2	Type 4

Table 3.2: Possible case-study designs

As previously mentioned, the case in this research is Dutch universities. Within this case there are multiple units of analyses, namely the different universities. Therefore the case-study design used in this research is an embedded single-case design.

As in most case studies, a combination of data collection methods was used in this research. Data collection in this research was conducted through face-to-face interviews and desk research. The following sections will further elaborate on the operationalization, data collection and data analysis.

3.2. Operationalization

Two main concepts were elaborated in the theoretical background (chapter 2); these were the 'alliance life cycle' and 'alliance management capability (AMC)'. The alliance life cycle represents the three main phases in the life cycle of any alliance, which have been identified in previous research (Gulati, 1998; Kale and Singh, 2009; Schreiner et al., 2009). These are the alliance formation and partner selection phase, the alliance governance and design phase and the postformation alliance management phase. Each of these phases also has several 'key drivers' that are important for alliance success. The different phases and key drivers are presented in figure 2.1. As for AMC, this concept is defined as: '*a higher order resource relying on organizational elements to manage alliances'.* These organizational elements consist of functions, processes, tools and the involvement of third parties. This section will explain how these concepts are operationalized in this research.

First the alliance life cycle was used as a framework through which data was collected and analyzed. One of the data collection methods was conducting interviews. The structure of the interview used in this research consists of four sub-concepts (see appendix 2). Three of these four sub-concepts in the interview are about each of the three phases of the alliance life cycle, which is one of the main concepts. During the interviews the three different phases were explained to the participants. They were then presented general statements on whether the university has organizational functions, processes or tools regarding a particular phase of the alliance life cycle.

Also, the publicly available data and privately obtained documents were analyzed divided over the three different phases of the alliance life cycle. This way, organizational elements for each phase of the alliance life cycle could be derived separately.

As mentioned in section 2.3. (p. 13), the organizational elements at the university level should be designed to establish or enhance the key drivers at the level of the alliances. Therefore the key drivers in the alliance life cycle will be used to explain the (possible) function of certain organizational elements that are identified in the universities.

As mentioned earlier, to investigate AMC, researchers have to look for observable and measurable premises and consequences of this capability. These include organizational functions, processes and tools (Kale et al., 2002; Rothaermel and Deeds, 2006; Heimeriks and Duysters, 2007; Schreiner et al., 2009). Therefore the operationalization of the concept AMC in this research is also conducted with these organizational elements. As explained in section 2.4. (p. 17), organizational elements in this research are divided in four dimensions. These are organizational functions, processes, tools and the involvement of third parties. The definitions of these dimensions are further explained there. The interviewees were presented general statements on whether the university has organizational functions, processes or tools regarding a phase of the alliance life cycle. If so, they were asked to describe these organizational functions, processes and tools. If not, how is it handled then? The definitions and examples of functions, processes and tools, based on the ones identified in previous research, were given to clarify the statements in the interview. In addition, for the sub-concept of 'general organizational elements' they were also asked about the involvement of third parties. The reason that the involvement of third parties is part of general organizational elements is that third parties can be involved for various issues that do not specifically refer to any phase of the alliance life cycle.

The table on the next page presents an overview of the operationalization described above. The purple area shows where the main concepts 'alliance life cycle' and 'alliance management capability' overlap. The definitions of the dimensions are explained at the end of section 2.4. (p. 17).

<table>
<tr><th></th><th>Sub-concepts</th><th>Definitions</th><th>Dimensions</th><th>Measurement</th><th></th></tr>
<tr><td rowspan="3"></td><td rowspan="3">General organizational elements</td><td rowspan="3">Organizational elements not referring to any of the three phases in the alliance life cycle.</td><td>Organizational function for handling alliance related activities.</td><td rowspan="7">Coding of interview transcripts, publicly available data, privately obtained documents</td><td rowspan="7">Alliance Management Capability (AMC)</td></tr>
<tr><td>Tools to diffuse knowledge concerning alliance management.</td></tr>
<tr><td>Involvement of third parties.</td></tr>
<tr><td rowspan="4">Alliance life cycle</td><td>Alliance formation and partner selection</td><td>The phase of an alliance where the organization selects a partner to collaborate with (Kale and Singh, 2009).</td><td>Organizational functions, processes and tools.</td></tr>
<tr><td>Alliance governance and design</td><td>The phase of an alliance where the organization (and its partner) constructs governance (Kale and Singh, 2009).</td><td>Organizational functions, processes and tools.</td></tr>
<tr><td rowspan="2">Postformation alliance management</td><td rowspan="2">The phase of an alliance wherein, on an ongoing basis, the alliance is managed by the organization (Kale and Singh, 2009)</td><td>Organizational functions, processes and tools to manage ongoing alliance.</td></tr>
<tr><td>Organizational functions, processes and tools to improve relationships with partners.</td></tr>
</table>

Table 3.3: Operationalization of the concepts

3.3. Data collection

The data gathered in this research come from publicly available data, privately obtained documents and semi-structured interviews. Examples of publicly available data are information and documents from the websites of the universities. The interviews were conducted face-to-face at the universities and were transcribed afterwards. The interview used in this research can be found in appendix 2 and the interview transcripts in appendix 3. Privately obtained documents can be found in appendix 4. The list of publicly available data is presented in appendix 5

Data on these organizational elements was collected through interviews, publicly available data and privately obtained documents. The interviews were transcribed and analyzed, using the process of coding. This will further be explained in section 3.4.

The Netherlands has fourteen public universities that conduct research. Six of these universities were able and willing to participate in this research within the available time frame. The following universities participated in this research:

- Delft University of Technology
- Erasmus University Rotterdam
- Leiden University
- Utrecht University
- VU University Amsterdam
- University of Amsterdam

The aim was to have at least two informants questioned from each university to enhance validity and to have data from multiple perspectives in the universities. However not every university was able to schedule two informants within the available time frame. A total of ten informants from these universities participated in this research. The universities of Leiden, Utrecht, Amsterdam and the VU Amsterdam each provided two informants, while only one informant from the universities of Delft and Rotterdam participated.

All the participants in this research are employees in either the central administration of the university or at the technology transfer office-/valorization center-like departments. These are departments that are set up mainly to transfer knowledge, technology and skills from the university to external parties that can further develop and exploit these resources.

As for the informants that participated in the interviews, they were asked to fill in a form containing the following information:

- Name;
- Function title;

- How long he/she has been working in the university (in years);
- How knowledgeable he/she deemed him-/herself of the organization;
- How knowledgeable he/she deemed him-/herself about the alliance management practices in the university.

The last two were measured on a four-point likert scale. This is similar to the approach used in Schreiner et al. (2009) to identify informants. Schreiner et al. (2009) used this to verify that they used the right informants and to identify the following two criteria: (a) possession of sufficient knowledge about their organization's alliance activities and (b) adequate level of involvement in the issues under investigation. For this research, this approach also serves as a verification that the right informants participated in this research.

On the latter two questions of the form, only three of the ten informants answered with less than a three on one of the two questions, on the four-point likert scale. The minimum time of an informant working at a university was one year. This was the newly appointed director of the Technology Transfer Office at the VU University Amsterdam. The form used to identify the informants is presented in appendix 1.

The type of alliances considered in this research includes collaborations with for example private firms, other Dutch universities, international universities and research institutes.

3.4. Data analysis

Yin (1984, p. 99), in his book on case study research, states that "data analysis consists of examining, categorizing, tabulating, or otherwise recombining the evidence, to address the initial propositions of a study". One of two general analytic strategies in case studies is 'developing a case description' (Yin, 1984). This involves developing a descriptive framework for organizing the case study. In this research this general analytic strategy was followed by using a framework (or structure) that is based on the conceptual model (figure 2.2., p. 18). The conceptual model consists of four sub-concepts. The first sub-concept is about general organizational elements that do not refer to any specific phase of the alliance life cycle. The remaining three sub-concepts represent each phase of one of the main concepts, the alliance life cycle. Every sub-concept in turn consists of dimensions. So the analysis will also follow this structure of four sub-concepts and their dimensions. The sub-concepts and dimensions are as follows:

1. General organizational elements in alliance management:
   a. *Organizational function (department/staff) for alliance related activities;*
   b. *Tools to diffuse knowledge concerning alliance management;*
   c. *Involvement of third parties in managing alliances;*
2. Alliance formation and partner selection phase:
   a. *Organizational functions, processes and tools;*
3. Alliance governance and design phase:
   a. *Organizational functions, processes and tools;*
4. Post-formation alliance management phase:
   a. *Organizational functions, processes and tools to manage ongoing alliances;*
   b. *Organizational functions, processes and tools to improve relationship with partners;*

The reason why there is a separation in analysis of dimensions in the first and fourth sub-concept is to address specific aspects that are relevant in that sub-concept, based on previous research. In the first sub-concept it is the presence of a general alliance function (Kale et al., 2002), the diffusion of alliance management knowledge (Heimeriks et al., 2009) and the involvement of third parties (Heimeriks et al., 2009). In the fourth sub-concept there is additional specific attention for the development of trust and relational capital (Kale and Singh, 2009).

As the sub-concepts and the corresponding dimensions are already established, the selection process for key information to be used from the collected data is straightforward. All four sub-concepts consist of either of the following dimensions:

- Organizational function;
- Organizational process;
- Organizational tool;
- Involvement of third parties (this one only applies to the first sub-concept).

Having established the dimensions related to the (sub-)concepts the process of 'coding' (Corbin and Strauss, 1990; Bryman 2008) could be conducted. This process involves labeling, compiling and organizing data, based on ‘core categories’, or in this case (sub-)concepts, adopted from the conceptual framework, research questions, problem areas etc. (Miles and Huberman, 1988). The used codes for the different dimensions in the sub-concepts are listed in the table below.

Sub-concepts	Dimensions	Codes
General organizational elements	Organizational function Organizational tool Involvement of third parties	GE-OF GE-OT GE-ITP
Alliance formation and partner selection	Organizational function Organizational process Organizational tool	AFP-OF AFP-OP AFP-OT
Alliance governance and design	Organizational function Organizational process Organizational tool	AGP-OF AGP-OP AGP-OT
Postformation alliance management	Organizational function Organizational process Organizational tool	PMP-OF PMP-OP PMP-OT

Table 3.4: Codes used for data analysis

The coded data from the universities will provide a description on the organizational elements the universities employ for each sub-concept. Having done this for each sub-concept provides a complete picture of organizational elements that the universities employ to manage their alliances in general and in each specific phase of the alliance life cycle. The coded data is derived from the interviews, publicly available data and privately obtained documents. For some sub-concepts and related dimensions, little publicly available data can be found. This mainly applies to the postformation alliance management phase. This is not strange, because the websites that supply this publicly available data serve mainly as advertisement for the university and as a source of practical information for students and other visitors.

3.5. Research quality

Validity

To construct validity in this research, multiple informants were questioned at most (four out of six) of the universities where interviews were conducted. Also where possible multiple data sources were used to derive results. Furthermore, most (seven out of ten) of the informants that participated in the interviews indicated to (very) knowledgeable about the organization and its alliance management practices. The other three indicated to be averagely, or slightly less, knowledgeable on either the organization as a whole or the alliance management practices. Internal validity is not relevant for descriptive case studies (Yin, 1984, p. 38). External validity is also not relevant, as the aim of this study is not to generalize the results beyond the case of this research.

Reliability

The objective of establishing reliability in scientific research is that “if a later investigator followed exactly the same procedures as described by an earlier investigator and conducted the same case study all over again, the later investigator should arrive at the same findings and conclusions” (Yin, 1984, p. 40). Reliability in this research will be insured by providing the interview, the transcripts and the all the used publicly available data in the appendices. Also, chapter 3, regarding the methodology provides an elaborated description of the data and methods used to arrive at the results of this research. Furthermore the recordings of the interviews can be supplied (on request).

4. RESULTS

The results of the data analysis described in this section are derived from the coded data of the interview transcripts, publicly available data from the website of the universities and privately obtained documents from the universities. Unfortunately, little data could be obtained from Wageningen University and the Open Universiteit Nederland from publicly available sources.

4.1. General organizational elements in alliance management

This section refers to general organizational elements in alliance management. Data was gathered about three general organizational elements. These are (a) whether they have an organizational function (department or staff) responsible for handling alliance related activities, (b) whether they use tools to diffuse knowledge concerning alliance management among employees and (c) whether third parties are involved in managing the universities' alliances. The following results were derived from the data. An overview of identified general organizational elements in Dutch universities can be found in table 4.1 on the next page.

4.1.1. Organizational function for alliance related activities

The data obtained from the different universities on this organizational element show that almost all (twelve out of fourteen) Dutch universities have departments and individual functions that are responsible for (some) alliance related activities. These departments and individual functions are however not involved in all the alliances of the universities (S. Tan, interview, May 7, 2012; M. Leenen, interview, October 9, 2012). M. Leenen (interview, October 9, 2012) from the Technology Transfer Office of the University of Amsterdam stated in the interview that "whether the TTO is involved in an alliance depends on the level on which an alliance is established". The main purpose of these departments and individual functions in regard to external collaboration is to aid the researchers and serve as a stepping stone for them (Leidraad contractactiviteiten TU Delft, 2008; Jaarverslag 2011, Universiteit Leiden). Some of their activities include scouting inventions internally and searching for partners for further development, supporting researchers in setting up research proposals and setting up licenses and agreements in their collaboration with external parties (Leidraad contractactiviteiten TU Delft, 2008; The Value of Knowledge, 2008).

	General organizational elements		
University	**Organizational function**	**Organizational tool**	**Involvement third parties**
Delft University of Technology	Valorization Centre	Document: Leidraad contractactiviteiten (2008) Training on subsidies, subsidy requests, financial and legal aspects of subsidies and project management	
Eindhoven University of Technology	TU/e Innovation Lab		
University of Twente	Cluster Onderzoek en Valorisatie; onderdeel strategische positionering en profilering		
Erasmus University Rotterdam	EUR Holding B.V.		
Leiden University	Leiden University Research and Innovation Services (LURIS)	Document: Instructions on working with third parties (2008)	
Maastricht University	Maastricht University Holding B.V. and Contract Research Centre	Training and coaching of research by the Contract Research Centre	
Radboud University Nijmegen	Knowledge & Technology Transfer Office		
Tilburg University	Department Kennisklik		
University of Amsterdam	Technology Transfer Office		
VU University Amsterdam	Technology Transfer Office	Training course 'market and research'	
University of Groningen	Transfer & Liaison Groep and Technology Transfer Officers		
Utrecht University	Utrecht Valorization Center	Training, workshops and readers on external collaborations and valorization	
Open Universiteit Nederland			
Wageningen University			

Table 4.1: General organizational elements in Dutch universities

What was additionally derived from the interviews conducted at the universities is that the functions and responsibilities concerning alliance related activities are decentralized over the level of the board (central), the faculties, sub-departments of the faculties and even individuals (E. Stiekema, interview, May 10, 2012; F. Los, interview, September 5, 2012). S. Tan (interview, May 7, 2012), Director of the Technology Transfer Office of the VU Amsterdam stated that "the university is basically a collection of independent research groups that work under the same umbrella, but they are very autonomous. This is characteristic for scientists. They can be stubborn, make their own decisions and decide whether they want to involve the TTO in the collaboration. For simple collaborations they negotiate them themselves". The reasons given for this are the separation of the faculties, the inherent autonomy of scientists and employees with responsibility for their 'terrain' being able to handle the responsibility for their involvement in alliances as well (S. Tan, interview, May 7, 2012; F. Los, interview, September 5, 2012). So the departments that are set up to focus on alliance related activities are only involved in a portion of the alliances that the universities are involved in.

4.1.2. Tools to diffuse knowledge concerning alliance management

Only five of the Dutch universities indicate to use tools to diffuse knowledge concerning alliance management. These tools are documents with guidelines, training, workshops and courses (Universiteit Maastricht, 2012, Contract Research Centre; Instructions on working with third parties, 2008). Data derived from the interviews further explain that these trainings, workshops and courses are generally focused on specific subjects such as legal and financial aspects (E. Stiekema, interview, May 10, 2012), how to handle proposals for subsidized projects (H. de Groot, interview, September 4, 2012) and that these trainings etc. are visited by few people (S. Tan, interview, May 7, 2012).

4.1.3. Involvement of third parties

No indications could be derived from the data that any university involves third parties to manage alliances <u>at the level of the university</u>. Third parties are only involved at the alliance level and only in certain alliances. The interviews conducted at Utrecht University and Leiden University indicate that for certain (subsidized) projects, a third party can be involved (E. Stiekema, interview, May 10, 2012; F. Los, interview, September 5, 2012). These are mainly involved in the operational management of the alliances. F. Los (interview, September 5, 2012) from Leiden University stated for a particular alliance that "we have involved two people from outside the organization. One of them is responsible to guide the meetings between the boards of the three universities. This is a person who prior to this has done a similar job at the NS (Dutch Railways). We also had a project coordinator to guide the more operational activities in the alliance".

To summarize, almost all Dutch universities have departments that are responsible for (some) alliance related activities. These departments are however not involved in all the alliances of the universities. The functions and responsibilities concerning alliance related activities are decentralized over the level of the board (central), the faculties, sub-departments of the faculties and even individuals. Only a few universities use tools in the form of documents, training, workshops and courses to diffuse knowledge concerning alliance management. Finally, third parties are only involved at the level of the alliances and mainly for operational management purposes.

4.2. Alliance formation and partner selection

This section concerns the first phase of the alliance life cycle, which is the alliance formation and selection phase. Data was gathered about organizational functions, processes and tools that are set up or involved in selecting/deciding on an alliance partner. The following results were derived from the data. An overview of identified general organizational elements in Dutch universities can be found in table 4.2 on the next page.

4.2.1. Organizational functions

First all the departments set up for alliance related activities that were identified in the previous section on general organizational elements, are involved in this phase of the alliance life cycle. As mentioned in the previous section, the main purpose of these departments in regard to external collaboration is to aid the researchers and serve as a stepping stone for them. A lot of these departments employ 'business developers' that search for external parties (TU Eindhoven, 2012, Technology Transfer; Leidraad contractactiviteiten TU Delft, 2008; Jaarverslag 2011, Universiteit Leiden).

	Alliance formation and partner selection		
University	**Organizational function**	**Organizational process**	**Organizational tool**
Delft University of Technology	Valorisation Centre and a separate function that follows EU subsidized projects. Technology Transfer Officers. Professors have their own network and can come up with projects	Communication between Valorisation Centre and research groups and researchers are informed by mail about subsidized projects. Valorisation Centre plans, scans and searchers for opportunities in large subsidized programs.	Training on subsidies, subsidy requests, financial and legal aspects of subsidies and project management
Eindhoven University of Technology	TU/e Innovation Lab and appointed account managers to identify needs for research at firms		Organize TU/esdays, where leading research of the university is presented to a broad audience
University of Twente	Cluster onderzoek en valorisatie; onderdeel strategische positionering en profilering		
Erasmus University Rotterdam	Erasmus Foreign Services		Bibliometric analysis
Leiden University	Leiden University Research and Innovation Services (LURIS). Network of individuals.		Bibliometric analysis
Maastricht University	Contract Research Centre		
Radboud University Nijmegen	Knowledge & Technology Transfer Office		
Tilburg University	Kennisklik		UvT Sociëteit
University of Amsterdam	Technology Transfer Office	Communication between researchers and Technology Transfer Office. Business developers within the TTO search for external parties that match available knowledge	Industry Days
VU University Amsterdam	Technology Transfer Office and networks of key opinion leaders	Bilateral process: Scouting of researchers internally and partners externally for matches, by the TTO	Industry Days
University of Groningen	Transfer & Liaison Groep and Technology Transfer Officers		Document for researchers: The Value of Knowledge (2008)
Utrecht University	Utrecht Valorization Center and individual researchers		
Open Universiteit Nederland			
Wageningen University			

Table 4.2: Organizational elements for alliance formation and partner selection in Dutch universities

The universities of Delft, Eindhoven and Groningen have additional formal functions involved in this phase. These functions at the universities of Delft and Groningen are ‘Technology Transfer Officers’ who are responsible for aiding researchers, searching and establishing contact with external parties and facilitating communication between the researchers and the Valorisation Centre/ Transfer & Liaison Groep (H. de Groot, interview, September 4, 2012; Waardevolle Wetenschap, 2010, p. 17; The Value of Knowledge, 2008, p. 7).

What is further derived from the conducted interviews is that the network of individuals is important in alliance formation and partner selection (H. de Groot, interview, September 4, 2012; E. Beerkens, interview, September 5, 2012; S. Tan, interview, May 7, 2012). These individuals can be researchers or members of the board. S. Tan (interview, May 7, 2012), from the Technology Transfer Office of the VU Amsterdam stated that “there is the issue of trust. The key opinion leader prefers to work with a partner he or she is comfortable with. These are usually partners from his or her own network”.

From a theoretical perspective this partner selection through individual networks can have several benefits for the commitment to the collaboration, the governance and the management. Forming an alliance with a party from an established network means that there has already been some (positive) interaction with this party and a degree of trust has already been established. This is because according to Kale and Singh (2009, p. 50) “trust develops through a cyclical process of bargaining, interaction, commitment, and execution between the concerned firms”, or in this case, between the concerned parties. This trust benefits key drivers in all three phases of the alliance life cycle, namely ‘partner commitment’ in the first phase, ‘relational governance’ in the second phase and the ‘development of trust and relational capital’ in the last phase. Trust also facilitates in conflict resolution and prevents escalation, which is also a key driver in the last phase (Kale and Singh, 2009).

4.2.2. Organizational processes

As for organizational processes; based on the description of activities of the technology transfer-/valorization centre-like departments (p. 29) and some of the interviews done, it seems that these departments facilitate in a bilateral process of scouting for researchers internally that match the available projects externally and, searching for parties externally that match the inventions and knowledge internally (Leidraad contractactiviteiten TU Delft, 2008; The Value of Knowledge, 2008; M. Leenen, interview, October 9, 2012; A. Ussi, interview, May 7, 2012).

Which of the key drivers in this phase of the alliance life cycle is facilitated through these processes is dependent on the nature of the potential relationship, because the importance of partner complementarity, commitment and compatibility depends on the conditions of the alliance (Kale and Singh, 2009).

4.2.3. Organizational tools

There are also various organizational tools that some of the Dutch universities use in this phase. Leiden University and Erasmus University Rotterdam (EUR) have both indicated that they have used bibliometric analyses to search for potential partners. An example of such analysis from the EUR is presented in appendix 4 The universities of Eindhoven, Tilburg, Amsterdam and the VU Amsterdam organize days where they invite external parties and where researchers from these universities can present their knowledge and inventions (Tilburg University, UvT Sociëteit 2011; Jaarverslag 2011, TU Eindhoven, S. Tan, interview, May 7, 2012; M. Leenen, interview, October 9, 2012). The University of Groningen has a document with guidelines on how to search for external partners (The Value of Knowledge, 2008) and Delft University of Technology provides training on different aspects of subsidies (Leidraad contractactiviteiten TU Delft, 2008).

As mentioned in the previous section, the importance of the key drivers partner complementarity, commitment and compatibility depends on the conditions of the alliance (Kale and Singh, 2009). Therefore no statements can be made about which of the key drivers in this phase of the alliance life cycle is facilitated through these tools.

In summary, the departments set up for alliance related activities that were identified in the previous section on general organizational elements are involved in this phase of the alliance life cycle. A few of the universities have additional formal functions involved in this phase. Also, the networks of individuals are important in alliance formation and partner selection. There is a bilateral process of scouting for researchers internally that matches the available projects externally and, searching for parties externally that match the inventions and knowledge internally. This is facilitated by the technology transfer-/valorization centre-like departments. Furthermore, various organizational tools are employed for this phase in the form of bibliometric analyses, trainings, documents and organizing days where external parties are invited.

4.3. Alliance governance and design

This section addresses the second phase of the alliance life cycle, which is the alliance governance and design phase. Data was gathered about functions, processes and tools that are set up or involved in selecting/deciding on the governance. The following results were derived from the data. An overview of identified general organizational elements in Dutch universities can be found in table 4.3 on the next page.

4.3.1. Organizational functions

First all the departments set up for alliance related activities that were identified in section 4.1., on general organizational elements are also involved in this phase of the alliance life cycle. The only exception is the EUR Holding of the Erasmus University of Rotterdam, Wageningen University and Open Universiteit Nederland. No data could be obtained to identify their involvement in this phase. All the other departments have (legal) staff that can aid in contract negotiations and setting up contracts (M. Leenen, interview, October 9, 2012; The Value of Knowledge, 2008; A. Ussi, interview, May 7, 2012; Radboud Universiteit Nijmegen, Knowledge & Technology Transfer Office, 2012). The data shows that Delft University of Technology also has ‘contract managers’ and Utrecht University has grant/legal support offices at the faculty level (Utrecht University, Subsidies en fondsen; Routing overeenkomsten; H. de Groot, interview, September 4, 2012; Leidraad contractactiviteiten, 2008). Utrecht University and the University of Amsterdam also have a Legal Affairs department at the central level (B. Allart, interview, May 8, 2012; Utrecht University, Juridische Zaken; M. Leenen, interview, October 9, 2012).

All the universities thus have an organizational function that can facilitate in one of the key drivers in this phase, namely contractual provisions. Contractual provisions involve contracts being set up to specify various issues like mutual rights and obligations, inputs to the alliance, process of exchanges, how disputes will be resolved and expected outputs from the relationship. Apart from the benefits of clearly setting forth the issues mentioned above, there are some additional benefits of contractual provisions for the governance of alliances. These are enforcement provisions related to IP protection and provisions that facilitate the coordination that is required between the alliance partners (Kale and Singh, 2009).

	Alliance governance and design		
University	**Organizational function**	**Organizational process**	**Organizational tool**
Delft University of Technology	Valorisation Centre and contract managers within faculties	(Standard) meetings of contract managers with partners. Set up by account managers at Valorisation Centre	Document: Leidraad contractactiviteiten, 2008 and Document: Algemene voorwaarden voor het uitvoeren van opdrachten door de Technische Universiteit Delft
Eindhoven University of Technology	TU/e Innovation Lab	Compose a project team of professors, researchers, and students, or any combination thereof	
University of Twente	Cluster onderzoek en valorisatie; onderdeel strategische positionering en profilering		
Erasmus University Rotterdam			University website: contract rules regarding collaborations with external parties (requires log-in)
Leiden University	Leiden University Research and Innovation Services (LURIS)	(Standard) meetings internally (and externally) of the involved parties	Document: Instructions on Working for or with External Parties
Maastricht University	Contract Research Centre		
Radboud University Nijmegen	Knowledge & Technology Transfer Office		On the university website: regulations that describe the rules of protecting and commercializing knowledge and intellectual property within the university (requires log-in)
Tilburg University	Kennisklik		Document: Algemene voorwaarden kennisklik (2012)
University of Amsterdam	Technology Transfer Office and legal department at the level of the board	(Standard) meetings involving legal staff and deans	
VU University Amsterdam	Technology Transfer Office	(Standard) meetings with legal staff and business developers TTO. Also, to have a clear idea on how the research is going to take place in practice. communication within a department, division or faculty takes place	Document: Knowledge, Intellectual Property and the Participation of VU University and VUmc (2011)
University of Groningen	Transfer & Liaison Groep		Document: The Value of Knowledge (2008)

Utrecht University	Utrecht Valorization Center, legal department for central level and grant/legal support offices' at faculty level		Documents: Routing overeenkomsten, Basic premises of UU concerning cooperation in the sense of the indirect funding and contract funding survey, Equitable remuneration arrangement for Intellectual Property Rights. Mandate arrangements on website
Open Universiteit Nederland			
Wageningen University			Document: Positionering onderzoek bij Wageningen UR (2011)

Table 4.3: Organizational elements for alliance governance and design in Dutch universities

4.3.2. Organizational processes

As for organizational processes, the interviewees of the universities of Amsterdam, Leiden, Delft and the VU Amsterdam indicate that is customary to have meetings that take place to discuss governance issues (A. Ussi, interview, May 7, 2012; F. Los, interview, September 5, 2012; M. Leenen, interview, October 9, 2012; September 4, 2012). In an interview from the VU Amsterdam it is also mentioned that a communication process takes place within a department, division or faculty to have a clear idea on how the research is going to take place in practice (S. Tan, interview, May 7, 2012). In a brochure of Eindhoven University of Technology (Your Partner in Innovation, p. 1), on the issue of 'pricing', they state that "depending on your specific needs, we will compose a project team of professors, researchers, and students, or any combination thereof".

These are processes to discuss the type governance and design of an alliance and can therefore facilitate in establishing specific key drivers in this phase of the alliance life cycle. Which of the key drivers is facilitated depends on the outcome of these processes.

4.3.3. Organizational tools

Tools that most universities use regarding this phase are documents that mainly contain guidelines and rules about contracts and intellectual property (IP). These documents also often include rules concerning publication, academic integrity and confidentiality. The purpose of these documents is for the academic interests of the universities to be taken into account in any research and collaboration that is initiated (Positionering onderzoek bij Wageningen UR, 2011; Knowledge, Intellectual Property and the Participation of VU University and VUmc, 2011; Algemene voorwaarden kennisklik, 2012).

These tools facilitate in the processes, mentioned in the previous section, of establishing specific key drivers in this phase of the alliance life cycle. Which of the key drivers facilitated depends on the outcome of these processes.

In summary, the following organizational elements have been derived from the data that are employed by the universities for the alliance governance and design phase. First all the departments set up for alliance related activities are involved in this phase of the alliance life cycle, with the exception of the EUR Holding of the Erasmus University of Rotterdam. All the other departments have (legal) staff that can aid in contract negotiations and setting up contracts. A few universities also have other functions at the faculty level and at the central level to support in governance set up. Also, it is customary to have meetings at different levels to discuss governance issues in collaborations. Most universities use tools in the form of documents that mainly contain guidelines and rules about contracts and intellectual property (IP) and to take into account the academic interests of the universities in any research and collaboration that is initiated.

4.4 Postformation alliance management

This section refers to the last phase of the alliance life cycle, which is the postformation alliance management phase. Data was gathered about two organizational elements. These are (a) whether the universities have organizational functions, processes and tools that are set up or involved in managing the ongoing alliances and (b) whether the universities use organizational functions, processes and tools to improve relationships with the alliance partners. The following results are derived from the rest of the data. An overview of identified general organizational elements in Dutch universities can be found in table 4.4 on the next page.

	Postformation alliance management		
University	**Organizational function**	**Organizational process**	**Organizational tool**
Delft University of Technology	(Scientific) project leader, assisted by experts on planning, finance, personnel and legal affairs		Document: Leidraad contractactiviteiten (2008)
Eindhoven University of Technology	TU/e Innovation Lab		
University of Twente			
Erasmus University Rotterdam	'Controller' at EUR Holding		
Leiden University	Functions with different expertise are appointed to plan and control governance arrangements		
Maastricht University	Contract Research Centre		
Radboud University Nijmegen	Knowledge & Technology Transfer Office		
Tilburg University			
University of Amsterdam			
VU University Amsterdam			
University of Groningen	Transfer & Liaison Groep, has 'project managers'		
Utrecht University	Controllers at the faculty level control the compliance of governance rules, regarding financial aspects		Database with all contracts, patents and partners and customer relationship management system
Open Universiteit Nederland			
Wageningen University			

Table 4.4: Organizational elements for postformation alliance management in Dutch universities

4.4.1. Organizational functions to manage ongoing alliances

Most of the universities have organizational functions that are involved in managing ongoing alliances. These functions are either employees at the technology transfer-/valorization centre-like departments or employed at the faculty or central level. The involvement of these functions in managing ongoing alliances consists mainly of providing support to the researchers involved in the alliances. (Leidraad contractactiviteiten, 2008; de Jong, Valorisation process @ TU/e; Erasmus Universiteit, EUR Holding BV; Radboud Universiteit Nijmegen, 2012, Knowledge & Technology Transfer Office; E. Stiekema, interview, May 10, 2012). Other than the researchers themselves, most of the interviews did not indicate the presence of other formal functions responsible for or involved in managing ongoing alliance at the level of the universities.

Having an organizational function to provide support in managing alliances can facilitate in two of the key drivers in this phase of the alliance life cycle. These are the use of coordination mechanisms and conflict resolution and escalation. Providing support through these functions can directly facilitate in conflict resolution and escalation by, for example providing legal aid. It can also help inform the involved researchers and make decisions about the mechanisms that can be used for coordination between alliance partners. There are three mechanisms to manage coordination. These are programming, hierarchy and feedback (Kale and Singh, 2009).

4.4.2. Organizational processes to manage ongoing alliances

No organizational processes could be derived from the data regarding the management of ongoing alliances.

4.4.3. Organizational tools to manage ongoing alliances

As for tools, Delft University of Technology uses a document containing rules and guidelines concerning contract research. This document also includes a section of ten pages on the management of contract research. This section outlines different phases of ‘project management’ and the activities that are relevant in each phase. It also outlines how the practice of contract research is organized within the university (Leidraad contractactiviteiten, 2008). The Utrecht Valorization Center of Utrecht University has a database that contains contracts, patents and partners and a ‘customer relationships management system’. In the interview, the participant, B. Allart (interview, May 8, 2012) stated about the database that “this is of course is a small domain of a very wide spectrum” and about the customer relationship management system that “we are now also busy to broaden and improve our customer relationship management system, that we have already, without complicating it and with all details, so that we know, beyond the borders of a faculty and knowledge institute which contacts we have, which contact person we have for that”.

Having a document like the one from Delft University of Technology with rules and guidelines concerning collaborations helps establish the use of coordination mechanisms, one of the key drivers in this phase of the alliance life cycle. This is because this document provides guidelines for 'monitoring' (Leidraad contractactiviteiten, 2008, p. 26) during a project and sets premises for coordination mechanisms that are in the interest of the university.

4.4.4. Additional results on managing ongoing alliances

In the interviews at the universities some participants also expressed some additional thoughts that are related to the conduct of management of ongoing alliances at their universities. B. Allart (interview, May 8, 2012), from the Utrecht Valorization Center at Utrecht University stated that "there is a lot to be won for universities in managing alliances after they are up and running". S. Tan (interview, May 7, 2012) from the Technology Transfer Office at the VU Amsterdam mentioned that "there is little control from the university's side on whether the conditions and rules in the contracts are adhered to. This is the most fragile and vulnerable proposition in working with industry and third parties. This is largely due to the autonomy of the researchers". M. Leenen (interview, October 9, 2012) from the Technology Transfer Office at the University of Amsterdam stated that "the Technology Transfer Office now exists for a few years, so our successes are starting to manifest and the collaborations are starting to continue. This is when you embed the experience of these collaborations into the organization. So aspects like monitoring and evaluating become relevant here. We are not there yet when it comes to this, but there is attention for now. Also the organization is very complex to properly establish this".

4.4.5. Organizational functions, processes and tools to improve relationship with partners

The data on improving relationships with alliance partners comes from the conducted interviews at the universities. For improving the relationships with the current alliance partners the universities do not have organizational functions, processes or tools that are specifically set up for this purpose. It is the responsibility of the people involved in the alliance to maintain and improve the relationship with the partners and the contact the involved parties in an alliance have is mostly work-related (S. Tan, interview, May 7, 2012; J. Overbeek, interview, October 9, 2012; F. Los, interview, September 5, 2012; H. de Groot, interview, September 4, 2012).

These organizational elements about improving relationships with partners in this section are about developing trust. Trust is beneficial in this phase because it facilitates greater information sharing, lowers the perception of risk, increases satisfaction with achieving a goal, the cooperation and the alliance in general (Schreiner et al., 2009; Kale and Singh, 2009). As mentioned in section 4.2.1., Kale and Singh (2009, p. 50) state that “trust develops through a cyclical process of bargaining, interaction, commitment, and execution between the concerned firms”, or in this case, between the universities and their partners. This means that trust can also develop by solely having work-related contact. However, employing additional organizational elements can further facilitate in this purpose.

To summarize, most of the universities have organizational functions that are involved in managing ongoing alliances. The involvement of these functions in managing ongoing alliances consists mainly of providing support to the researchers involved in the alliances. No organizational processes could be derived from the data regarding the management of ongoing alliances. Only two universities use organizational tools. Delft University of Technology has tool in the form of a document about rules and guidelines concerning contract research. The Utrecht Valorization Center of Utrecht University has a database that contains contracts, patents and partners and a customer relationships management system. However the database contains only a small portion of all the alliances and the customer relationship management system is still being improved for more extensive use. Furthermore, some of the interviewees also expressed some thoughts about the fragility of managing ongoing alliances at their university. Finally, improving relationships with current alliance partners depends mainly on the people involved in the alliance. No specific organizational functions, processes or tools are employed for this purpose.

5. CONCLUSIONS

The purpose of this research was to provide a description of the organizational elements that constitute alliance management capability (AMC) in each phase of the alliance life cycle in Dutch universities. The three phases of the alliance life cycle are 'alliance formation and partner selection', 'alliance governance and design' and the 'postformation alliance management'. Also organizational elements that do not refer to any specific phase of the alliance life cycle were investigated as 'general organizational elements'. Therefore analysis of organizational elements employed by Dutch universities was divided over four sub-concepts. One sub-concept regarding general organizational elements of alliance management and the remaining three sub-concepts related to the three phases of the alliance life cycle that were identified in previous research. The organizational elements investigated in this research were divided in four dimensions. These are organizational functions, processes, tools and the involvement of third parties.

The results of this research have provided insights on the main question of this research: *What organizational elements constitute alliance management capability (AMC) in each phase of the alliance life cycle in Dutch universities?*

As general organizational elements for alliance management, all Dutch universities have departments and individual functions that are responsible for alliance related activities. The main purpose of these departments and individual functions in regard to external collaboration is to aid researchers and serve as a stepping stone for external collaborations. However, these departments and individual functions are not responsible for all alliance related activities and are also not involved in all the alliances of the universities. The functions and responsibilities concerning alliance related activities are decentralized over the level of the board (central), the faculties, sub-departments of the faculties and even individuals. Tools to diffuse knowledge concerning alliance management are only employed by few universities in the form of documents, training, workshops and courses. Finally, third parties are only involved at the level of the alliances and mainly for operational management purposes.

The departments and individual functions that are set up to be responsible for alliance related activities are thus also involved in the alliance formation and partner selection phase of the alliance life cycle, because their main purpose is to serve as a stepping stone to external collaboration for researchers. The networks of individuals are also considered an important element in alliance formation and partner selection. There are several benefits, related to the established trust, to forming alliances with parties from these networks with regard to alliance management. There is also a bilateral process of scouting for researchers internally that matches the available projects externally and, searching for parties externally that match the inventions and knowledge internally. This is facilitated by the departments and individual functions that are set up for alliance related activities. Furthermore, various organizational tools are employed in the alliance formation and partner selection phase in the form of bibliometric analyses, trainings, documents and organizing days where external parties are invited.

The same departments and individual functions that are set for alliance related activities also facilitate in the alliance governance and design phase. A few Dutch universities also have functions at the faculty level and at the central level to support in the governance set up. As for organizational processes, it is customary to have meetings at different levels of the universities to discuss governance issues in collaborations. Almost all of the universities also use tools in the form of documents that contain guidelines and rules about contracts and intellectual property (IP) and to take into account the academic interests of the universities in any collaboration.

Many of the Dutch universities also have organizational functions that are involved in the postformation alliance management phase. The involvement of these functions in managing ongoing alliances consists mainly of providing support to the researchers involved in the alliances. Almost none of the universities have organizational tools for managing ongoing alliances. The few that do, have either a document that contains guidelines and rules regarding external collaborations or software containing data on a portion of the alliances from the university. Furthermore, some of the functions involved in alliance related activities also expressed the fragility of managing ongoing alliances at the universities. Finally, improving relationships with current alliance partners depends mainly on the people involved in the alliance.

6. DISCUSSION

This research provides two contributions to the alliance management capability (AMC) literature. First, while prior theoretical work has focused on alliance management capability in commercial firms (Draulans et al., 2003; Hoang and Rothaermel, 2005; Heimeriks and Duysters, 2007; Kale and Singh, 2007), this research attempts to provide a comprehensive description on AMC in Dutch universities. The second contribution is that AMC is studied for three different phases in the alliance life cycle, and related to the key drivers in each phase that were identified in previous research. A conceptual model (section 2.5.) was designed that shows how the concepts of AMC and alliance life cycle are linked to each other in this research.

This research shows that almost all Dutch universities have a department and individual functions that are responsible for alliance related activities. This relates to Kale et al. (2002), who identified that having a dedicated alliance function that coordinates alliance-related activities and captures prior alliance experience generates value from alliances in different ways. A dedicated alliance function (a) increases tacit knowledge regarding alliance management and facilitates the dissemination of alliance know-how, (b) helps to increase visibility on the market in terms of new alliances and outcome of current alliances, (c) increases probability of accessing and coordinating resources to support alliance activities and (d) motivates the organization to create systems and metrics to evaluate alliance performance. However, the functions identified in Dutch universities are not involved in all alliances. The functions and responsibilities in Dutch universities concerning alliance related activities are decentralized over the level of the board (central), the faculties, sub-departments of the faculties and even individuals. Whether then these departments and individual functions can be considered 'dedicated alliance functions' in Dutch universities is debatable.

Only a few of the Dutch universities use tools to diffuse general knowledge on alliance management. Tools to diffuse alliance management knowledge are important to provide employees with insights on different aspects of alliance management and allow learning from different alliances at organization, alliance and individual levels (Heimeriks et al., 2009). The reason that general alliance management knowledge is not diffused extensively at Dutch universities could be related to the diverse and decentralized character of the university and its alliances.

One of the identified organizational elements in the alliance formation and partner selection phase is that the networks of individuals are important. This partner selection through individual networks can have benefits for the commitment to the collaboration, the governance and the management of an alliance. Forming an alliance with a party from an established network means that there has already been some (positive) interaction with this party and a degree of trust has already been established. This trust benefits key drivers in all three phases of the alliance life cycle, namely 'partner commitment' in the first phase, 'relational governance' in the second phase and the 'development of trust and relational capital' in the last phase. One of the drivers of inter-firm (or in this case inter-organizational) trust is also interpersonal trust, also referred to as 'relational capital' (Kale and Singh, 2009). This trust can take away some uncertainty concerning the commitment of the partner. Trust is also an important factor in 'relational governance', which is governance relying on goodwill, trust and reputation. Alliance success is enhanced by relational governance by reducing transaction costs, enabling cooperation in initiatives that need sharing of tacit knowledge, exchanging resources that are difficult to price, and offering responses not included in a contract and finally, it is an effective way to monitor and control partner behavior when there is a dependence on a certain resource (Kale and Singh, 2009). As for the benefits of trust in the postformation alliance management phase, there are many. Examples are that it facilitates greater information sharing, perception of risk is lowered, increased satisfaction with achieving a goal, cooperation and the alliance in general (Schreiner et al., 2009; Kale and Singh, 2009). One or more of these three key drivers and their benefits that are facilitated by trust, are thus seemingly important for the individuals at the universities that collaborate with external parties.

For the alliance governance and design phase, almost all Dutch universities are identified to have an organizational function and, a lot of these universities also have processes and tools. A lot of these functions, processes and tools are related to legal issues and basic premises for collaborations. The organizational elements related to legal issues facilitate in one of the key drivers in this phase, namely 'contractual provisions'. Contractual provisions involve contracts being set up to specify various issues like mutual rights and obligations, inputs to the alliance, process of exchanges, how disputes will be resolved and expected outputs from the relationship. Additional benefits are enforcement provisions related to IP protection and provisions that facilitate the coordination that is required between the alliance partners (Kale and Singh, 2009). These organizational elements related to legal issues and basic premises for collaborations are important for universities to protect academic interests, protect the knowledge within the universities and to benefit from the knowledge within the universities. The latter is also important for acquiring second and third flow funds for the university. These funds can in turn be used to enable new research.

There are two factors that are especially important in the postformation alliance management phase. These are coordination and trust (Kale and Singh, 2009). Trust and 'relational capital building', one of the key drivers in this phase, depends on the researchers involved in the alliances on work related contact. Kale and Singh (2009, p. 50) stated that "trust develops through a cyclical process of bargaining, interaction, commitment, and execution between the concerned firms", or in this case, between the universities and their partners. This means that trust can also develop by solely having work-related contact.

Most of the Dutch universities have been identified to have organizational functions involved in managing ongoing alliances. No organizational processes were identified. Only a few universities use tools for this phase. Having an organizational functions and tools to provide support in managing ongoing alliances can facilitate in two of the key drivers in this phase of the alliance life cycle. These are the 'use of coordination mechanisms' and 'conflict resolution and escalation'. Providing support through functions can directly facilitate in conflict resolution and escalation, by for example providing legal aid. Having functions and tools can also help inform the involved researchers and make decisions about the mechanisms that can be used for coordination between alliance partners. There are three mechanisms to manage coordination. These are programming, hierarchy and feedback. Programming involves developing clear guidelines on necessary tasks, the responsibilities and the timetable for their implementation. Hierarchy refers to creating a formal role or structure with authority and decision-making ability that oversees the interactions and facilitates sharing of information and resources. Feedback involves creating mechanisms to quickly process important information and mobilize resources accordingly (Kale and Singh, 2009). In general, having organizational elements to foster knowledge-sharing can be seen as prerequisites for success (Heimeriks and Duysters, 2007). One of the reasons that most of the Dutch universities do not have organizational processes or tools to manage ongoing alliances could be related to the diverse and decentralized character of the university and its alliances. Some of the interviewees also mentioned the fragility in postformation alliance management in universities. One of the reasons for this fragility stated from one of the respondents is the autonomy of the researchers.

Limitations

This research, like any other, has some limitations. The first and probably most significant limitation is related to the size and diversity of universities. Universities consist of multiple (autonomous) faculties and institutes that focus on different disciplines in science and, universities have three different tasks they must fulfill, these are education, research and knowledge transfer. Therefore universities engage in a large variety of alliances at different levels and for different purposes. These can be at a central level (involving the board), at the level faculties, sub-departments, but also individual researchers. The term 'alliance' in this research was used in the broadest definition. This makes universities complex organizations do conduct research on alliances, due to the amount of considerations and data that has to be gathered. The interviews in this research were conducted with employees from the central department and from technology transfer office-/valorization center-like departments. However, employees faculties, their sub-departments/institutes and individual researchers might indicate different organizational elements to manage alliances that could not be identified in this research. Publicly available data from the universities also do not provide insights on organizational elements regarding alliance management at different levels.

One of the sources of data in this research was the interviews. This method was chosen because is the preferred method to obtain qualitative information about attitudes, opinions, feelings, thoughts or knowledge (Baarda and de Goede, 2006). However, there are some disadvantages to the interview method. One of the disadvantages is its reliability. People are not always aware of their own behavior and motives. People often seem to have a selective memory and mention only the positive examples. Another problem with interviews is social desirability. People generally want to make a good impression. Therefore social desirability has a major influence on the response. An attempt to minimize this was made by asking specific follow up questions during the interviews. Furthermore, there is the problem of non-response in interview. Sometimes people prefer not to directly answer questions, this is dependent on the subject and situation (Baarda and de Goede, 2006).

Also, related to the data gathering issue, the aim was to have at least two informants questioned from each of the interviewed universities to enhance validity and to have data from multiple perspectives in the universities. However not every university was able to schedule two informants within the available time frame.

Future research

An aspect that could be improved in future research on this topic is to more specifically define and, possible make a distinction in the type of alliances that are of interest for alliance management practices in universities. In addition, a distinction in alliance management capability at different levels of the universities could be applied in future research. This way a more organized overview of organizational elements that constitute AMC in universities can be generated.

Future research could also investigate the role of alliance experience in developing alliance management capability in universities. For example, some universities in the Netherlands have set up their technology transfer-/valorization centre-like departments ten years before other universities (Knowledge, Intellectual Property and the Participation of VU University and VUmc, 2011; University of Groningen, 2011, Transfer & Liaison Groep, History).

Practical implications

The pitfall for Dutch universities is the last phase of the alliance life cycle, the postformation alliance management phase. The results in this research show that Dutch universities employ the least organizational elements for this phase. Furthermore, three of the interview participants specifically mentioned the fragility of management in this phase of alliances. Coordination and trust are important in this phase. Universities can employ internal functions, processes and tools to facilitate in establishing coordination mechanisms with external partners. For example, tools can be in the form of training on what coordination mechanisms can be used and which of these mechanisms are preferred in certain types of alliances or functions with knowledge regarding this aspect can be employed to aid the researchers.

Another potential improvement for universities is to establish a more active and central role for the technology transfer-/valorization centre-like departments of the universities, with regard to external collaborations. At the moment, alliance related activities and responsibilities are decentralized which makes it difficult to maintain an overview. An example given in one of the interviews was that employees at the central level of the university could not tell one of their bigger alliance partners which researchers were involved in their alliance (luckily, this was also the other way around). Having a more centralized dedicated alliance function can help coordinate the strategic and operational side of alliances and act as a focal point and facilitate more systematic processes for codifying, learning and leveraging alliance know-how (Kale and Singh, 2007; Kale et al., 2002).

APPENDIX 1: INFORMANT IDENTIFICATION FORM

Participant's name: Function:					
How long have you been working in your organization (in years)?:	….. years				
		Not knowledgeable		*Very knowledgeable*	
How knowledgeable do you deem yourself about your organization?:		1	2	3	4
How knowledgeable do you deem yourself about the alliance management practices in your organization?:		1	2	3	4

APPENDIX 2: INTERVIEW QUESTIONNAIRE

General organizational elements in alliance management
The organization has an organizational function (department/staff) responsible for handling alliance related activities.
Organizational tools are used training programs to diffuse knowledge concerning alliance management among employees.
Third parties are involved in managing the organization's alliances.
** If so, what are the issues they (generally) provide assistance in?*
Alliance formation and partner Selection phase
The organization has organizational functions, processes and/or tools that are set up or involved in selecting/deciding on an alliance partner. For example: standard meetings or partner selection programs.
** If so, what are these processes, functions or tools?* ** If not, how does your organization address partner selection for alliances?*
Alliance governance and design phase
The organization has organizational functions, processes and/or tools that are set up or involved in deciding on the (type of) governance of the alliance. Governance here concerns rules that are set up to define expectations, authority and performance before an alliance is up and running (e.g. contracts or equity sharing).
** If so, what are these processes, functions or tools?* ** If not, how does your organization address governance in alliances?*
Postformation alliance management phase
The organization has organizational functions, processes and/or tools that are set up or involved in managing the ongoing alliance with the alliance partners. For example joint business planning, the use of metrics for performance evaluation or an overall alliance manager.
** If so, what are these processes, functions or tools?* ** If not, how does your organization coordinate activities in alliances?*
The organization employs organizational functions, processes and/or tools to improve the relationship with alliance partners.
** If so, what are these processes, functions or tools?*

APPENDIX 3: INTERVIEW TRANSCRIPTS

Unfortunately, the recording of the interview held at the Erasmus University Rotterdam was lost. Therefore a transcript could not be made and thus not be analyzed.

Interviewee: Bas Allart, Director at Utrecht Valorization Centre, Utrecht University, May 8th 2012

General organizational elements in alliance management

The organization has an organizational department/staff involved in or responsible for handling alliance related activities.

There are people responsible for this yes, but there is no central department responsible for this. It is decentralized over the faculties, the level of the board and the UVC.

Organizational tools are used to diffuse knowledge concerning alliance management among employees.

When it comes to collaborations with third parties, that's how we often call it here, like research collaboration, then we have all kinds of workshops, training and also readers with rules to help people forward. So there is some training, but also a lot of ad hoc diffusion of knowledge.

Third parties are involved in managing the organization's alliances.

This is mainly for the legal part (subsidies) and I'm not sure, but I think also for match making, so that collaboration comes about and to guide this process. Maybe also for some areas, but these are the most important ones.

Alliance formation and partner selection phase

The organization has organizational functions, processes and/or tools that are set up or involved in selecting/deciding on an alliance partner. For example: standard meetings or partner selection programs.

I'm hesitant about this answer. Yes we do these type of things, mainly at the UVC, this is mostly about match making. We have a SME portal, (we have a partner selection program), and we have grant offices or research support offices that guide the operational side.

But I have to say that if you would ask if we have a standardized way of working with alliances, I would say we are working on it, but we are not there yet. It is however getting increasingly important. The external collaborations are getting more important, also for future financing of research.

I don't really believe in a standard procedure for alliances. There are no standard contracts or standard meetings. I think we might have some kind of format in organizational structures and processing, but I wouldn't call it standard, I think it is always custom made. Every field of research and every firm requires a different approach. You cannot really standardize that and if you try to implement that in some kind of match making event, the outcome will be different every time.

What I would like to emphasize is that, you can arrange a lot with the organization, but eventually the researchers are the key that have to establish contact with the partners. Because if they do not have a match with respect to content of the collaboration, that you can try to manage this all you want, but that is not going to help. The researcher must be willing to collaborate with the firm and see the value of with and vice versa. Therefore the researchers are the essential aspect in forming collaborations. Maybe at the highest level they might have an idea to for example collaborate with Philips, then they can ask researchers and employees of Philips to find a match. So the support from higher up is important to get things done, but the essence is always at the people who have to work together.

There are unwritten rules only I think. The university will collaborate with large, reliable, sustainable parties, in the sense that a long term relationship can be established.

I think that the most universities prefer to collaborate with large firms like Philips and Unilever. My experience is that trying to collaborate with SME is a bit more difficult, especially if they are young firms, that there is a higher risk that the collaboration will fail. However the university will increasingly have to reach out to them, but the attention is not really going to them right now. So the preferences are especially the large, famous firms with a large R&D and I think they shouldn't be leaning too much to commercial interests.

- Are they willing to commit to a long-term partnership?
- Do they have the name and fame and image that a university wants to be associated with? For example I can imagine that a university will never collaborate with a tobacco firm.

Also, if the academic freedom is at risk in collaboration, then the university will also refuse.

<u>Alliance governance and design phase</u>

The organization has organizational functions, processes and/or tools that are set up or involved in deciding on the (type of) governance of the alliance. Governance here concerns rules that are set up to define expectations, authority and performance before an alliance is up and running (e.g. contracts or equity sharing).

You can find this one on the internet I think. There is a routing about how secondary and third funding are handled with regard to collaboration with external parties. There you can find a form containing the rules that apply. That route on whether it should go via the faculty or central organization, in both cases they also have to check with the TTO, those are organizational questions related to that website.

http://www.uu.nl/EN/informationfor/intstaffandvisitors/Research/grantsandfunds/Pages/default.aspx

So the answer is yes. If you ask me, I think that this could all be improved to a bit more professional. I would like to reach the level of professionalism that firms have. I think the competition between universities for collaborating with other parties is going to evolve around of course the content, but I think also the professionalism of conducting business. I think firms prefer to work with a university that acts professional and this increases the chance that they will return as well.

Functions: legal affairs and holdings
Processes/tools: arrangements found on the website

Some of this can be found in the arrangements on the website, however not everything is set in stone as a rule or standard.

Post-formation alliance management phase

The organization has organizational functions, processes and/or tools that are set up or involved in managing the ongoing alliance with the alliance partners. For example joint business planning, the use of metrics for performance evaluation, an overall alliance manager or department.

Yes/No: I think if there is something to be won in alliance management at the university as a whole, then this would be the managing of an alliance. Now it is somewhat like, the deal is made and we’ll just see how it goes. There is where the big chances are missed. Yes, we have, mostly ad hoc, some way of managing it. But no it is not sufficient.

After the money obtained, then usually it is forgotten what was arranged in the contracts. That is where, I think, the knowledge institutes lose money, because they do not adhere to the arrangements made and yield something from the collaboration. Furthermore, I think they damage their reputation by not handling professionally towards the agreements made.

We now have a database in use where all contracts, patents and partners can be found in one system, which is followed professionally. This of course is a small domain of a very wide spectrum. We are now also busy to broaden and improve our customer relationship management system, that we have already, without complicating it and with all details, so that we know, beyond the boarders of a faculty and knowledge institute which contacts we have, which contact person we have for that. So that if we think that a certain firm is interesting we can find out if someone has contact with that firm and if we can make arrangements.

Of course with firms like Philips they will not let it come to anybody acting like an amateur.

Universities try to cover a lot of risks before the alliance up and running, but what they forget is that the biggest damage is done when this phase is not handled properly.

The organization employs organizational functions, processes and/or to improve the relationship with alliance partners.

On a higher level the Board of Directors and deans have their network, I have my own network of firms. These are usually smaller firms and more local. We communicate regularly, but it's not like we have a social drink every month. The Board of Directors occasionally organizes a day with industry. People from the industry are also often involved in things such as supervisory boards of organizations and other boards, so that also helps in creating and maintaining a network. This is mainly done by people from the management level of the university. Also organizations like ours, we are set up to structurally build and maintain relationships with external parties. So this happens deliberately and somewhat directed. There is also the Utrecht Science Park, which also plays a role in building networks with parties form this region.

The most important contacts are between people from the boards and CEO's from firms. The longer they know each other the more often they meet, the better the relationship is going to get.

Interviewee: Esther Stiekema, Program leader for Research of Board Service, Utrecht University, May 10th 2012

<u>General organizational elements in alliance management</u>

The organization has an organizational department/staff involved in or responsible for handling alliance related activities.

Yes and no. Why? A university is an organization that consists of a central part and a lot of autonomous units (the faculties) and depending on the size, a faculty can also have different departments within it, which can also operate fairly autonomously. On a central (university) level there are alliance activities. These are merely a subset of all the alliances the organization engages in. These are namely the alliances where the Board is directly involved in. However, you will see that when you look at the level of a faculty, department, research group and even individual researchers, that these all have their own alliances as well. For a scientist it is of course a part of his/her job to have contacts and a network in this country and also abroad. Therefore it is quite difficult to answer your question with yes or no. In my department there are people who are actively involved in and responsible for maintaining certain type of alliances. So, in that sense the answer is yes. But if you look at the whole of what is happening at the university related to alliances, there is no overview of everything that is going on.

To give an example; a while ago Philips asked us which people from Utrecht University collaborate with the people from Philips. The funny thing was that they didn't know it from themselves and neither did we. We had to start a project and ask a hundred people what they knew about the collaboration with Philips.

A lot of the people that maintain the alliances are in my department; this is mainly research based collaboration. But for education and exchange programs for example, there are also a lot of alliances.

Organizational tools are used to diffuse knowledge concerning alliance management among employees.

For alliance management specifically not. There is however a lot of training on the subject of valorization for researchers and also for people who support the researchers on valorization. That is about different aspects of valorization. It is about how you can search for partners for your research, but also about how you handle financial aspects, legal aspects and intellectual property in collaboration with for example, private firms. So with regard to those aspects there are courses. We do not call that alliance management, but we call it valorization activities. We do not have like a department whose sole job is to maintain communication with the industry. It is much more spread out here.

Third parties are involved in managing the organization's alliances.

This happens when it comes to subsidized collaborations. We use the word alliance mainly for strategic collaborations. But if you look at partners, we work a lot with other knowledge institutes, firms and that happens often through government or EU subsidized projects and there it is fairly common that a third commercial management party is involved in the project. This due to the accountability for the subsidized money. It is good to have a party who is more experienced in handling these things.

For strategic alliances we usually do not involve third parties. I will give you an example. A while ago this university wanted a better directed policy for the contact with universities in foreign countries. We have chosen a few regions, whereof we think that they are important for us and within those regions we went looking for university partners that kind of resemble ours. So universities that also have a lot of different disciplines, somewhat same research specialization and studies they offer. We asked those universities if they want to be our partner and that we also invest money into the partnership. We do those things ourselves. People in my department handle those things.

<u>Alliance formation and partner selection phase</u>

The organization has organizational functions, processes and/or tools that are set up or involved in selecting/deciding on an alliance partner. For example: standard meetings or partner selection programs.

Well, the answer to that question is basically that there is little that is standardized. But in the period that we were looking for foreign partners, we did maintain a standardized procedure. Looking back we came to the conclusion that we might have selected too many partners to be able to usefully collaborate with. No but I would say that we do not have a standardized procedure for this. But for instance, now that we are about to cancel some of the potential partnerships, we will evaluate this and have some sort criteria, but this is not something that is done throughout the years.

For certain partnerships, like for example the UUPs (Utrecht University Partners), we have some criteria. This is not something that is published on the website I think and that we want to present to the outside world. For most other partners there isn't. When we get approached for a partnership and we reject it, then I will explain the criteria for the decision.

There is also a big difference for me between another university requesting a partnership or a firm requesting a partnership, because in a partnership between two universities, there is basically never an exchange of money. What is possible though, like in our alliance with the university in Eindhoven is that both universities decide to invest money in a big project, but this doesn't mean that our money will go to Eindhoven. It is based on a mutual decision that a research is important and that we want to invest money in it. In a partnership with a firm it is different. Not in the sense that our money will go to the firm, but we do expect that the firm finances our research. Therefore the request for a partnership is very different in whether it is from a firm or from a university. When there is a request from a university, then we look at what is the status of that university, how good it is, and what we can gain from collaborating with this university. When it is a firm, then you look at what they want from us and does this comply with things we already wanted to do, and also, how much money are they willing invest in it. So these are very different considerations.

<u>Alliance governance and design phase</u>

The organization has organizational functions, processes and/or tools that are set up or involved in deciding on the (type of) governance of the alliance. Governance here concerns rules that are set up to define expectations, authority and performance before an alliance is up and running (e.g. contracts or equity sharing).

In general, the answer to this question is no. However this is not the case for anything that involves money. Anything that involves subsidies has a governance, because it is required. This begins with a consortium agreement that also includes agreements on IP. In this situation the rules for the collaboration are clearly defined and it is very regulated. A strategic alliance with for example Eindhoven is much less regulated. There are some agreements made, for example, that the two executive boards have a meeting twice a year to discuss the progress and that the rectors meet five times a year. But for example for the foreign UUPs there is no form of governance set up, because it is not necessary due to less concrete actions happening.

As for agreements on IP in a partnership with other universities, some researchers want to have agreements in advance and other do not. In our situation the board stated that it is their choice on whether or not they want to make an agreements in advance or not. Our idea is that the need to formally establish these agreements comes from distrust and the distrust between universities and firms is big. So in those partnerships there is always a need to establish those agreements, but between two universities we found that some of the involved researchers have been working together for a long time. They experienced this as pleasant did not feel the need to formally establish this. There are however certain principles, like whoever came up with the idea has the right to the IP. Others however did not have a positive experience with each other and did want to establish it. The board basically let them decide.

Maybe it is good to know how this is arranged at the university. The authority to for example sign a consortium agreement is delegated by the executive board to a dean from a faculty for all partnerships involving less than €2 million. Also, often these deans further delegate for even smaller amounts to the heads of departments. So a lot of it is being handled there where we cannot even see it, expect for the €2 million or more.

The governance is thus largely dependent on the alliance and researchers themselves.

Post-formation alliance management phase

The organization has organizational functions, processes and/or tools that are set up or involved in managing the ongoing alliance with the alliance partners. For example joint business planning, the use of metrics for performance evaluation, an overall alliance manager or department.

Well, for a lot of the alliances in which the executive board is involved in, the expected results are not clearly defined. A year and a half ago we did an evaluation on the Utrecht University Partners project we have with other universities to see whether we for example have more publications with those partners, if they attracted our students or we attracted their students. So we do once in a while have an evaluation like that, but that is not reflected in any recurrent report on the management. So this is not shown for example in the management report that we publish every quarter. It's just once in a while that we figure that we should look into that stuff, but it's not systematically recurrent.

For the alliances that are part of subsidized projects, they always need to provide justification to the subsidy provider for the spent resources and results. How exactly is somewhat dependent on the subsidy provider. For that purpose the faculty is organized to make sure that happens correctly, because there is a large financial importance.

That is of course the issue, there is some money involved in the alliances in which the board is involved, but with respect to the total budget of the university this is a very small amount. So there is a concern in terms of reputation of the organization etc. But the projects run at the faculty level is very concrete in terms of money flowing in and out, there is a very tight control regime. This is done by the grant offices and the project controllers of the faculty. The financial part is done by the controllers. The grant offices are mainly involved in attaining the resources and the settlement of these projects. The controllers do control the compliance to the governance rules, but are only concerned with the financial aspect. So they only get involved when there is a financial stake.
I know some cases where something went wrong with the IP, but with regards to the governance, there might have been some issues that I don't know about. People are generally not troubled by that. Only at the moment when there is a large financial concern, which is possible with IP rights, than people get involved and troubled.

Occasionally it happens that something does not produce the results that we or the external parties expected. That can happen for instance when we make agreements with the ministry. The ministry, since the 80's doesn't have a lot of concrete options anymore to control the university because we became more autonomous. They then often try, with a relatively small amount of resources, to influence the course of the university and sometimes this is on a national scale. Maybe you will hear of this, but in the past and now still there are 'sector plans', where universities make agreements with the ministry per particular sector and then the universities get funds for that. The ministry has, because that's how politics work, an interest to make the things we agreed on larger than it is towards The Hague and we have an interest to keep the things we agreed on small so that it doesn't influence our autonomy. So there is always a miss-match in that sense, and then when the project is finished everybody and especially the ministry is unsatisfied. That is partly part of the game, but that situation there is a possibility that the reputation can be compromised. That is something that we always have to watch out for a bit. However within the university the parties have very different views on this matter. For instance the faculties, they have a very large interest in that they are troubled as little as possible by those agreements, while the parties closer to the board are more worried about the reputation of the university in The Hague and how could this affect us in the long term. So that is where, in my opinion, the reputation of the university can be damaged.

The reason for the grant offices is that the world of science is changing. The funds we get from the government are increasingly getting smaller, which means that we must try to get funds from different sources. However, the funds from the government are the only funds with little conditions attached to them. All the other funds are tied to conditions and justification. Also these other funds have to be acquired, usually in competition with others. So it is our scientists that have to do that job and the grant offices are set up to help them out with it. So they help with a lot of work leading up to the alliance, but also try to give advice on how to improve their proposals. When the project is acquired they are also involved in the management of the project. How large that involvement is, differs per grant office and alliance.

Also faculties like Geosciences, Beta and the UMC (Utrecht Medical Centre) acquire a lot of funds externally, but for instance Humanities acquires less and the funds they acquire come mainly from the EU, while Geo and Beta also have good opportunities at firms.

The organization employs organizational functions, processes and/or to improve the relationship with alliance partners.

Well yes, all the partners that are handled here (at the university level) at least. For example for our foreign university partners we organize a summer school each summer. With Eindhoven we recently held a beautiful kick-off in the academy building. What the board does, which of course also a role of the board is that they also travel to meet the board of the partners. For the smaller partnerships it is the responsibility of the researchers and the faculty on how they handle this. So this also varies between them.

I think this is hardly the case that personal relationships really develop for the things we do here for the board of examiners. There is a possibility, but it is not common. For instance with the foreign partners we have, we mail and visit them but that's mostly work related. On a national level it might be more common. However the tricky thing is, it's a small world and at a certain point you know certain people quite well and you can become friends, but then it is hard to say whether it is due to that certain alliance or the fact that you were colleagues several years ago or knew each other through other people. It is also hard for me to give an answer to that question because that is something that is hard to keep track of.

Interviewee: Anton Ussi, Technology Transfer Manager at Technology Transfer Office, VU Amsterdam, May 7th 2012

General organizational elements in alliance management

The organization has an organizational department/staff involved in or responsible for handling alliance related activities.

Yes, this is the Technology Transfer Office.

Organizational tools are used to diffuse knowledge concerning alliance management among employees.

Yes, but not extensively.

Third parties are involved in managing the organization's alliances.

We have a grant desk, which is managed by a third party. But we use patent offices as well to run our patents, which is obviously an essential element for the Technology Transfer Office. Also, when we write grants/subsidies, we don't write them ourselves, we often engage third parties to write the grants. This is not for alliance management itself.

Alliance formation and partner selection phase

The organization has organizational functions, processes and/or tools that are set up or involved in selecting/deciding on an alliance partner. For example: standard meetings or partner selection programs.

No I'd say we don't have a database or a standard alliance scouting function for external alliance partners. So internally we scout our scientists with the interesting inventions. So, we have a standard scouting process for that. But then, when we approach the market for external commercial partners, that's very much an ad hoc process in that you perform market research to find out who are the incumbents, who are the high potential companies that you want to get involved with. We do not have that set down in a standard process. It is very much based on own ability and incentive to go and scout the market for it. So there is not a formalized procedure for it.

We also do not have formalized set of criteria. But there are some standards that would be that the technology fits with their (market partners) position and segment of the market, that they have the means and interest to further develop this into a product together and that there are no potential conflicts. So there are some very standard criteria, but these are not formalized. It is very much use your common sense and rely on the professionalism of the managers to make those decisions. Complementary skills and having the same objective is important criteria

Alliance governance and design phase

The organization has organizational functions, processes and/or tools that are set up or involved in deciding on the (type of) governance of the alliance. Governance here concerns rules that are set up to define expectations, authority and performance before an alliance is up and running (e.g. contracts or equity sharing).

That would be our responsibility (TTO) and it is set into contracts, so the technology transfer manager will help define and negotiate the terms of the governance of an alliance. So again it is a common sense thing, based on experience and best practice that we gain from industry. We don't have like a formalized reference manual for deciding on the type of governance for a certain alliance and it is very much on an experience basis. It is quite an extensive process of negotiation that we go through to reach a governance structure that works to best practices. This governance structure is then set up in the contracts. We set up contracts ourselves. How we work is that we have a *legal council* and *business developers (transfer managers)* and we work in tandem. So the transfer managers will, with the support of the legal council come to a definition of the governance structure in negotiation with the various partners, so the scientists and the company to reach agreements. These agreements are then set in a contract.

It is very much on an individual selection process. You can't really have a formal set of criteria or processes, because nothing is ever that clear cut. It is never black or white, it is always some sort of hybrid model. It is very much a tailor made process for each alliance.

Post-formation alliance management phase

The organization has organizational functions, processes and/or tools that are set up or involved in managing the ongoing alliance with the alliance partners. For example joint business planning, the use of metrics for performance evaluation, an overall alliance manager or department.

The Technology Transfer Office is also responsible for the day to day running of the existing alliances. So the technology transfer manager will state the case manager on an existing alliance. As for tools, we have a project management system (Intium) that records all projects, so in theory any person can see what the latest is on a specific alliance.

The organization employs organizational functions, processes and/or to improve the relationship with alliance partners.

No I wouldn't say we have a explicit program of customer relation management. We try to be as professional and service oriented as possible to make the relationship fruitful, but I wouldn't say we have a program with the explicit aim at maintaining relationships.

I think personal relationship can be developed with the scientists involved in the alliance, but as for external relationships, from a manager at TTO point of view, the interactions are never that extensive or that often for it to develop. These companies are often international companies, so you see each other or have a teleconference once every couple of months or see each other once every six months, there is a very limited scope for development of that.

Interviewee: Steven Tan, Director of Technology Transfer Office, VU Amsterdam, May 7th 2012

General organizational elements in alliance management

The organization has an organizational department/staff involved in or responsible for handling alliance related activities.

This should be the Technology Transfer Office, but that is only partially the case. There are a lot of alliances the TTO does not deal with. The university is basically a collection of independent research groups that work under the same umbrella, but they are very autonomous. This is characteristic for scientists. They can be stubborn, make their own decisions and decide whether they want to involve the TTO in the collaboration. For simple collaborations they negotiate them themselves. Even in setting up contracts they can go far ahead and at the last minute present them to our legal counsel. This means that certain issues must be changed at a late stage and because you are already negotiating with a firm you are basically committed to the collaboration already. Ideally, when the first contacts have been made, we will be notified so that a commercial and legal counsel can join the further negotiations. This way the terms of the deal can be optimized.
The TTO has also not officially been appointed to handle all alliances. Only when it is a matter of intellectual property, in terms of trade and appropriating, then the TTO must be involved. This is also what the TTO was initially set up for. In the past years this scope has been broadened and now this includes every collaboration with external parties, under the term valorization. Even with consortia the TTO is often not involved.

Organizational tools are used to diffuse knowledge concerning alliance management among employees.

We have a course, called ‘market and research’. That is to train researchers to sell their research and engage in collaborations with external parties. However these are courses that take place twice a year and are visited by maybe ten people. So you can imagine the impact this has, but yes these do take place.

Third parties are involved in managing the organization's alliances.

No, basically we do everything internally.

Alliance formation and partner selection phase

The organization has organizational functions, processes and/or tools that are set up or involved in selecting/deciding on an alliance partner. For example: standard meetings or partner selection programs.

We have 'Industry Days', where we invite a firm, now with the Pharmaceutical Industry and these firms often have a wish list of things they are interested in, certain domains like Alzheimer and MS. We then bring together the top researchers of a certain subject. These researchers can the pitch for 30 or 45 minutes in front of an audience from the firm that usually consists of a mix of employees with a scientific, commercial and financial background and someone with a managing position. We then give a lot of presentations on one day where after we try to find an opportunity for collaboration. For the exact sciences we have additional events, like 'Energy Day', 'Sustainable Day' where we have multiple researchers and firms come together. These are somewhat less structured and are more network meetings. These are usually about a certain theme. We are planning to do this more often and to narrow the scope of these themes. These are namely stepping stones for public-private partnerships, because a lot of the research financing will come from establishing these kinds of partnerships. This is also the reason we do these collaborations. However, most of the collaborations come from existing networks. Therefore it is very difficult to engage in partner selection. The driving force in this matter is the 'key opinion leader'. Most of the partners come from his or her network. These are seniors in the science of their profession/expertise that have a lot of contacts. It is very difficult to compensate or replace this with something else. Furthermore, there is the issue of trust. The key opinion leader prefers to work with a partner he or she is comfortable with. These are usually partners from his or her own network. So it is the responsibility of the TTO to organize these network meeting days, but there is no specific function for this. It mainly depends on the theme to decide who is going to be responsible for organizing it.

When there is interest to collaborate a business developer form the TTO joins the conversation to construct a deal, as a kind of facilitator. However, some scientists do everything on their own. I would say, in most of the cases the scientists approach us with a detailed agreement for collaboration and then hopefully there is still some time. So in this case also the autonomy of the researcher is very big.

The most important thing when selecting or deciding on a partner is that it is logical. Our research group or employee should think that it is a fitting collaboration. As for criteria for not wanting to collaborate this is all soft. If the firm has a questionable reputation we will think twice of course. Also when a project is risky financially, we will also point that out, but we have no formal criteria for this.

It is also so that we guide the transaction of the contract that has to be signed by the Board of Directors. We provide this contract with an additional sheet that has to be filled in with remarks regarding the agreement. In the worst case we will recommend not to sign the contract, with the risks involved in the collaboration, but again there is no formal process for selection.

<u>Alliance governance and design phase</u>

The organization has organizational functions, processes and/or tools that are set up or involved in deciding on the (type of) governance of the alliance. Governance here concerns rules that are set up to define expectations, authority and performance before an alliance is up and running (e.g. contracts or equity sharing).

Of course, when you are going to work together you want a suitable agreement for collaboration. If it involves research there is a 'Research Collaboration Agreement' (RCA), wherein leading is the research plan that is about what exactly do we want to do. This is followed with the conditions for the collaborations that are agreed upon. This is a contract that we (TTO) write a lot, because these were matters that had to be agreed upon for intellectual property, like for who is what that comes from this collaboration. These are pretty difficult discussions that involve trying to match the investments with the appropriation. There is also the issue that research can lead to discoveries that fall outside the boundary of the subject of collaboration. We then expect that these findings belong to us, since they don't belong to the field this collaboration was set up for. This is also a matter of discussion then. These are difficult issues, but because these were all matter of IP they were always our job.

You also have to have a clear idea on how the research is going to take place in practice. This then happens within a department, division or faculty within the VU. This must be realistic of course to deliver the amount of work for the cost. We will check this with the manager and the dean. You have to imagine that the head of a department (key opinion leader), he wants to do a research with a firm, but also there he has a highly autonomous. His department is his department. He is accountable towards his manager, but that is afterwards and it is his department. It is very difficult to supervise from the outside when he or she is collaborating with a firm. Like checking whether the costs that are being made are actually being paid for. So there are rules set up for the collaboration but it is very difficult to check whether these are all adhered to. This is the most fragile, most vulnerable issue in the whole proposition of working with industry and third parties. This is largely due to the autonomy of the researchers. This autonomy is conditionally, because without this autonomy science cannot be conducted. This is also one of the main reasons to work as a scientist, it is not for the salary, it is for the freedom. This can deliver beautiful results for scientists, but it is very hard to govern once they start working with third parties. This sometimes results in things going bad that are found out later in the process and then this has to be paid for.

It is so that we set up the contracts, this is organized very well and these are very adequate contracts. The people who work on these come from outside the field and know how these things work. It is the compliance of these contracts that are the issue. This is however not the responsibility of the TTO and we do not have the ambition to make it our job. Ultimately it is the responsibility of the manager of the alliance to govern the collaboration. If it is firm with a good reputation then we don't have to worry. However, when it is a spin-off, it is more difficult. Small vulnerable company, high ambition and high potential, but also a high risk. If the firm then does not pay its bills or is late with paying, then you have a financial risk.

We are however improving this. The problem is not the governance activities, but the structure wherein the collaboration takes place. What helps is that a faculty does not allow a firm to be incorporated in it. That we only do things commissioned by others with our own people and tools. That is a lot different that saying here is our lab, send your people and do whatever you want, because then you never know what is happening. It makes it even more difficult if the person is partly active at the university and partly at the firm. Things should be kept simple. Our preference is to do pure contract research. That is the easiest way. Also the parties should have the same interests in the project. This is not always avoidable but you try.

So when I started here, the way it worked was that the business developers created the deals, the legal council closed/documented the deals, but there were no controllers who controlled the compliance of the contracts. We now hired a controller who is checking them. This results in very nice things, like money that still has to be paid to us. If you do not remind them, people will not pay. So I think governance in academic institutes is a underexposed risk.

There are fourteen administration offices at this university. Every faculty has an administration office that does the administration for their alliances. So you can imagine that some perform better than others and that there is no one way or handling the related activities. They do important work like declaration of worked hours and subsidies.

What we should have is a more centralized administration for projects. So not fourteen, but maybe four. There should be one system, a hour registration (timesheet). Then you would already come a long way. That would be a big step.

Here we are responsible for the governance of our own spin-offs. There aren't a lot of these, I think maybe fourteen. Those report financially to us and we analyze these and check if the right things are happening. A lot of these firms work together with the university. These spin-offs are actively governed, this also due to them being a high risk.
So basically our 'model' is that the manager of the project is responsible for this decision. We can check the performance of a firm and discuss this but it is the manager that is responsible for compliance with the rules/contracts.

<u>Post-formation alliance management phase</u>

The organization has organizational functions, processes and/or tools that are set up or involved in managing the ongoing alliance with the alliance partners. For example joint business planning, the use of metrics for performance evaluation, an overall alliance manager or department.

There is nothing from the TTO. We are only involved if the manager of a project cannot handle an issue on his of her own. The researchers are doing a research for a firm. This has a certain progress, planning, deliverables, costs and profits. All those things are not within our domain. After the contract is set up we are only involved when asked or when IP is produced. A lot of research that is done here is validation research. This means that a firm had found something out and we test if it is applicable in other situations. This is like a confirmation of a hypothesis. Explorative research. Firms often do not have the resources to do that.

The organization employs organizational functions, processes and/or to improve the relationship with alliance partners.

We of course have the industry days, but other than that we don't have like a day where we invite our current partners. The individual researchers can do that themselves of course, but there is nothing formal.

Interviewee: Frans Los, Beleidsadviseur Onderzoek, Leiden University, September 5th 2012

General organizational elements in alliance management

The organization has an organizational department/staff involved in or responsible for handling alliance related activities.

At this university we do not have appointed staff or a department that is responsible for these tasks. We used to have that. There was a department responsible for organizational management, but that was mainly for internal organization of the university. At a certain point we closed that department. This was because certain employees are already responsible for their 'terrain', so when there are changes to be made we involve the people that are suitable and closest to the terrain that is going to be changed.

Organizational tools are used to diffuse knowledge concerning alliance management among employees.

When people that were involved in the world of science, get positions with a lot of responsibility like scientific director or dean, then we do have programs to prepare them for their tasks. These tasks also involve alliance related activities so with the program we also try to prepare them for that.

Third parties are involved in managing the organization's alliances.

It is often the case that we involve a third party to guide the process. For example in our alliance with Delft and Rotterdam we have involved two people from outside the organization. One of them is responsible to guide the meetings between the boards of the three universities. This is a person who prior to this has done a similar job at the Dutch railways (NS). We also had a project coordinator to guide the more operational activities in the alliance.

Alliance formation and partner selection phase

The organization has organizational functions, processes and/or tools that are set up or involved in selecting/deciding on an alliance partner. For example: standard meetings or partner selection programs.

There is nothing standardized for this, although according to the theory there maybe should be. There are often various motivations to form an alliance and these can be internally or externally. Scientifically speaking there are no boundaries, so for a scientist basically every partnership is possible. Thus one driving force to form alliances is science. Another reason to form an alliance is from a strategic point of view. For example the strategic alliance with Delft and Rotterdam has come about by an external force. One of the forces being that in the future a lot of decisions will from Europe centrally and to be visible with respect to the framework of Europe it is important to be bigger than one university and form a unit. In this case the choice for our three universities was the complementarity. Leiden University is a broadly orientated university with that has a broad scope for humanities, while Delft has a focus on technology and Rotterdam on economies. So on a lot of terrains we do things a little bit different, so then it makes sense to work together because then it adds up.

However complementarity is not a standard requirement for every alliance we look for. Sometimes it might be better to work with partners that are similar. I cannot name an example for Leiden University now, but for example look at the three universities for technology. They are working together to bring the whole scope of technology closer to each other.
We also have an alliance with some 20 other universities in Europe (LERU: League of European Research Universities) and the drive for this was to maintain/represent the importance of fundamental research. If you look at the Netherlands and the rest of Europe a lot of money is going to industry and agriculture etc. However the fundamental research, which is driven out of curiosity and does not necessarily bear fruit for the short term, is threatened to get diminished due to economic interests. That's why the league was formed, which by the way was initiated by Leiden University.

<u>Alliance governance and design phase</u>

The organization has organizational functions, processes and/or tools that are set up or involved in deciding on the (type of) governance of the alliance. Governance here concerns rules that are set up to define expectations, authority and performance before an alliance is up and running (e.g. contracts or equity sharing).

There are certain processes that are taken into consideration. For example, with the alliance with Delft and Rotterdam, the executive board will never make the decision on their own to engage in that alliance. This will always extensively be discussed with the deans of the faculties. The deans in turn will discuss this intensively with the scientific directors on the institutes. An alliance cannot be formed on the top level without the bottom agreeing to it. It is not a top-down activity. So there are processes at both level that have to be combined.

For example in the alliance with Delft and Rotterdam we firstly discuss it in a governing sense. At a certain point some agreements have to be made when things actually have to get done. Also the legal and the financial part have to be handled. What we are now working towards is to make it a joint-venture.

So these are not standardized processes or people. It depends on the alliance which people are involved and how they decide agree to govern the alliance. But of course there are going to be meetings between different parties internally and externally, but there is no standardized format for this procedure.

<u>Post-formation alliance management phase</u>

The organization has organizational functions, processes and/or tools that are set up or involved in managing the ongoing alliance with the alliance partners. For example joint business planning, the use of metrics for performance evaluation, an overall alliance manager or department.

When all the agreements have been made, discussed earlier in the governance section, it then all ends up in a 'planning and control cycle'. People with different expertise are appointed here to be responsible for controlling different aspects of the agreements. These are mainly standardized processes that have to be adjusted to each other, which can be very difficult.

For our alliance with Delft and Rotterdam, a new group was set up that was basically nothing more than the three executive boards together. The boards of the different universities meet several times per year. The chairman from the different boards lead the alliance. Also, the chair for the alliance (the joint venture) rotates each half year by the chairs of the different boards. This group meets to control the agreements made and decide the course for the coming period.

The organization employs organizational functions, processes and/or to improve the relationship with alliance partners.

Definitely, because it is all human work. It is important that the boards and the deans of the different organizations get along. An important way of achieving this is simply by having them meet regularly. Also when the deans of two different universities meet, a member of the board joins them to make acquaintance and help them come to an agreement.

Interviewee: Eric Beerkens, Senior Beleidsmedewerker, Leiden University, September 5th 2012

General organizational elements in alliance management

The organization has an organizational department/staff involved in or responsible for handling alliance related activities.

I would say no. There is no one specific department or certain employees that are responsible for it. This differs per alliance.

Organizational tools are used to diffuse knowledge concerning alliance management among employees.

Here I would also say no.

Third parties are involved in managing the organization's alliances.

It is dependent as well. If it is a big project then we occasionally hire a project manager. If we do not have the knowledge internally then we hire people, yes. Also for the formation of certain alliances I can imagine that third parties are involved as well to guide that process or to have a neutral party.

You have talked with Frans Los. He probably told you about our project with Delft and Rotterdam. That is an instance where that has happened as well. I can speak for our alliances internationally, that is my area. In those cases we do not involve third parties as far as I know.

<u>Alliance formation and partner selection phase</u>

The organization has organizational functions, processes and/or tools that are set up or involved in selecting/deciding on an alliance partner. For example: standard meetings or partner selection programs.

For the LERU project there was. For that project it was clear that the partners had to be renowned research universities, that are very good in fundamental research. Bibliometric analysis were done on research performance to identify the potential partners. So that was a clear systematic approach. So here we used a tool, namely a bibliometric analysis. However it started when a few people had a meeting and had an idea and from there on out the systematic search began, initially on a executive level. Eventually they involve certain ‘units’ to identify more potential partners.

However this is not the case for every alliance. An important factor here is the network of the employees here, and mainly the researchers.

For the most important alliances we have some form of criteria. In the case of LERU the criteria was the renowned research universities. Overall for all partnerships the criteria for the last 10 to 15 years is *excellence*, at whatever discipline the alliance is about. This is a very common criterion nowadays.

<u>Alliance governance and design phase</u>

The organization has organizational functions, processes and/or tools that are set up or involved in deciding on the (type of) governance of the alliance. Governance here concerns rules that are set up to define expectations, authority and performance before an alliance is up and running (e.g. contracts or equity sharing).

In a big project like LERU the general process is that a secretariat or a person is appointed to prepare the documents that include the regulations concerning the governance. The way it usually goes is that the head secretary of the board from one of the organizations involved will set up documents that have to be presented to the rest. In these type of alliances everything is done with the consent of the others. That is also the reason that you look for partners that are close to you. To summarize, usually someone from the involved partners is appointed to prepare these types of agreements and regulations.

You also have to keep in mind that the degree of involved in these type of alliances is limited. It’s not like with certain inter-firm alliance that organizations have to give up certain powers or take on additional responsibilities. This is never the case with international alliances. It also has to do with the goal of the partnership. Here it is basically an agreement to work together and not really an integration of organizations.

Leiden University also has the LURIS (Leiden University Research & Innovation Services), which is the technology transfer office of the university. The LURIS also employs people with a legal backgrounds, which are involved with certain alliances of Leiden University. It depends on the type of alliance whether they will be involved or not.

<u>Post-formation alliance management phase</u>

The organization has organizational functions, processes and/or tools that are set up or involved in managing the ongoing alliance with the alliance partners. For example joint business planning, the use of metrics for performance evaluation, an overall alliance manager or department.

For this type of alliance (LERU) there are standard meetings on different levels yes. The directors meet like 3 or 4 times a year. The agenda that is discussed there is basically the most important one, but that agenda of course is fed by the activities on a lower level and those are the communities mentioned earlier. So the communities are a kind of backbone for the management of this type of alliance. They also have a regular meetings as mentioned earlier.

The organization employs organizational functions, processes and/or to improve the relationship with alliance partners.

What's important for this type of networking is to form communities. For example in the LERU there different kinds of communities. These communities are made up of people that have the same function, but at a different university that is involved in the alliance.

In those communities certain topics are discussed and they meet a few times per year. How often they meet depends on the community. At these meetings then decisions can be made regarding certain topics. However, what's important is that these communities are set up, kept alive and stable in terms of composition. This is important because otherwise these groups become administrative clubs where nothing really happens.

Those communities are set up to help achieve the eventual goal of the alliance. The goal of this type of alliance is pretty broad and therefore you need different groups to work on different parts of the goal.

It's maybe not necessarily friendships that develop, but what you do see is when we set up networks on the level of institutes we do that with the idea that there has to be some kind of fit between the world of the scientists. However it can also work the other way around. For example with this LERU project. This project now exists for 10 years and is a prestigious club of universities and you notice that for the scientists it is now a somewhat easier way to get in touch with Oxford. However, whether these scientists really become friends it is hard to tell. But I think on every level where people meet or work together regularly some kind of trust and familiarity develops and this makes it easier to cooperate and communicate with each other. Speaking for myself working with LERU it is now also a point of reference for me if I have a question regarding something that I think other partners might know.

Interviewee: Harry de Groot, Account Manager Valorization Centre, Delft University of Technology, September 4th 2012

General organizational elements in alliance management

The organization has an organizational department/staff involved in or responsible for handling alliance related activities.

That is thus the Valorization Centre as a whole. There is a person appointed to be responsible for the portfolio for Valorization. This is the dean of mechanical engineering study which was appointed by the director. This person manages the day-to-day operations and makes the structures so that the Valorization Centre is center of the Valorization operations. It's about 25 people who are employed by the Valorization Centre.

There is of course the problem that a university is very broad with different faculties. It is a common core issue that professors have their own connections with companies, because they know them or because that firm just visits and they come up with a project. And the proper way would be that we know about that, but keeping up with that communicating about it is difficult.

So the Valorization Centre is university wide and each faculty has a 'technology transfer officer' that hierarchically is part of the faculty, but has the task to work with the Valorization Centre. So this technology transfer officer has to be informed when there is a collaboration between that faculty and an organization and then in turn we have to be informed by them. We have a meeting every month with all the technology transfer officers and then general issues are discussed, but it is also a platform to discuss current projects and future opportunities. So there is organization involved to diffuse that information, but a lot of the time it is also facing the facts afterwards.

Organizational tools are used to diffuse knowledge concerning alliance management among employees.

Well our department does give some general courses and training on the subject of when you get a proposal from Brussels, how to handle that. But that basically boils down to 'what do I fill in where' and 'why fill in this and not that'. But as far as training on forming an alliance and who to involve, I don't know if we provide courses for that. There is also someone who keeps up with all the calls from Brussels and then sends mails out with the notify researchers about calls. It is then the responsibility of the researcher himself to start it up and find the right firm or other scientific institute. However we do not guide them in that process. In that sense it is more a bottom-up process and we are willing to help them with that.

Third parties are involved in managing the organization's alliances.

In very rare cases we might ask for some specialized advice, but it is not like we would hire them. We can also have requests from other organization to investigate and write about certain things for us, but we do not involve third parties for assisting with alliances.

Alliance formation and partner selection phase

The organization has organizational functions, processes and/or tools that are set up or involved in selecting/deciding on an alliance partner. For example: standard meetings or partner selection programs.

A lot of the alliances are formed from subsidized projects. So when there is an opportunity to do a subsidized project that fits the research scope at our university, then we from the Valorization Centre will commonly recognize the opportunity and make contact with a research group. Then we will have an informal meeting about contacts at firms that we possibly want to involve and make agreements on who does what to approach and meet them.

I will also give you the folder of the Valorization Centre later on, maybe it will provide you with information that I can't give you.

There is also some light criteria yes. Namely (a) it has to be aligned with the research scope done at the university. It is often a matter of short-term or long-term. We want to do new stuff and help research progress and the alliance partners from the industry commonly want a solution to their problem. So there is often that tension, but we are looking for people who see the direction we are going in with our research and are willing to somewhat go further than just their problem. (b) They have to have the financial means to endure the project. Also there has to be a click between the scientists that have to conduct the research. Then they're in the mood to do it and have fun doing it. So compatibility is important. However these criteria are not on paper somewhere.
So I will write down: 'long term direction of research' and 'financial commitment'. We do not really look at the complementarity, unless it is for a very long term collaboration and more than one project.

Alliance governance and design phase

The organization has organizational functions, processes and/or tools that are set up or involved in deciding on the (type of) governance of the alliance. Governance here concerns rules that are set up to define expectations, authority and performance before an alliance is up and running (e.g. contracts or equity sharing).

So like I said, within each faculty there is a technology transfer officer, but there is also a contract manager. It differs per manager how the contracts are handled and how they are involved with it. One is more of 'the contract has been set up, I'll archive it and write it down, while the other is more involved in managing it and making sure it contains everything. There is some kind of standard format but it is always a custom fit depending on the alliance. Those contract managers are also linked to the Valorization Centre. They also meet regularly and meet with my own boss. The account manager, thus me, I am responsible to oversee the whole process of having a meeting with the contract managers and partners and set up a structure of groups and processes for instance for reporting. Especially for projects that are fairly large, for instance our collaborations with Shell, there is a lot of work put in to the governance.
There is no one fit for all on this matter. Mostly this is not a hierarchical structure unless it is with a large partner like Shell. For the other collaborations it is just the formed working groups that are on the same level that provide the governance (one-layer-structure).

Post-formation alliance management phase

The organization has organizational functions, processes and/or tools that are set up or involved in managing the ongoing alliance with the alliance partners. For example joint business planning, the use of metrics for performance evaluation, an overall alliance manager or department.

Well I am some sort of alliance manager. As for metrics, for example with Shell we do have some agreements on goals and rewards. We do not do specific joint business planning in an alliance. However we did invite a lot of firms and layed out our roadmap for the future and asked feedback form them, but that is not specific for an alliance it is more TU Delft and industry separated feedback.

The organization employs organizational functions, processes and/or to improve the relationship with alliance partners.

This comes mainly from the persons themselves. For instance recently with Dow Chemical we had a renewal of our five year contract and then we discuss new prices and the researchers from Dow come here for a day, that is called ‘customer day’. On this day then there are several lectures with breaks where there is room for networking. Then the director and the head of some department gives a talk. Afterwards we have social drinks and I make a report of the day and keep in touch with my contact from Dow. So we do have those customer days.

Also for instance, I have my partner form Dow on my facebook now and there is another partner that I see regularly because we visit the same restaurant. But besides that I cannot really answer that question for everybody in an alliance.

Interviewee: Marion Leenen, Legal Counsel, Technology Transfer Office, University of Amsterdam, October 9th 2012

General organizational elements in alliance management

The organization has an organizational department/staff involved in or responsible for handling alliance related activities.

For the University as a whole there is no one department or particular staff for that. We here at the TTO are involved in it, but we are not the only ones. You also have like an alumni bureau that also maintains relationships with external parties and then there is the board that is also involved with certain alliances. The researchers also have networks from which they try to establish collaborations from. When there are contracts involved then they have to involve the board or directors of institutes. So there are some rules that they have to follow. So overall there are employees of the university involved for formal relationships but it is decentralized.

The Technology Transfer Office consists of three teams, a legal/patent counsel, a business development team and subsidy team. The subsidy team is involved in aiding in the acquiring subsidies for researchers. That can be national subsidies (NWO, Agentschap NL) or European subsidies where there is a bigger budget available and where researchers need aid in the set of rules and possibilities that apply. The business development team is responsible for marketing knowledge, maintaining contact with industry and try to translate that in deals and collaborations. The legal counsel is then responsible for setting up the contracts with the agreements for the collaborations.

Whether the TTO is involved in an alliance depends on the level on which an alliance is established. At the level of the board there are often intents that are set up. The TTO is purely as aid for the researchers. The business developers have a more active role in this, because they search and try to match the available knowledge with the industry.

The organization uses training programs to diffuse knowledge concerning alliance management among employees.

I don't think so. I think this is more applicable to industry. When you are put in a position/function at this university that can involve alliances, then you are expected to know what to do and what is allowed. A university is of course very broad and free so it is more difficult to focus these kinds of trainings here.

Third parties are involved in managing the organization's alliances.

As far as I know this is not the case. If this should be the case then our legal team has to be too busy or it has to involve some kind of knowledge that is not within the university's grasp.

<u>Alliance formation and partner selection phase</u>

The organization has organizational functions, processes and/or tools that are set up or involved in selecting/deciding on an alliance partner. For example: standard meetings or partner selection programs.

We organize 'Industry Days', where we invites industry and researchers. The researchers then present their research and then we look for a match between the two. This is relatively new and happens few times a year. We also visit large exchanges on several topics, where we try to market our research.

Other than that it is dependent on the networks of the researchers and the board. For the researchers there is the process of involving the TTO to search and aid in forming an alliance.

<u>Alliance governance and design phase</u>

The organization has organizational functions, processes and/or tools that are set up or involved in deciding on the (type of) governance of the alliance. Governance here concerns rules that are set up to define expectations, authority and performance before an alliance is up and running (e.g. contracts or equity sharing).

Our AMC has a 'research code' that they apply. This is about that our research stays independent. These are some general rules that have to apply for the collaboration. We want to publish our research and we do not want to be directed by industry regarding certain information. This al set into those code. This code can be found on the internet. We are also part of the VSNU, the association of universities in the Netherlands, which also upholds some codes regarding this matter.

Other than that we are relatively free to engage in alliances on different levels. But for all formal alliances there have to be contracts set up, but the content of the contracts can vary and depends on the subject of the alliance. So at certain levels we are involved to set up contracts and eventually it's the director of an institute that makes the final decision. Also to set up the contract the different parties always have to be involved. This is not really a set in stone standardized process but is a straightforward process. At the level of the board they also have a legal department.

Post-formation alliance management phase

The organization has organizational functions, processes and/or tools that are set up or involved in managing the ongoing alliance with the alliance partners. For example joint business planning, the use of metrics for performance evaluation, an overall alliance manager or department.

These kind of processes are not yet really institutionalized. We are somewhat living by the day and our TTO now exist for some years, so our successes are starting to manifest and the collaborations are starting to continue. This is when you embed the experience of these collaborations into the organization. So aspects like monitoring and evaluating become relevant here. We are not there yet when it comes to this, but there is attention for now. Also the organization is very complex to properly establish this. So for example contracts are set up at the level of institutions but then you need someone who follows the collaborations and the agreements made in the contracts. We are used to just set up a contract and send the bill and that's it. We need to get used to doing this different, but I think this is the case at every university.

The organization employs organizational functions, processes and/or to improve the relationship with alliance partners.

Yes, we have the 'Industry Days' bus that is not really for our current partners. There are some activities that happen that are not specifically work related like social drinks and certain festivities, but that is more on an ad hoc basis.

Interviewee: Jaap Overbeek, Board Secretary, University of Amsterdam, October 9th 2012

General organizational elements in alliance management

The organization has an organizational department/staff involved in or responsible for handling alliance related activities.

Not in general. We have the technology transfer office, where you spoke with one of my colleagues, Marion Leenen. That department is about exchanging knowledge with external parties in various types of collaborations. There is not one department that handles all the alliances. So for industry this is generally the TTO. We also collaborate with Hogeschool Amsterdam and the VU Amsterdam but I'm not sure whether you can consider that an alliance. Also the UvA and HvA have the same board and we share certain services.

The organization uses training programs to diffuse knowledge concerning alliance management among employees.

Not that I know of. Maybe this is the case at the TTO, but not that I know of here.

Third parties are involved in managing the organization's alliances.

This is not standard. We have external parties that we ask to do some tasks, also regarding alliances, but this is ad hoc. So it can happen, but generally this is not the case. It's usually just staff of all the parties that are involved in the management.

<u>Alliance formation and partner selection phase</u>

The organization has organizational functions, processes and/or tools that are set up or involved in selecting/deciding on an alliance partner. For example: standard meetings or partner selection programs.

No, this is also ad hoc. This has to do with the diverse character of the university. This differs from industry because a university has different goals. On an international level we want to excel in academic research. More locally we want to provide undergraduate (bachelor) education. Then for collaborations with industry there are also different goals. This is not just about acquiring funds but also accomplishing certain research goals. These are very different activities so I think it is of little use to have standardized protocols for this. However I'm also looking at this from the board's point of view. I guess we have the TTO that can be seen as a department involved in this and they have somewhat standardized processes that are used to match researchers to external parties.

<u>Alliance governance and design phase</u>

The organization has organizational functions, processes and/or tools that are set up or involved in deciding on the (type of) governance of the alliance. Governance here concerns rules that are set up to define expectations, authority and performance before an alliance is up and running (e.g. contracts or equity sharing).

There of course some implicit procedures. Contracts have to be set up. We have a legal department at the level of the board. The kind of process that takes place regarding the governance also depends on the type of alliance. For example in our collaboration with the VU Amsterdam we are still in the phase of only having an intent set up. I'm not sure whether this has any

legal implications. Generally the procedure that takes place is involving legal staff and the deans to set up a governance structure.
Internally there are of course also regular meetings between the board and the deans and here established alliances will be discussed of course. So this information will be diffused amongst the deans.

Post-formation alliance management phase

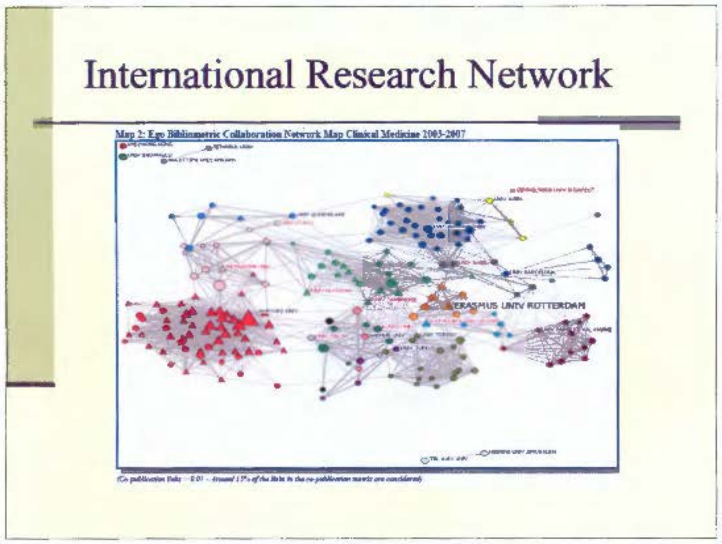
The organization has organizational functions, processes and/or tools that are set up or involved in managing the ongoing alliance with the alliance partners. For example joint business planning, the use of metrics for performance evaluation, an overall alliance manager or department.

Like I said we have shared services with the HvA. But we have separate finance and control departments that also monitor whether everything is running properly at the shared services. So for this collaboration, at this level there is some management from the university's side.

The organization employs organizational functions, processes and/or to improve the relationship with alliance partners.

Outside of work related activities there no real deliberate activities that are organized specifically from the university's side.

APPENDIX 4: PRIVATELY OBTAINED DOCUMENTS



Periode 2003-2007

De netwerken in deze discipline zijn drastisch veranderd. Veel sterke internationale samenwerking.
Veel meer verdichting. De positie van de EUR is verschoven naar het midden (als het ware getrokken).

De node voor de EUR is ipv een cirkel een driehoek. Dat wil zeggen dat de EUR haar positie heeft versterkt. De driehoeken op de graphic zijn de universiteiten die de mondiale positie hebben ingenomen binnen de discipline. De EUR heeft binnen de lokaal gelegen samenwerkingspartenrs de internationale positie overgenomen.

Nadere analyse met welke gebieden ter wereld de samenwerking zwak en sterk is.

Twee keuzen heeft de EUR op basis van deze graphics gemaakt.

1. Versterken van *weak ties*. EUR onderzoek met opkomende markten is beperkt vandaar zoeken van samenwerking met China, India en Brazilie.

2. Uit de analyse volgt dat (slide 3) dat vooral de samenwerking met de VS is versterkt.
Dat is voor de EUR een gebied met Strong ties. Daarom een nadere analyse gemaakt welke universiteiten/kennisinstellingen de EUR een sterke verbinding heeft.

Slide 4 laat verbanden zien met Amerikaanse universiteiten.

APPENDIX 5: LIST OF PUBLICLY AVAILABLE DATA

University	General websites	Documents	Link to documents	Last visited
Delft University of Technology	http://home.tudelft.nl/	*Jaarverslag (Annual report) 2011*	http://tudelft.nl/over-tu-delft/feiten-en-cijfers/jaarverslagen/	10/10/2012
Valorisation Centre	http://www.tudelft.nl/live/pagina.jsp?id=93ccec23-5756-4af6-83e3-5195a25649e1&lang=nl	*Algemene voorwaarden voor het uitvoeren van opdrachten door de Technische Universiteit Delft*	http://tudelft.nl/samenwerken/onderzoeksprojecten/	10/10/2012
		Leidraad contractactiviteiten 2008	http://www.tudelft.nl/live/pagina.jsp?id=93ccec23-5756-4af6-83e3-5195a25649e1&lang=nl	10/10/2012
Eindhoven University of Technology	http://www.tue.nl/	*Jaarverslag (Annual report) 2011*	http://www.tue.nl/universiteit/kolom-1/over-de-universiteit/feiten-en-cijfers/	11/10/2012
Innovation Lab	http://www.tue.nl/innoveren/kolom-3/tue-innovation-lab/	*Waardevolle wetenschap: Kennisvalorisatie als derde kerntaak van de universiteit*	http://www.tue.nl/innoveren/publicaties/	11/10/2012

	-	*Valorisation process @ TU/e*	http://www.tue.nl/uploads/media/Valorisation_de_Jong.pdf	11/10/2012
		PDF Strategisch Partnership	http://www.tue.nl/innoveren/innoveren-met-de-tue/strategische-partnerships/	11/10/2012
University of Twente	http://www.utwente.nl/	*Jaarverslag (Annual report) 2011*	http://www.utwente.nl/jaarverslag/	12/10/2012
Erasmus University Rotterdam	http://www.eur.nl/english/	*Jaarverslag (Annual report) 2011*	http://www.eur.nl/english/eur/publications/annualreport2011/	12/10/2012
EUR Holding BV	http://www.eur.nl/informatie_voor/bedrijven/eurholdingbv/	*Regeling Nevenwerk 2008*	http://www.eur.nl/fileadmin/ASSETS/medewerkers/restyle/brochures/Nevenwerk.pdf	11/10/2012
Leiden University	http://www.leidenuniv.nl/	*Jaarverslag (Annual report) 2011*	http://www.over.leidenuniv.nl/feitencijfers/jaarverslagen-publicaties.html	12/10/2012

Leiden University Research and Innovation Services	http://www.research.leiden.edu/luris/	*Instructions on Working for or with External Parties*	http://www.regulations.leiden.edu/research/working-for-or-with-third-parties.html#policy-on-conflict-of-interest	12/10/2012
Maastricht University	http://www.maastrichtuniversity.nl/home.html	*Jaarverslag (Annual report) 2011*	http://www.maastrichtuniversity.nl/web/Main/AboutUM/FactsFigures/AnnualReport.htm	12/10/2012
Maastricht University Holding	http://www.maastrichtuniversity.nl/web/Main/Research/ValorisationEntrepreneurship/MaastrichtUniversityHolding.htm			
Contract Research Centre	http://www.maastrichtuniversity.nl/web/Main1/Onderzoek/ValorisatieOndernemerschap/ContractResearchCentre.htm			
Radboud University Nijmegen	http://www.ru.nl/	*Jaarverslag (Annual report) 2011*	http://www.ru.nl/over_de_universiteit/feiten_cijfers/vm/jaarverslag_en/	12/10/2012
Knowledge & Technology Transfer Office	http://www.ru.nl/ktto/	*Research Report 2011*	http://www.ru.nl/over_de_universiteit/feiten_cijfers/vm/jaarverslag_en/	12/10/2012

Tilburg University	http://www.tilburguniversity.edu/nl/	*Jaarverslag (Annual report) 2011*	http://www.tilburguniversity.edu/nl/over-tilburg-university/profiel/jaarverslagen/	12/10/2012
Kennisklik	http://www.tilburguniversity.edu/nl/samenwerken/kennisklik/	*Algemene voorwaarden Kennisklik*	http://www.tilburguniversity.edu/nl/samenwerken/kennisklik/vind-de-klik/algemene-voorwaarden.pdf	10-13-2012
		Jaarverslag (Annual report) Center for Knowledge Transfer 2011	http://www.tilburguniversity.edu/nl/samenwerken/kennisklik/jaarverslag2011.pdf	10-13-2012
University of Amsterdam	http://www.uva.nl/	*Jaarverslag (Annual report) 2011*	http://www.uva.nl/en/about-the-uva/uva-profile/mission-and-identity/annual-reports/annual-report-2011/annual-report-20122.html	12/10/2012
Technology Transfer Office	http://tto.uva.nl/			
VU University Amsterdam	http://www.vu.nl/nl/index.asp	*Jaarverslag (Annual report) 2011*	http://www.vu.nl/nl/over-de-vu/profiel-en-missie/cijfers-en-naslagwerken/naslagwerken/index.asp	12/10/2012

Technology Transfer Office	http://www.tto.vu.nl/en/index.asp	*Knowledge, Intellectual Property and the Participation of VU University Amsterdam (VU) and Vumc*	http://www.tto.vu.nl/en/legal-advice/vu-and-vums-ip-regulations/index.asp	12/10/2012
University of Groningen	http://www.rug.nl/corporate/index	*Jaarverslag (Annual report) 2011*	http://www.rug.nl/Corporate/universiteit/feitenEnCijfers/jaarverslagen/index	12/10/2012
Transfer & Liaison Groep	http://www.rug.nl/tlg/index	*The Value of Knowledge*	http://www.rug.nl/tlg/publicaties/algemeen/index	12/10/2012
Utrecht University	http://www.uu.nl/Nl/Pages/default.aspx	*Jaarverslag (Annual report) 2011*	http://www.uu.nl/university/utrecht/NL/Profielenmissie/Pages/default.aspx	12/10/2012
Utrecht Valorization Center	http://www.utrechtvalorisationcenter.nl/	*Basic premises of UU concerning cooperation in the sense of the indirect funding and contract funding survey*	http://www.uu.nl/EN/informationfor/intstaffandvisitors/Research/regulations/funding/Pages/default.aspx	12/10/2012
		Routing overeenkomsten	http://www.uu.nl/EN/informationfor/intstaffandvisitors/Research/regulations/funding/Pages/default.aspx	12/10/2012

		Equitable remuneration arrangement for Intellectual Property Rights	http://www.uu.nl/EN/informationfor/intstaffandvisitors/Research/regulations/funding/Pages/default.aspx	12/10/2012
Open Universiteit Nederland	http://www.ou.nl/	*Jaarverslag (Annual report) 2011*	http://www.ou.nl/documents/14956/98c2051e-862a-470e-9663-cdae6b9d3ce2	12/10/2012
Wageningen University	http://www.wageningenur.nl/nl/wageningen-university.htm	*Jaarverslag (Annual report) 2011*	http://www.wageningenur.nl/en/About-Wageningen-UR.htm	12/10/2012
		Positionering onderzoek Wageningen	http://www.wageningenur.nl/nl/Over-Wageningen-UR/Corporate-Governance.htm	12/10/2012

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