Building trust

Today, there is a need for a better contextualized understanding of the factors involved in developing inter-organizational trust, both scientifically and practically. This dissertation generates insights into the processes of inter-organizational trust development in the project-based context of the construction industry. Firstly, trust levels within a large sample of traditional and design-build types of arrangement are measured. Secondly, a longitudinal assessment of how and why trust develops over time in an alliance form of contract is conducted. Finally, theoretical and practical implications of the outcomes of these studies are discussed.

Albertus Laan (1977) is a graduate of the University of Twente with a MSc degree in Industrial Engineering and Management (2002). He conducted his PhD research in the Department of Construction Management and Engineering, part of the Faculty of Engineering Technology at the same university. His PhD research is connected with the scientific program of the university's Institute of Governance Studies.

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Building trust The case of the construction industry

Albertus Laan

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Graag nodig ik u uit voor de openbare verdediging van mijn proefschrift:

Building trust
The case of the construction industry

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BUILDING TRUST

THE CASE OF THE CONSTRUCTION INDUSTRY

Albertus Laan

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BUILDING TRUST

THE CASE OF THE CONSTRUCTION INDUSTRY

DISSERTATION

to obtain the doctor's degree
at the University of Twente, under the authority of
the Rector Magnificus, Prof. dr. H. Brinksma,
on account of the decision of the graduation committee,
to be publicly defended
on Thursday the 15th of January 2009 at 15.00 hrs

by

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Born on the 21st of November 1977
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Preface

Wonder rather than doubt is the root of all knowledge
Abraham Joshua Heschel

As I reach the point, which for so many years seemed unattainable, the conclusion cannot be other than that this quotation became one of the guiding principals of my PhD research. My wonder is at the concept studied. Over the recent years, trust has turned out to be so much more pervasive than I had thought possible that I asked myself more than once whether I would ever get a grip on it. I have the feeling that I have at last succeeded in this. Nevertheless, I still wonder about the point where the defining element of trust, as the acceptance of vulnerability in the face of another's uncertain actions, needs to be overcome by a leap of faith. All the more so since, at this point, the concept studied became recognizable in the relationships I was involved in during my research. Therefore, since I had to practise what I was studying, my wonder extended to the process I was following. In this regard, I could never have imagined the number of gaps I have had to cross by leaps of faith. Although this brought me closer to understanding the essence of trust, it is important to say that the support I received from numerous people was invaluable.

Geert, I would like to thank you, above all, for giving me a free hand in discovering where and what to focus on. Although your trust has really frightened me at times, through this my dissertation became what it is right now. Hans, thank you for assisting me in setting up and writing down such a long argument. In my opinion, getting a doctoral degree is like building a house: "One day you have to let go of the boat" (Otto de Bruijne). Niels, looking back, I have to conclude that it would have been better if you were involved right from the start. Your expertise on studying social aspects of inter-organizational relationships has meant a lot to me. Anna, the same holds for you. Tack så mycket för din hjälp med att brygga över gapet mellan den akademiska diskursen om förtroende och den dagliga praktiken i byggbranchen.

In this regard, I am also grateful to the scholars who showed me the way in the labyrinth of discussions about this slippery concept. I not only enjoyed losing myself in their papers; discussing my preliminary research ideas and findings during the EIASM workshops on 'Trust within and between organizations' became a fertile exercise. Further, I would like to thank the survey respondents and case study interviewees for sharing their experiences on trust as it unfolds in their everyday practices. Especially the openness shown by the informants from *The Batavian Alliance* is worthy of mention. Here, I owe much gratitude for the help of Roelof, Patrick and Leo, who revealed themselves to be valuable sparring partners in collecting and analyzing the data. I would like to thank PSIBouw for providing the financial means for this research project.

Of course, my time at the university would not have been what it was without a group of 'close colleagues'. Jasper, I often think back to our many private conversations. For me, the perseverance you showed in your study was a great example to follow. Anneloes, what has made me somewhat jealous over the past years is the balance you struck between dedication and relaxation. From now on, I will do my best to become more familiar with such a way of life. Mieke, after my years of being somewhat of a research recluse, it was an absolute pleasure that you moved over to a similar topic. I not only appreciate your personal interest, but also your reflections on the content of my dissertation. Tijs, looking back, your sense of purpose and thoroughness was so inspiring that it helped me to bring this research project to an end. In this regard, Seirgei and Inge, it has been heart-warming to me that we were able to share what has occupied our minds during the last few months.

I am most indebted to those who are closest to me. Here, I would like to thank our communion circle of acquaintances, since many of them have been a true blessing throughout the past years. The same holds for my soul mates Bram(bi) and Bram(bo) whose encouragement helped me to put all difficulties I faced into perspective. It is a great relief that both of you will be flanking me at my defense. What makes me even happier is that, at the defense, I will look into the loving eyes of my wife, my daughter, my parents, my

sister and my in-laws. I am lost for words for what all of you have meant and continue to mean to me. Kirsten, you are such a sunshine that my mental fog disappears almost immediately when I come home. You are blessed for inheriting the cheerful character of your mother! Marlies, I am hardly conscious of what the past years have put you through. Thank you, among other things, for everything. You are the most wonderful gift of my life! Together, we look forward to the moment that our next child, Deo Volente, will see the light of the day. Last but not least, I would like to worship the Source of all wonder. If it were not for His love, none of this would have been possible.

Albertus Laan,
October 2008

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Chapter 1

Introduction

1.1. Inter-organizational trust

In the last few decades, research on inter-organizational trust[1] has received increasing attention. While it remained a narrow niche subject until the late 1980s, it has now become a central issue in the domain of management research (Rousseau et al., 1998; Bachmann et al., 2001; McEvily et al., 2003; Bijlsma-Frankema and Costa, 2005; Costa and Bijlsma-Frankema, 2007). Since neither formal contracts nor informal agreements are sufficient guarantees of efficient and effective relationships between business partners, the trust phenomenon has become a key concept in analyzing the processes, structure and performance of inter-organizational relationships. Numerous articles as well as books (Kramer and Tyler, 1996; Lane and Bachmann, 1998; Nooteboom, 2002; Bachmann & Zaheer, 2006) have appeared; and prestigious journals such as the Academy of Management Review (1998), Organization Studies (2001), Organization Science (2003), International Sociology (2005) and Group and Organization Management (2007) have published special issues in the area of inter-organizational trust. Among others, EURAM and EGOS conferences had conference tracks regarding trust and, in 2001, an international EIASM forum for research on 'Trust within and between organizations' was established, bringing together scholars from a wide range of disciplines including economics, organization psychology and sociology of organizations. So, much has been written about trust, increasing our understanding of behavior, exchange and competition in inter-organizational settings.

[1] In this thesis, the focus is on the role of trust between organizations, i.e. inter-organizational trust. Intra-organizational trust, i.e. trust within organizations, is excluded.

Despite all this progress, nevertheless, confusion and misunderstanding regarding the role of trust in inter-organizational relationships still remains. There are several reasons for this. A first source of confusion is that trust turned out to be a complex and multidimensional phenomenon, involving rational considerations as well as emotions and intuition. It can concern business partners' competences, as well as their intentions to employ them, i.e. to act to the best of their competences. Therefore, in the last two decades, researchers have devoted much effort to first understanding inter-organizational trust in its own right. A second source of confusion are the interrelationships between trust and other governance-related factors such as risk, control and performance, because these interrelationships turned out also to be complex. It has, for instance, been stated that trust presumes a certain level of risk, while it is simultaneously hindered by the risks that business partners face within their relationship. Furthermore, it has been pointed out that trust can be based on control, but that it has to go beyond control as well, since it requires a leap of faith. Finally, it has been argued that a certain level of trust is needed in order to end up with a satisfactory relationship performance, while trust is simultaneously shaped by the performance of the relationship itself. Here, we come to a third source of confusion: trust is not a static phenomenon. As a relationship develops, business partners continuously update their levels of trust and introduce changes to the control mechanisms previously adopted. Therefore, in the last two decades, scholars have increasingly focused on the dynamics of inter-organizational trust. In this regard, they have theoretically discussed, but rarely empirically explored, how trust develops in interaction with control, depending on the levels of risk within, and the performance of, a relationship. Van de Ven and Ring (2006): '[w]e have very little evidence about the evolutionary dynamics of trust. Longitudinal research is required to observe how and why processes of trust develop over time. Scholars must begin to undertake longitudinal process studies if we are to provide managers with evidence-based models and principles for managing inter-organizational relationships to achieve business (…) strategies' (p. 154). Here, we come to a final source of confusion. Since studies based on

quantitative data have revealed that contextual factors may explain a significant share of the variance in trust-risk-control-performance interrelationships so far found, the need to come to a better contextualized understanding of the processes of inter-organizational trust development is increasingly advocated. Bijlsma-Frankema and Costa (2005) state that 'reframing questions about the trust-control interrelationship to include the context in theoretical and empirical studies seems a promising turn to take, although the complexity of the matter studied is increased as well (…). The evidence needed for dynamic analysis will not only provide more robust grounds for making causal inferences but will also promote our understanding of how changes in one factor will lead to changes in another factor' (p. 402). Thus, the debate on inter-organizational trust is growing in maturity: from a focus on the trust phenomenon itself, through the exploration of the interrelationships between trust and other governance-related factors such as risk, control and performance, to a better contextualized understanding of the processes of inter-organizational trust development.

1.2. Inter-organizational trust in project-based industries

A specific context that challenges our conventional understanding of the dynamics of inter-organizational trust is formed by the relationships between business partners in project-based industries. In a project-based industry, relationships between organizations are established for a shared and relatively clear purpose: the realization of a project within a well-defined period of time. In realizing a project, a diversity of skills and functions from a range of organizations are brought together. Since the tasks to be performed are often unique, complex and not easy to define beforehand, project success strongly depends on a tight and coordinated coupling of activities. The business partners have to deal with project-specific structures and procedures, and so they need to continuously interrelate with one another to arrive at viable solutions in a non-routine situation (Goodman and Goodman, 1976). The temporality of inter-organizational relationships is further accentuated because the

project participants may have a limited history of working together and/or have limited prospects of working together again (Meyerson et al., 1996). Examples of project-based industries include the film industry, the ship building industry, the aircraft building industry and the construction industry. However, the specific characteristics of project-based industries can be applied to a wider category of settings in which a set of diversely skilled people work together on complex tasks over a limited period of time. Here, we can, for instance, think of virtual teams (Zolin, 2007) as well as of musicians being part of an orchestra (Khodyakov, 2007). In our modern, knowledge-based, network-oriented economies, temporary groups are becoming an increasingly common form of organization.

In understanding the processes of developing inter-organizational trust, the characteristics of a project-based industry form a fascinating puzzle. On the one hand, for business partners, there is no time to engage in lengthy processes that usually contribute to the development of trust in more enduring organizational forms. However, on the other hand, independent strangers faced with a deadline also have to handle issues of vulnerability and risk adequately in order to end up with a satisfactory project performance. For this, they may have to act as if trust is present, although the trustworthiness of a business partner has yet to be proven. In terms of Meyerson et al. (1996): '[t]emporary systems exhibit behavior that presupposes trust, yet traditional sources of trust - shared experience, reciprocal disclosure, threats and deterrents, fulfilled promises, and demonstrations of nonexploitation of vulnerability - are not obvious in such systems' (p. 167). Therefore, the development of trust in a temporary system will include a variety of subtle processes and mechanisms that can further deepen our understanding of how and why trust develops over time in inter-organizational relationships.

Debra Meyerson, Karl Weick and Roderick Kramer (1996) were among the first scholars to think about the properties of inter-organizational trust in temporary groups. In so doing, they stated that processes of trust development in this context may differ from conventional forms of trust development since team members are more inclined to import expectations of vulnerability and risk from

comparable settings with which they are familiar, than to develop trust by personal interaction: '[b]ecause there is insufficient time for expectations to be built from scratch, they tend to be imported from other settings and imposed quickly in categorical forms. Expectations defined in terms of categories are especially likely, because people have little time to size up one another. Categories invoked to speed up perception reflect roles, industry recipes, cultural cues, occupational-based and identity-based stereotypes' (Meyerson et al., 1996, p. 174). Since these expectations are sourced in generic features, rather than in inter-personal relationships, Meyerson et al. (1996) expect inter-organizational trust in this context to develop swiftly: '[t]he categories affect expectations of good will or ill will and encourage swift trust or swift distrust' (p. 182). So, importing expectations is a pragmatic strategy for dealing with uncertainty and risk in a project-based industry which enables business partners to perform complex tasks adequately, making use of the specialized skills of relative strangers. Elaborating on this, Meyerson et al. (1996) argue that inter-organizational trust in a temporary system is disproportionately influenced by the context in which the system is formed because it is the context that strongly affects the categorical assumptions and interpretive frames about what to expect and whom to be vulnerable to (see also Jarvenpaa, 1999; Kanawattanachai and Yoo, 2002). Therefore, in order to understand the processes of trust development in a specific project-based industry more deeply, one should also take the typical features of the industry into account.

1.3. Inter-organizational trust in the construction industry

In this thesis, the focus is on processes of inter-organizational trust development in the project-based context of the construction industry. This industry is of particular relevance in studying the dynamics of inter-organizational trust, because its relationships are often criticized for being adversarial and conservative (Latham, 1994; Egan, 1998; Byggkommissionen, 2002; PSIB, 2003). Despite this, previous research has hardly related the general literature on inter-organizational trust to the specific context of the construction industry.

Nevertheless, hampered processes of trust development are often seen as a major cause of efficiency problems; and it is often proposed that higher levels of trust and cooperation between project partners would improve the performance of many construction projects. Traditional contracts, where the principal specifies the project design and the contractor is responsible for constructing the defined project, are becoming less common. They are often now replaced by a form of design-build arrangement, where the principal puts the functional specifications of a project out to tender. The contractor then becomes responsible for specifying the project design as well as for subsequently constructing the project. However, in many design-build projects, the traditional working climate in which collaboration is poor and interaction tends to be conflict-oriented, is still common (Noorderhaven et al., 2006). Therefore, in many countries, partnering arrangements are increasingly advocated - especially in case of high risk, complex construction projects - since several studies have shown that these types of arrangement can be successful in creating more cooperative, trusting relationships (Larson, 1995; Bennett and Jayes, 1995, 1998). However, other scholars have stressed that not all partnering projects do well, and that there are no quick fixes that guarantee success (Bresnen and Marshall, 2000a, 2000b, 2000c; Kadefors and Laan, 2007a). These observations suggest that the mechanisms involved in establishing and maintaining trusting, cooperative relationships in the construction industry are complex and difficult to manage purposefully. In the words of Kadefors (2004): '[f]or inexperienced partnering candidates, the risk for ending up in quite traditional roles and relationships still seems to be substantial (…), so intuitively appealing strategies may have hidden drawbacks' (p. 175). Since organizations in a project-based industry are inclined to import expectations from settings with which they are familiar (Meyerson et al., 1996), it has been even discussed whether trusting, cooperative relationships can be intentionally shaped in one-off partnering projects, or whether partnering success requires a project-exceeding process of cultural change that can only develop over a longer period of time (Bresnen, 2007). After all, project participants may easily become biased by negative stereotyping, due to experiences in former

traditional and design-build contracts. Therefore, in order to gain a better understanding of the dynamics of inter-organizational trust in project partnering, we need a much deeper analysis of what exactly goes on in these construction projects.

1.3.1. Construction industry

In studying processes of trust development in project relationships, we focus on construction projects within the Netherlands. Before describing the typical features of construction projects we briefly describe this industry in general terms[2]. In 2007, the Dutch construction industry included about 85,000 firms (CBS, 2008). This includes construction firms and architects, as well as material suppliers and specialized consultants. The overall turnover by these firms amounts to € 80 billion. More than 90% of the firms employ less than 10 workers and only 1% of the firms employ more than 100 workers. However, together, the large (100 + 1 workers) and medium (10 - 100 workers) firms generate 80% of the € 80 billion turnover (see Table 1.1). This is because the size of a firm strongly correlates with the scale of the projects it works on: small firms are involved in small, relatively simple construction projects, medium-sized firms largely depend on medium-scale projects and large firms prefer working on large, relative complex, construction projects (CBS, 2008).

Number of firms	> 85,000 firms	Small-sized firms	> 75,000 firms (90%)
		Medium-sized firms	< 7,500 firms (10%)
		Large-sized firms	< 1,000 firms (1%)
Overall turnover	> € 80 billion	Small-sized firms	> € 17.5 billion (20%)
		Medium-sized firms	> € 32.5 billion (42%)
		Large-sized firms	< € 30.0 billion (38%)

Table 1.1 Number of firms and generated turnover, differentiated by firm size (CBS, 2008).

[2] For a more detailed description of the socioeconomic characteristics of the construction industry in the Netherlands, see the report of a national parliamentary inquiry committee on collusion in this industry (PEB, 2003).

The construction industry can be further differentiated by dividing construction objects into buildings and civil works. Under buildings, we can think of schools, hospitals, libraries, office buildings, houses, et cetera. In the category of civil works, we think of bridges, roads, dikes, tunnels, et cetera. In the Netherlands, about 40% of the above firms are involved in constructing buildings. These firms generated 45% of the € 80 billion turnover (CBS, 2008). Less than 10% of the firms contribute to the construction of civil works, generating 18% of the € 80 billion turnover. More than 50% of the firms specialize, contributing to construction projects by for instance assembling technical installations or by carrying out work such as painting, plumbing or plastering. In 2007, these firms generate 37% of the € 80 billion turnover (see Table 1.2). In the construction industry, firms can be involved in building and/or rebuilding as well as in renovation and/or maintenance work. For this, they depend on suppliers for their materials. These include firms delivering raw materials such as wood, concrete and steel, as well as firms delivering prefabricated building components. In the Netherlands, almost five thousand firms are involved in supplying construction materials.

Number of firms	> 85,000 firms	Constructing buildings	> 34,000 firms (40%)
		Constructing civil works	< 8,500 firms (10%)
		Conducting specialized work	> 42,500 firms (50%)
Overall turnover	> € 80 billion	Constructing buildings	> € 36 billion (45%)
		Constructing civil works	> € 14 billion (18%)
		Conducting specialized work	< € 30 billion (37%)

Table 1.2 Number of firms and generated turnover, differentiated by type of work (CBS, 2008).

1.3.2. Construction projects

To obtain a better understanding of the processes of inter-organizational trust development in construction projects, one has to be aware of the typical features of the context in which the relationships form. Buildings and civil works differ from other products in that, once they occupy a piece of land, design deviations cannot be corrected and quality defects cannot be repaired without huge costs.

Clearly, it is impossible to simply return a faulty building or civil work to the producer. This immobility of construction objects leads to site-specific, unique products, which are largely build and/or assembled on the final site. This immobility also has important organizational implications: construction projects are realized by project organizations composed of a multitude of firms, established for a limited, well-defined period of time. Since firms in the construction industry are generally tied to specific components of construction objects (e.g. foundations, structure, installations) or, especially in the case of specialized consultants, to functional competences (e.g. aesthetics, acoustics, project management), each project organization is unique in terms of specific firms involved. Usually, the construction process is divided into distinct, subsequent phases (e.g. initiation phase, design phase, procurement phase, construction phase, maintenance phase) and firms are designed to fit into specific 'slots' in the project organizations. This fragmentation means that firms involved in constructing a project often are brought into the project not before their specific competences are needed (Kadefors and Laan, 2007b).

In developing trust in project relationships, the immobility of construction objects, the temporality and uniqueness of project relationships, and the fragmentation of the construction process, are not without consequences. The immobility of construction objects means that many principals feel vulnerable to contractors, since design deviations and quality defects can be hidden and/or become irreplaceable once in place. The temporality and uniqueness of project relationships require project participants to handle issues of uncertainty and risk adequately in order to end up with a satisfactory relationship performance, whereas the temporal, unique character of project relationships simultaneously hinders the development of cooperative, trusting relationships. The fragmentation of construction processes may further hinder the development of such relationships across organizational boundaries since firms involved in different project phases operate relative autonomously to each other. Consequently, although studies on trust in the construction industry are rare, in many projects, the processes that normally contribute to the development of inter-organizational trust are assumed to be hampered. This is not such

a problem in traditional and design-build projects with low complexities since the project contingencies then can be relatively easily managed by the project participants. However, when the complexity of a construction project increases, relationships easily deteriorate and a bad relational climate becomes costly. Here, a partnering contract becomes attractive since the increase in project complexity calls for more collaborative ways of solving manifest risks and future problems. However, as noted earlier, although project partnering can be successful in creating more cooperative, trusting relationships, this is not something that project partners do without some reservations. Therefore, one could ask what resources organizations should invest in order to overcome deteriorating patterns of behavior and to service mechanisms involved in establishing and maintaining cooperative, trusting relationships in partnering projects.

1.4. Research approach

In the preceding sections, an outline of the scientific as well as the practical motivations behind this study was given. From a trust research perspective, it has been stated that there is a need to come to a better contextualized understanding of the processes of inter-organizational trust development, in order to provide managers with more robust models and principles for governing inter-organizational relationships. In this regard, longitudinal process studies are suggested as a way of providing useful insights, since it has, to date, been theoretically discussed but rarely empirically explored how and why inter-organizational trust develops over time. From a construction research perspective, it has been claimed that more insights are needed into the processes of developing inter-organizational trust in construction projects, especially since an increased project complexity calls for more collaborative ways of dealing with project contingencies. Here, extensive, qualitative studies on partnering projects are suggested as a way to provide useful insights. In this regard, it also has been argued that organizations involved in project partnering - given the specific characteristics of the construction industry - may import expectations from traditional and design-build projects, with which

they are more familiar, rather than develop trust from scratch. However, since research on trust in construction is rare, empirical data regarding the levels of trust actually present in these forms of contract are missing. Therefore, a concise, quantitative study would also be helpful since it can provide insights into the levels of trust actually present in these types of arrangement. So, the overall conclusion is that there is a strong need - scientifically and practically - to obtain better insights into the processes of developing inter-organizational trust, both in general and in the specific case of the construction industry.

1.4.1. Research questions

This research aims to respond to this need by formulating its central research question as: *Which factors are, in what manner, involved in processes of inter-organizational trust development, particularly in the project-based context of the construction industry?* To guide our research in answering this central research question, four derived research sub-questions were formulated:

1. *What is inter-organizational trust?*

   In the last two decades, much has been written about inter-organizational trust, increasing our understanding of the trust phenomenon itself, as well as of its specific role in inter-organizational relationships. However, although many insights have been made into the richness of inter-organizational trust, there remains confusion and misunderstanding about this complex and slippery concept. Therefore, the purpose of setting and answering this question is to provide insights into the most recent understanding of inter-organizational trust. This will enable us to study the role of trust, in the context of project relationships in the construction industry, in a meaningful way.

2. *What is the role of trust in the governance of inter-organizational relationships?*

In inter-organizational relationships, trust does not operate in isolation. In the last two decades, the question whether, and if so how, trust and control go hand-in-hand has been extensively debated. In this regard, both concepts have been related to the risks business partners face and to the performance of their relationship. However, despite many contributions, the interrelationships between these concepts remain far from clear. Therefore, the purpose of this question is to provide insights into the role of trust in the governance of inter-organizational relationships. This will provide a solid background for studying factors that influence processes of inter-organizational trust development in the construction industry.

3. *What are the levels of inter-organizational trust in construction projects, and how are these influenced by certain specific situational variables?*

Although relationships in construction are often criticized for being adversarial and conservative, so far, little research has explicitly related the general literature on trust to the context of the construction industry. Consequently, empirical data regarding the levels of trust actually present in construction are missing. However, insights herein is of importance in studying processes of developing cooperative, trusting relationships in construction since it has been suggested that organizations in a project-based industry are more inclined to import expectations from settings with which they are familiar, like traditional and design-build forms of contract, than to develop trust from scratch. Therefore, the purpose of this question is to explore the levels of trust actually present in construction projects with respect to some project characteristics and contextual variables. This forms a valuable basis for studying processes of inter-organizational trust development in partnering projects.

4. *How does inter-organizational trust develop over time in a partnering project?*

In many countries, partnering arrangements in the construction industry are increasingly advocated. Although several studies have shown that this type of project can be successful in creating more close relationships, other researchers have stressed that not all partnering projects do well and that there are no quick fixes that guarantee success. They suggest that the mechanisms involved in establishing and maintaining cooperative, trusting relationships are complex and difficult to manage purposefully, all the more so since business partners have to overcome the deteriorating patterns of behavior they often face in traditional and design-build projects. Therefore, the purpose of answering this question is to gain a better understanding of the factors involved in developing trust between business partners involved in a partnering project.

1.5. Research design

To obtain insights in the factors involved in the development of trusting, cooperative relationships in the construction industry, we designed a research plan that guides our efforts in answering the research questions. This design consists of four phases, corresponding with the four research sub-questions, including both theoretical and empirical parts.

1.5.1. Research stage 1: literature study

In reviewing literature, the first phase of this research consists of providing insights into the most recent understanding of trust. In studying processes of inter-organizational trust development in the construction industry, we should be aware of the complexity and multidimensionality of the trust phenomenon. Otherwise, by not taking the possible confusions and misunderstandings regarding this slippery concept into account, one risks of ending up with misleading, meaningless results. Therefore, first of all, we discuss several widely-

used definitions of trust. Next, by focusing on the dimensions along which inter-organizational trust has been conceptualized, we provide insights into the most important subjects and objects of inter-organizational trust. After questioning on which specific aspects one can aim inter-organizational trust at, we subsequently deduce where trust comes from, closely intertwined with different theoretical perspectives. Finally, by emphasizing the dynamic character of inter-organizational trust, we are able to show the interconnectedness of all these trust-related elements. Thus, by extensively discussing the most recent literature on trust, we untangle the confusion and clarify the complexities of this phenomenon such, that we are able to thoroughly study the processes of inter-organizational trust development in the construction industry. In this way, the literature review - reflected in the second chapter of this thesis - contributes to answering the first research sub-question of this study.

1.5.2. Research stage 2: theoretical framework

Building on the first stage, the second phase of this research comprises the development of a conceptual model that can be used for analyzing the factors that influence the processes of inter-organizational trust development. For this, we review the most recent literature on the role of trust in the governance of inter-organizational relationships. Here, many scholars have discussed the interrelationships between trust and control, connecting both concepts to the levels of risk within, and the actual performance of, an inter-organizational relationship. Therefore, first, we consider the literature on the interrelationship between trust and the risks that business partners face both internal and external to their relationship. Second, we discuss how trust and control substitute and/or complement each other in counteracting these risks. Here, we pay attention especially to the formal and informal forms of control adopted by the organizations involved. Third, we focus on the influence of the actual performance of a relationship on the levels of trust and the control mechanisms previously adopted. Finally, by integrating all these factors, we derive a theoretical framework that guides our empirical study on the processes

of inter-organizational trust development in the construction industry. Thus, the conceptual model - the focus of the third chapter of this thesis - contributes to answering the second research sub-question of this study.

1.5.3. Research stage 3: survey

Since studies on trust in the construction industry are rare, empirical data on trust are missing. Therefore, the third phase of this research consists of a concise, quantitative study into the levels of trust actually present in construction projects with respect to certain specific situational variables. This is of importance since business partners in project-based industries are assumed to import trust from settings with which they are familiar, like traditional and design-build types of arrangement, rather than develop trust from scratch. As such, the survey provides insights into what project partners usually go through in construction. First, we identified the target population and a sample of both principal and contractor organizations that were able to answer questions about trust and factors that influence it in construction project settings. Subsequently, we designed the questionnaire, making use of measures from other studies. Further, we tested the instrument by asking knowledgeable analysts - both from a trust debate and construction industry perspective - to be critical to the questions. Next, we contacted the respondents, sending them the final questionnaire, a detailed covering letter and a return envelope. A replacement form was sent to the non-respondents four weeks after the first mailing. On receipt of the returned surveys, we created a code book in which every question was allocated a numerical value for every answer category. Finally, we analyzed the data set, exploring the levels of trust with respect to some project characteristics and contextual factors. In this way, the quantitative study - reflected in the fourth chapter of this thesis - contributes to answering the third research sub-question of this study.

1.5.4. Research stage 4: case study

The fourth phase of this research comprises a single, longitudinal case study in line with the conclusions of the literature review and the survey conducted in the first three stages of our study. The case study includes an extensive analysis of the factors involved in the development of trust between business partners involved in project partnering. First, we selected a case to study that offered exceptional opportunities for studying how and why trust develops over time in a partnering project: a project alliance. Project alliances are rare in the construction industry and, since it has been argued that there are no quick fixes in creating cooperative, trusting relationships in partnering projects, such a case enables us to explore how business partners try to overcome the deteriorating patterns of behavior they often face in traditional and design-build projects. Second, we collected data by conducting two series of in-depth interviews with all the relevant project participants. In this we acquired a picture of the project's history and the project's future prospects as well. Further, we studied important project documentation. In the interviews, we made use of a case study protocol based on the conceptual model developed in the second phase of this study. Third, we started analyzing the data by reading through the transcribed interviews and then identifying and labeling passages related to the interview themes as defined in our case study protocol. Subsequently, by clustering labeled passages and looking for patterns emerging in the data, we moved from a simple case description to an interpretative mode: exploring mechanisms that contribute to the establishment and maintenance of cooperative, trusting relationships between business partners in a project alliance. In this way, the case study - theme of the fifth chapter of this thesis - contributes to answering the fourth research sub-question of this study.

1.6. Research philosophy

In conducting research, scholars adhere to various philosophical perspectives. On the one hand, positivistically-inclined researchers assume 'that an objective world exists and that scientific

methods can mirror and measure while seeking to predict and explain causal relations among variables' (Swanson and Holton, 2005, p.18). Consequently, they focus on seeking out facts in terms of relationships among variables. The challenge for them is to verify that relationships are consistent in like conditions. On the other hand, interpretative leaning researchers take the view that researchers adhering to the positivistic perspective remove meaning from the context in studying a certain phenomenon. Consequently, they prefer to focus on 'subjective meanings as how individuals or members apprehend, understand, and make sense of events and settings and how this sense making produces features of the very settings to which sense making is responsive' (Swanson and Holton, 2005, p.19). Within the trust debate, it has been proposed that organizations base their acts on an interpretation of the behavior of a partner firm (e.g. Weick, 1995; Nooteboom, 2002; Bijlsma-Frankema and Costa, 2005; Vlaar et al., 2007). On this basis, one assumes the trustworthiness of a business partner, offers a certain amount of trust, observes whether this is upheld or violated and, subsequently, if the trust is perceived as having been reciprocated, offers more trust to the partner firm. However, the converse may also easily apply. Therefore, in both our quantitative and qualitative studies, we focus on subjective perceptions of people. The survey includes a single measure of the perceived levels of trust within a large sample of construction projects, whereas the case study includes a longitudinal measure of how and why trust develops over time in the perception of project participants. Consequently, in this research, we adhere more closely to the interpretive research philosophy, than the positivistic one.

1.7. Research contribution

1.7.1. Theoretical

By focusing on the factors involved in the development of inter-organizational trust in the construction industry, one is contributing to the body of knowledge in several ways. First, by studying processes of inter-organizational trust development, we

respond to the statement by Van de Ven and Ring (2006, p.154) that more longitudinal research is needed on the dynamics of trust, since scholars have mainly theoretically discussed but rarely empirically explored how and why trust develops over time. By studying these processes in the project-based context of the construction industry, we further respond to the statement by Bijlsma-Frankema and Costa (2005, p. 402) that there is a need to come to a better contextualized understanding of the dynamics of trust since the inclusion of the context may further deepen our understanding of how and why trust develops over time. The specific context of the construction industry challenges our conventional understanding of the processes of inter-organizational trust development since organizations in this project-based industry are not used to establishing and maintaining cooperative, trusting relationships. Although this is exactly what project participants in a partnering project strive for, in traditional and design-build projects, relationships between organizations frequently deteriorate such that project partners easily become suspicious and frightened. They may even become biased by negative stereotyping since organizations - given the specific project-based characteristics of the construction industry - are inclined to import expectations of vulnerability and risk from settings with which they are familiar, rather than develop trust from scratch (Meyerson et al., 1996). Thus, we contribute to the general literature on trust by providing empirical evidence on business partners working on establishing and maintaining cooperative, trusting relationships in a context where, for organizations, relying on trust is not the normal route.

Second, by doing this, we also contribute to the body of knowledge on the construction industry. Although trust is often seen as a critical success factor in realizing efficient and effective relationships between business partners, so far, little research has explicitly related the general literature on trust to the specific context of the construction industry. Since there are no quick fixes that guarantee success in creating trusting relationships, we elaborate on the need to gain a better understanding of the processes of inter-organizational trust development in cooperative contractual arrangements in the construction industry. Here, while our review of the most recent

literature on inter-organizational trust may provide useful insights, both our quantitative and qualitative study on trust in the construction industry are especially helpful in discerning factors that shape project relationships in this project-based context. Thus, we contribute to the knowledge on the construction industry by providing insights, derived from the general literature on trust and from our concise survey, into the broad range of factors that affect trust in project relationships, and from our extensive case study, which helps us to appreciate the function, purpose and effects of various practices in establishing and maintaining cooperative, trusting relationships in partnering projects.

1.7.2. Practical

Since the focus is here on the processes of inter-organizational trust development in the context of the construction industry, the practical contribution of this study is twofold. First, by longitudinally studying how and why trust between business partners develops over time, we are able to provide managers with more evidence-based principles for managing inter-organizational relationships (Van de Ven and Ring, 2006). Since the inclusion of the project-based context will further improve the understanding of the dynamics of inter-organizational trust, our study provides more robust grounds for making causal inferences as to how and why trust changes over time (Bijlsma-Frankema and Costa, 2005). Consequently, we will be able to provide organizations with insights from trust-building practices so that they can design and apply their practices more consciously and also avoid processes and systems that may be detrimental to the development of trust. Second, earlier research on the construction industry has discussed whether cooperative relationships can be intentionally shaped in one-off projects or whether project success requires a process of cultural change that can only develop over a longer period of time (Bresnen, 2007). Since we discuss the conditions necessary for trust development in project relationships, we are able to provide managers with insights into factors that influence the behavior of project participants so that cooperative, trusting relationships are more likely to develop and persist.

1.8. Outline of the thesis

The layout of the study is schematized in Figure 1.1. In this figure, the research sub-questions - corresponding to the subsequent research phases - are linked to the subsequent chapters of the thesis. In Chapter 2 we present our literature review about the definitions, subjects, objects, aspects and sources of inter-organizational trust. Chapter 3 comprises the theoretical framework in which we relate the role of trust and control in the governance of inter-organizational relationships to the risks business partners face and to the performance of their relationship. Together, both chapters form the theoretical part of the thesis, answering research sub-questions 1 and 2. Chapter 4 focuses on the concise survey on levels of trust in construction projects with respect to certain specific situational variables. Chapter 5 presents our extensive case study on developmental processes of inter-organizational trust in a partnering project. Together, these two chapters form the empirical part of the thesis, answering research sub-questions 3 and 4. In Chapter 6, we consider the answers to all four research sub-questions. The combined conclusions enable us to answer the central research question on factors involved in processes of inter-organizational trust development, as studied in the specific context of the construction industry. In this final chapter, we further discuss the limitations of the study as well as making recommendations for future research.

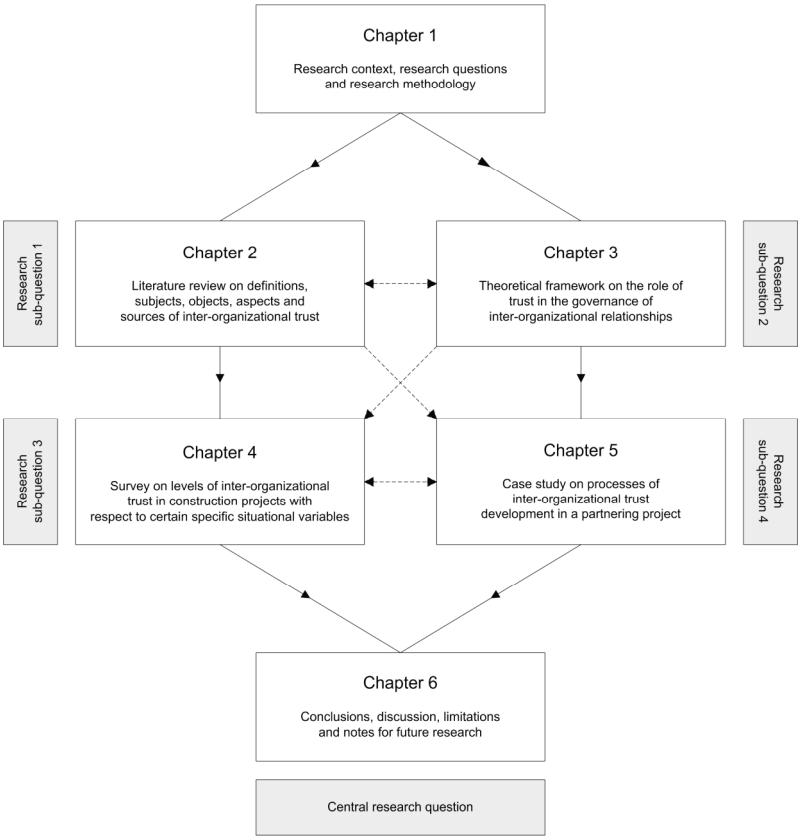

Figure 1.1 Layout of the study.

Chapter 2

Inter-organizational trust - literature review

2.1. Introduction

In the last few decades, much has been written about trust, both in its own right and as an important factor in understanding inter-organizational relationships. However, although many insights have been given into the richness of the trust phenomenon, there is still considerable confusion about this complex and slippery concept, with partly overlapping and partly conflicting definitions, analyses, explanations and conclusions. Therefore, we need to untangle the confusion and clarify the complexities of trust so that we are able to adequately study the role of trust in the context of the construction industry. To achieve this, we first discuss several widely-used definitions of trust in Section 2.2. In this, we concentrate on, among other things, journals such as the Academy of Management Review, Organization Studies, Organization Science, International Sociology and Group and Organization Management. Next, by focusing on the dimensions along which inter-organizational trust has been conceptualized, we provide insights into the most important subjects and objects of inter-organizational trust in Section 2.3. After questioning in Section 2.4 on which specific aspects one can aim inter-organizational trust at, we subsequently deduce where trust comes from in Section 2.5. Further, by discussing the literature on the dynamics of trust, closely intertwined with the development of inter-organizational relationships, we are able to show the inter-connectedness of all these trust-related elements in Section 2.6. This provides a solid background for studying the role of trust in the context of the construction industry. Thus, in this chapter, we address the following research sub-question: *What is inter-organizational trust?*

2.2. The concept of trust

First of all, we define trust by reviewing several widely-used definitions. Nooteboom (2002, p. 8) states that 'perhaps the most basic point in the analysis of trust is that we should systematically recognize the two-sidedness of trust. We should distinguish *trust* on the part of the trustor, and *trustworthiness* on the side of the trustee'. Rousseau et al. (1998, p. 395) define trust as 'a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another'. This definition implies that trust is *a state of mind*, not a behavior, but that it may lead to trusting behavior (Nooteboom, 2006). Furthermore, it presupposes a condition of uncertainty which is, as Gambetta (1988, p. 218) observed, central to the notion of trust: '[i]t is related to the limits of our capacity ever to achieve full knowledge of others, their motives and their responses to endogenous as well as exogenous changes.' On this basis, many authors have connected trust with *the existence of risk* (e.g. Gulati, 1995; Nooteboom et al., 1997; Das and Teng, 2001). With regard to this, it has been argued that trust concerns *a willingness to become vulnerable* to another in a risky situation (trusting intentions), as well as *the expectation not to be harmed* by the behavior of the other in this risky situation (trusting beliefs). Both factors are influenced by someone's own *disposition to trust*, i.e. the assumption that, in general, others are trustworthy (McKnight et al., 1998; McKnight and Chervany, 2006).

By considering trust as a 'willingness to submit to the risk that things or people may fail us, with the expectation that they will not, or the neglect or lack of awareness of the possibility that they might', Nooteboom (2002, p. 45) emphasizes that, apart from an expectation that things will not go wrong, *people may simply not think of things going wrong*. He suggests the notion of *trust as a default*: '[o]n the basis of available knowledge, routine or instinct (…), one assumes trustworthiness until evidence to the contrary appears (…). In the absence of contrary evidence we do not calculate, but when it arises we might' (p. 43). Or, in case of mistrust: '[w]e assume a lack of trustworthiness, until evidence to the contrary arises' (p. 45). So, trust can have both *calculative* as well as *non-calculative* elements (e.g.

Kramer, 1999; Lindenberg, 2000; Möllering, 2005a). The relation between the expectation that things will not go wrong - or the neglect or lack of awareness that things can go wrong - and the possibility that they actually might, has been discussed thoroughly (e.g. Lindenberg, 2000; Nooteboom, 2002; Kramer, 2006). Here, it has been argued that trust can be considered as an expectation that trustees will not engage in opportunistic behavior, *even in the face of countervailing (short-term) objectives*. After all, since uncertainty is a *sine qua non* of trust, trustors by definition face the risk of trustees behaving opportunistically. Accordingly, we follow Nooteboom (2002, p. 48; 2006, p. 252) by defining trust as '*an expectation that things or people will not fail us, or the neglect or lack of awareness of the possibility of failure, even if there are perceived opportunities and incentives for it*'. Similar definitions have been used by many others (e.g. Sako, 1991; Dyer and Chu, 2003; Krishnan et al., 2006).

2.3. Subjects and objects of inter-organizational trust

Although a relative consensus in defining trust has been reached, studying trust in the context of inter-organizational relationships remains problematic since there is considerable confusion about the appropriate level of conceptualization. As indicated, trust involves a subject, someone who trusts, a trustor, and an object, someone or something trusted, a trustee (Nooteboom, 2002). The primary dimensions along which the *subjects and objects of inter-organizational trust* have been conceptualized are *individuals* and *organizations*. When both the trustor and the trustee are individuals, conceptualizations of what is commonly referred to as inter-personal trust are to be found. When the trustor and the trustee are organizations, we find conceptualizations of what is referred to as inter-organizational trust (Zaheer et al., 1998; Currall and Inkpen, 2006). Conceptualizations of trust that involve individuals as trustors, and either individuals or organizations as trustees, are relatively unproblematic, but problems arise when trust is attributed to the organization itself (McEvily et al., 2006; Janowicz and Noorderhaven, 2006). Since trust is defined as a state of mind, not a behavior, it has

been argued that it is inherently *an individual-level phenomenon* and that *organizations as such cannot trust* (Doney and Cannon, 1997; Dyer and Chu, 2000; Currall and Inkpen, 2002). Therefore, we assume individuals and organizations to be the objects of inter-organizational trust and organizational members, rather than organizations, to be the subjects of inter-organizational trust.

However, here, an important question arises about the relation between trust in individuals and trust in organizations, since trust in individuals can be based on trust in the organizations they work for, and conversely, trust in organizations can be based on trust in the individuals belonging to them. This is because the culture, structure and procedures of organizations may enable, constrain and/or guide the behavior of its members, whereas these organizational characteristics are simultaneously formed by the individuals acting on behalf of the organization (Currall and Judge, 1995; Perrone et al., 2003; Möllering, 2005b). So, we can trust individuals, but if they are, for instance, not supported by their superiors, our trust is not reliable. We can also trust an organization, but if its policy is not adequately executed by its members, our trust is also not reliable. Here, Janowicz and Noorderhaven (2006) suggest that the *trust of boundary spanning individuals* - i.e. the roles and positions that connect organizations with outside partners - is of particular importance in studying the role of trust in inter-organizational relationships, rather than the trust held by non-boundary spanning individuals. Since individuals can be more, or less, trustworthy than their organizational roles and positions require, we need to take into account both the actual trustworthiness of boundary spanning individuals, as well as *how their positions and roles are accumulated in the culture, structure and procedures of an organization* (Ring and Van de Ven, 1994).

2.4. Aspects of inter-organizational trust

In studying trust, scholars not only struggle with levels of conceptualization, but they also face confusion about the aspects of trust. Since trust is defined as 'an expectation that things or people will

not fail us (…), even if there are perceived opportunities for it' (Nooteboom, 2002, p. 48), it can be questioned whether one who is trusted *is able to* conform to this expectation. In the literature, this aspect of trust is called *competence trust*, reflecting the level of trust one has in the technical, organizational and managerial competences of a trustee (Klein Woolthuis et al., 2005; Nooteboom, 2006). Here, the trustor faces the question whether a trustee is able to perform to expectations. This 'competence trust shows itself best when it is stretched' (Nooteboom, 2006, p. 88). The competence aspect of trust can be distinguished from the *intentional* aspect of *trust*, which refers to the intentions of a partner towards the relationship. Here, the question is whether trustees *intend to use* their ability to conform to a trustor's expectations. Intentional trust includes the expectation that a trustee will not behave opportunistically. Opportunism can be perceived as weak, when there appears to be a lack of dedication to perform to the best of one's competence. This is the case when a trustee offers too little in terms of effort and attention. Opportunism is perceived as strong, when there appears to be self-interest seeking with guile, implying that a trustee is trying to take excessive advantage from the relationship (Nooteboom, 2002). The opposite of the latter is termed benevolence or goodwill, which has also been considered as a crucial aspect of trust by many authors (e.g. Mayer et al., 1995; Sako, 2000; Klein Woolthuis et al., 2005). Therefore, intentional trust can be split between *trust in dedication* and *trust in benevolence*. Nooteboom (2002, p. 88): '[d]edication shows itself best when there is no external pressure for it, that is when there are opportunities for slack. Benevolence shows itself best under opportunities for opportunism and temptations or pressures to utilize them'.

However, since favorable conditions for competence, dedication and benevolence may change due to factors exogenous or endogenous to a relationship, it has been argued that someone's *trustworthiness - both in intentions and competences - is subjected to limits* (Nooteboom, 2002). Conditions may extend beyond someone's competences, and situational temptations of potential losses or golden opportunities may exceed someone's commitment to perform (Lindenberg, 2000). In line with this, Nooteboom (2002) argues that

someone's *trust is also subjected to levels of tolerance for deviant behavior*: '[w]hen one observes or expects behavior beyond those tolerance levels, one is triggered to consider possibilities of untrustworthiness' (p. 46). Here, the earlier-mentioned idea of trust as a default comes into play: '[w]e assume trustworthiness, *under certain conditions*, until contrary evidence appears. In the absence of contrary evidence we do not calculate, but when it arises we might, if the evidence triggers awareness that limits of acceptability are exceeded' (p. 46). So, a trustor can trust a trustee with regard to some aspects (competences / intentions), in certain conditions, but not in others (Nooteboom, 2002).

2.5. Sources of inter-organizational trust

Whereas in the previous section it was questioned at what aspects trust could be aimed, in this section we determine where trust comes from. Since two, apparently contradictory, theoretical traditions on trust can be discerned, there is considerable confusion about the *sources of trust*. One tradition, favored by micro-economics, sees trust as a calculated risk, presuming that *trust is sourced in a rational evaluation*, emphasizing the *extrinsic value* of trust. The other strand is the psychological tradition that sees trust as a presumed other-regard without calculativeness, presuming that *trust is sourced in a social orientation* towards other people, emphasizing the *intrinsic value* of trust (e.g. Granovetter, 1985; Rousseau et al., 1998; Kramer, 1999; Nooteboom, 2002; Lindenberg, 2000). Elaborating on these traditions, many authors have differentiated trust into partly conflicting and partly complementary categories such as calculus-based trust, knowledge-based trust, affect-based trust, empathy-based trust and identification-based trust (e.g. Shapiro, 1987; Gulati, 1995; McAllister, 1995). The coherence of these categories has been debated extensively. By discussing conceptual contradictions between rational and relational considerations of trust, Kramer (1999, p. 574) argues that 'what is needed is a conception of trust that incorporates calculative processes (…), but that also articulates how social and situational factors influence (…) such calculations'. For this, we follow Nooteboom (2002)

in assuming trust to be a default. He simply states that, *on the side of the trustor*, trust has rational reasons *and* psychological causes. Rational reasons for trust are based on inferences of someone's trustworthiness, indicating how a trustor should, from a normative standpoint, make decisions about trust (Kramer, 1999). From a more descriptive point of view, trust is sourced in psychological causes of affect, routine, lack of awareness or neglect of relational risk, which block, affect or enable rational evaluations of trust (Nooteboom, 2002). Kramer (2006, p. 69): '[t]he wisdom of a decision to trust (…) can be construed in terms of a good fit (…) between our decisions to trust others and their actual trustworthiness'. Since rational reasons for trust are based on a conscious consideration of someone's reliability, we need also to know what sources of trustworthiness are available *on the side of the trustee*.

Focusing on *sources of trustworthiness*, we can ask whether people are competent. We can also ask what will make them dedicate to a relationship and what let them refrain from opportunism. Here, on the one hand, it has been stated that people can behave in a trustworthy manner because it is in their own interest to do so. With regard to this self-interest, two major sources of trustworthiness can be discerned (Nooteboom, 1996; 2002). First, a *limit on opportunities for deviant behavior* may bring about trustworthy behavior. Such opportunities can be restricted by contractual obligations or by hierarchical pressure. So, people may behave in a trustworthy manner because they face legal contract enforcement when not doing so. Further, they may behave in a trustworthy manner because they face sanctions from superiors if they do not (Nooteboom, 2002). Secondly, a *limit on incentives to use opportunities for deviant behavior* may also result in trustworthy behavior. This refers to a situation where people behave in a trustworthy manner because they are so dependent on a relationship that they will not hazard opportunistic behavior for fear of retaliation. It furthermore includes the protection of reputation and the assessment of possible future benefits of present cooperativeness (Nooteboom, 2002). So, the primary motivations for keeping one's word could be self-interest or deterrence, emerging when the potential costs of discontinuing a relationship or the likelihood of

retributive action, outweigh the short-term advantage of acting in a distrustful way (Shapiro, 1992). On the other hand, man is not always self-interested and opportunistic. In business, one also finds honesty, integrity and decency (Klein Woolthuis et al., 2005). So, there are other-directed sources of trustworthiness that go beyond self-interest. Whether we earlier stated that trust is not purely rational and extrinsically valued, we now state that trustworthiness may also be relational and intrinsically valued, sourced in general social norms and values, or in more-personalized bonds of empathy, identification and routinization (Nooteboom, 2002). Here, trustworthiness is, above all, appreciated for its own sake. This source of trustworthiness refers to a *limit on inclinations to use opportunities for deviate behavior*.

Table 2.1 provides an overview of all these sources of intentional trustworthiness. With only small modifications, this is adopted from Nooteboom (2002). Apart form the distinction between self-interested and other-directed sources of trustworthiness, the table also distinguishes sources arising that are independent of specific relationships - the so-called macro-sources[3] - from those arising within specific relationships - the so-called micro-sources. The first are impersonal, and provide the basis for trust in the weak sense, i.e. *thin trust*, whereas the latter are more personalized, providing the basis for trust in the strong sense, i.e. *thick trust*.

	Macro-sources *General, impersonal*	Micro-sources *Relation-specific, personal*
Self-interested sources *Limit on opportunities to deviate* *Limit on incentives to deviate*	 Legal enforcement Reputation	 Hierarchy Dependency
Other-directed sources *Limit on inclinations to deviate*	Values, norms	Empathy, identification, routinization

Table 2.1 Sources of intentional trustworthiness (adapted from Nooteboom, 2002).

[3] These sources refer to the broader context of laws, customs and assumptions in which relationships are embedded. Here, legal systems, prevailing notions of ethical behavior, and various kinds of established practices provide a broad support for trustworthiness. As such, they deliver institutions-based trust (e.g. Zucker, 1986; Arrighetti et al., 1997; Möllering, 2005b, 2006).

2.6. Dynamics of trust in inter-organizational relationships

In the preceding sections, the most recent literature on definitions, subjects, objects, aspects and sources of inter-organizational trust was discussed. Nevertheless, trust is not a static phenomenon: as relationships develop, business partners will update their levels of trust, depending on the ongoing interactions and features of the context in which these occur. Therefore, in order to understand the specific role of trust in the context of inter-organizational relationships, we need to untangle both, that is the characteristics of relationship development, as well as the dynamics of trust.

2.6.1. Dynamics of inter-organizational relationships

First, our focus is on the development of inter-organizational relationships. For this, we make use of a model as proposed by Ring and Van de Ven (1994). By emphasizing that *inter-organizational relationships emerge, grow and dissolve over time*, they introduce 'a process framework that focuses on formal, legal and informal, psychological processes by which organizational parties jointly negotiate, commit to, and execute their relationship in ways that achieve efficient and equitable outcomes and internal solutions to conflicts when they arise' (p. 90). They suggest four key factors that are crucial in studying inter-organizational relationship development. The first factor is the rise of *uncertainty*, both *exogenous and endogenous* to a relationship. On one hand, business partners face external, environmental uncertainties regarding the future states of nature. On the other, they face internal uncertainties as to whether they are able to rely on the trustworthiness of their partners as a counter to problems of opportunism. The second factor is the *assessment of the relationship* in terms of both *efficiency and equity*. Efficiency refers to 'the most expeditious and least costly governance structure for undertaking a transaction' (p. 93). Equity refers to fair dealing, which does not mean that inputs and outputs are divided

equally between all parties, but 'that the parties receive benefits proportional to their investments' (p. 94). The third factor in analyzing the development of inter-organizational relationships has to do with the *resolution of conflicts*. Here, Ring and Van de Ven (1994) suggest that, in order to guarantee continuation of a relationship, *internal conflict resolution* is as important as resorting to *institutional guarantors* (e.g. courts, arbitrators). Finally, as a fourth factor, they distinguish the importance of *role-relationships*: '[a]lthough our focus is on inter-organizational relationships, a macro level phenomenon, these relationships only emerge, evolve, grow and dissolve over time as a consequence of individual activities' (p. 95). Since individuals may need to act as agents for their organizations, the authors assume that role-relationships and *inter-personal relationships* need not be identical.

Based on these factors, Ring and Van de Ven (1994) propose a process model of inter-organizational relationships which, in their opinion, are 'socially contrived mechanisms for collective action, (…) continually shaped and restructured by actions and symbolic interpretations of the parties involved' (p. 96). They view the development of relationships as 'consisting of *a repetitive sequence of negotiation, commitment and execution* stages, each of which is *assessed in terms of efficiency and equity*' (p. 96). In the negotiation stage, the focus is on *formal bargaining* and *informal sense making*. Parties will develop joint expectations about their motivations, possible investments and perceived uncertainties. They also get to know and understand each other to a certain extent. In the commitment stage, parties will reach an agreement on the obligations and rules for action in the relationship. A governance structure is established and codified in a *formal contract* and 'informally understood in a *psychological contract* between the parties' (p. 98). Finally, in the execution stage, these commitments and rules of action are put into practice: '[t]hrough series of role interactions, parties may become more familiar with one another as persons, and they may increasingly begin to rely on *inter-personal*, as opposed *to inter-role relationships*' (p. 98). Over time, misunderstandings and changing expectations are inevitable, so parties may have to renegotiate in order to reach supplementary agreements over contested issues.

By elaborating on the work of Larson (1992), Klein Woolthuis (1999) has extended the model of Ring and Van de Ven (1994) by focusing on *the role of past and future cooperations*. The past is seen as important, because it gives strong leads to why a partner is chosen and why partners become willing to cooperate. In the phase where preconditions for exchange are created and conditions on which to build a relationship are formed, personal reputations, prior exchange relationships and firms' reputations play crucial roles. Further, in the phase where the relationship is operational, mutual economic advantage is seen as important as the development of a trusting atmosphere: '[t]he integrity of participants, their honesty and their continued efforts to improve the exchange process became important ingredients of the process as firms took incremental risks and invested more in the relationship' (Larson, 1992, p. 88). Finally, future prospects also play an important role, especially when a relationship is ending. Klein Woolthuis (1999, p. 55): '[i]f the active, operational relationship between partners is ended because of the joint project has been completed, this does not imply that the relationship is broken'. Partners who have already built a joint exchange history, may prefer to cooperate with such partners if new projects are to be started. This continuation may be extrinsically valued, based on business complementarities and jointly-achievable opportunities. It may also be intrinsically valued, based on the continuation of a satisfactory relationship.

2.6.2. Dynamics of inter-organizational trust

The developmental perspectives of inter-organizational trust are closely intertwined with Ring and Van der Ven's view (1994) on inter-organizational relationship development. Several authors discuss, for instance, how the source of trust may change as relationships develop (e.g. Lewicki and Bunker, 1995; Rousseau et al., 1998; Nooteboom, 2002). Others focus on how trust develops in vicious or virtuous cycles, depending on positive or negative cycles of reciprocity (e.g. March and Olsen, 1975; Bijlsma-Frankema and Costa, 2005). Further, since it has been suggested that the starting conditions of an

inter-organizational relationship may leave strong imprints on the development of trust (Vlaar et al., 2007), specific attention has also been given to initial trust building processes (e.g. Meyerson et al., 1996; McKnight et al., 1998). In the next three paragraphs, we discuss these views on inter-organizational trust development into more detail.

Concerning the possible *change in source of trust*, a lot of research emphasizes that, in trust development, rational, calculus considerations interact with more intuitive, psychological processes (e.g. Lewicki and Bunker, 1995; Rousseau et al., 1998; Kramer, 1999; Lindenberg, 2000; Möllering, 2001; Nooteboom, 2002). It has been presumed that, *during the early stages of a relationship*, someone's *trust is based on a conscious evaluation* of a trustee's self-interest and competences. This is especially the case when partners meet first, having no prior experience of each other. Nooteboom (2002) states that in this phase of a relationship, people will actively look for sources of trustworthiness in their partners. Since these sources are impersonal, not yet involving direct personal interactions and experience, this rational form of trust is often seen as a 'thin' form of trust (Nooteboom, 2006). *As relationships develop, interaction becomes the heart of the trust development process*, and this form of trust can be extended with, or replaced by, a form of trust that has been labeled as relational trust (Rousseau, et al., 1998), process based trust (Zucker, 1986) or affect-based trust (McAllister, 1995). The implication is that *feelings of personal attachment and tacit mutual understanding will arise* and influence actions taken. Since this form of trust is personalized and arises within a specific relationship, it is often seen as a 'thick' form of trust (Nooteboom, 2006).

Trust has a tendency to cyclically develop or break down in determining how far trustworthiness goes (Sako, 2000). Several studies have proposed that trust is granted and tested through processes of incremental steps in which parties increase their vulnerability and interdependency (Gulati, 1995; Lewicki and Bunker, 1996). Currall and Inkpen (2006) argue that, during the early stages of an inter-organizational relationship, development of trust is slow because parties tend to be reticent about trusting. In their opinion, *trust development follows an incremental pattern*: '[o]ne may trust in small

ways first, observe whether trust is upheld or violated, and then proceed with caution in trusting one step at a time' (p. 239). Nooteboom (2002) suggests that when one obtains knowledge and experience, the evaluation of someone's trustworthiness is accompanied by setting tolerance levels for deviant behavior. When relationships develop, 'it may happen that on the basis of identification and empathy tolerance levels of trust are widened' (Nooteboom, 2002, p. 91). In this regard, Pettit (1995) emphasizes that *trust responsiveness is of special importance*: '[w]hen offered trust, people may reciprocate due to the love of regard or standing in one's own eyes and in the eyes of others' (in Nooteboom, 2002, p. 94). When trust is reciprocated, there is a possibility of an upward spiral in trust. 'A positive cycle of reciprocation (…) can widen the limits of trustworthiness and someone's tolerance levels of trust' (p. 94). This yields less occasion for mistrust to arise. Weick (1995) argues with regard to this that *people will be more open to expectancy confirmation, than to expectancy denial*. By including the notion of relevance, March and Olsen (1975) go even further and argue that organizational members trust those who are perceived to bring about desirable events, or to prevent undesirable events happening, in areas that they experience as relevant: '[i]f actors trust others, they seek interaction with them, tend to like what they like and see what they see, and share definitions of relevance leading to further integration between them' (in Bijlsma-Frankema and Costa, 2005, p. 263). However, the converse may also apply. March and Olsen (1975): '[i]f others are distrusted, actors will tend to dislike what they like (…), and to the degree that the structure permits them, tend to avoid interaction with them' (p. 263). Low levels of tolerance will more quickly trigger an awareness of possible deviant behavior, which may easily lead to a negative spiral of suspicion and fear (Nooteboom, 2002). Similarly, Currall and Inkpen (2006, p. 239) emphasize that, when trust is violated, 'Herculean trust-building efforts must take place simply to return to the zero point and even further efforts are required to move into the positive trust domain'. In other words, *trust tends to beget benevolence in virtuous cycles, while mistrust tends to beget opportunism in vicious cycles* (Bijlsma-Frankema and Costa, 2005).

An important question is how trust arises when there was none before. Since trust tends to develop in vicious or virtuous cycles, Vlaar et al. (2007) suggest that *initial levels of trust and distrust leave strong imprints on the development of relationships in later stages of collaboration*. McKnight and Chervany (2006, p. 29) argue that 'the first part of a relationship is key, because opinions and beliefs formed early tend to continue in the future, perpetuated by belief-maintaining mechanisms'. Following on from Currall and Epstein (2003), Currall and Inkpen (2006) state that, during the initial phases of a relationship, *trust starts close to a zero point of neither trust nor distrust* because parties lack information about the trustworthiness of their partner. Other authors, for instance McKnight et al. (1998) and Meyerson et al. (1996), emphasize that, during the initial phases of a relationship, *trust is built so fast that it is almost instantly there*, enabling relationships to start with significant levels of trust. McKnight et al. (1998) produced a model that provides a set of factors and processes through which trust is built initially, before parties have had the time to get to know each other by interaction. They suggest that initial levels of trust will be based on two factors: trusting intentions (the willingness to become vulnerable) and trusting beliefs (the expectation not to be harmed by the behavior of a partner). Both factors are influenced by someone's own disposition trust (the assumption that, in general, others are trustworthy) and by their belief that the situation makes the context conducive to trust. Further, they posit that a partner's reputation and one's illusion of control may also impact on the initial levels of trust. Meyerson et al. (1996) emphasize that, during the initial stages of inter-organizational relationships, *organizational members may import expectations of trust from other settings with which they are familiar, rather than develop trust from scratch*. They developed the concept of *swift trust* for temporary teams, i.e. those formed around a common task with a finite life span. Such teams contain members with diverse and well-defined specialties and skills, a limited history of working together and a limited prospect of working together in the future. The assumption is that, since time pressure hinders the ability of team members to develop expectations based on first-hand information, they will make initial use of category-driven information processing to

form stereotypical impressions of each other. Swift trust therefore de-emphasizes the influence of inter-personal dimensions in inter-organizational trust development and is based initially on broad categorical social structures and, only later, on action.

2.7. Concluding remarks

This chapter has discussed what trust is. In answering this question, we concluded that it is important to distinguish trust on the part of the trustor from trustworthiness on the part of the trustee. We follow Nooteboom (2002, 2006) by defining trust as *an expectation that things or people will not fail us, or the neglect or lack of awareness of the possibility of failure, even when there are perceived opportunities and incentives for it*. Thus, trust may have a rational basis as well as psychological causes. It can be focused on the competences as well as the intentions of a trustee. In terms of competence trust, the question arises whether a trustee is able to conform to a trustor's expectations. Intentional trust refers to the issue of whether trustees do intend to use their ability to conform to a trustor's expectations. The intentional trustworthiness of a trustee can be sourced in the lack of opportunities and incentives for deviant behavior as well as in the lack of any inclination to deviate from what agreed upon.

Since trust may increase or decrease over time, a process approach is required in order to understand its role in ongoing inter-organizational relationships. Ring and Van de Ven (1994) see relationships as consisting of repetitive sequences of negotiation, commitment and execution stages. This developmental view of inter-organizational relationship development is closely intertwined with views on inter-organizational trust development. Here, it has been argued that, when no relational experience has previously occured, initial levels of trust will be based on a conscious estimation of a trustee's trustworthiness. As relationships develop, interaction becomes the heart of the trust development process and this rational form of trust is extended with, or replaced by, a form of trust that has been labeled as relational trust. If this is so, trust becomes more personalized and less deliberate. The implication is that feelings of

personal attachment and tacit mutual understanding arise and influence the actions taken. If trust is reciprocated, then there is the possibility of an upward spiral of trust. However, the converse may also easily apply. Initial levels of trust may therefore leave strong imprints on the development of relationships in later stages of collaboration. When time pressure limits business partners' ability to develop trust from scratch, they may instead make use of stereotypical impressions of each other. This de-emphasizes the influence of the personal dimension, since trust is initially based on broad categorical social structures and, only later, on action.

Chapter 3

The role of trust in the governance of inter-organizational relationships - theoretical framework

3.1. Introduction

In Chapter 2, insights were given into the most recent understandings of trust. However, in inter-organizational relationships, trust does not operate in isolation. Therefore, in this chapter, we develop a theoretical framework that can be used for analyzing factors that influence trust development. For this, we concentrate on the role of trust in the governance of inter-organizational relationships as discussed in the literature reviewed in Chapter 2. Here, many researchers have focused on the interrelationships between trust and control, connecting both concepts to the levels of risk within, and the actual performance of, inter-organizational relationships. Therefore, in Section 3.2, we first consider the literature on the relationship between trust and the risks that business partners face, both internal and external to their relationship. Section 3.3 comprises a discussion on how trust and control substitute and/or complement each other in counteracting these risks. Here, we pay particular attention to the formal and informal forms of control adopted by the organizations involved. Third, in Section 3.4, we focus on the influence of the performance of the relationship on the levels of trust and the control mechanisms previously adopted. Subsequently, in Section 3.5, we derive a conceptual model, in which we integrate all these factors, to guide our empirical study on processes of inter-organizational trust development within the construction industry. Thus, in this chapter, we address the following research sub-question: *What is the role of trust in the governance of inter-organizational relationships?*

3.2. Inter-organizational trust and risk

Since many authors have argued that trust requires a condition of uncertainty, our focus is first on the interrelationships between trust and risk. Gambetta (1988, p. 218) states that 'uncertainty is related to the limits of our capacity ever to achieve full knowledge of others, their motives and their responses to endogenous as well as exogenous changes'. Consequently, trustors, by definition, face *the risk of trustees not being able or not being willing to perform* as expected, whether or not this is *caused by changes in factors internal or external to their relationship*. In this regard, Das and Teng (2001, p. 254) note that it is crucial to differentiate between actual levels of risk and perceived levels of risk: '[r]isk (or objective risk) is based on consequences or outcomes of alternatives and their probabilities (…). Perceived risk (or subjective risk) is decision makers' estimate of objective risk'. Proceeding from this, many authors have considered trust as a probability. If this is so, Nooteboom (2002, p. 39) argues that a paradox emerges: '[t]he notion of probability implies that there is high trust if the subjective probability of good outcomes is high, and hence perceived risk is low'. This implies that trust will be at its highest when there is no risk left. However, since trust entails the acceptance of risk, we can no longer speak of trust when there is no remaining risk: '[t]here is a paradox (…). Trust entails both risk and its limitation' (Nooteboom, 2002, p.39). Das and Teng (2001) elaborate on this conundrum, by emphasizing that *trust is not a probability but rather a positive expectation* about the behavior of a trustee. As such, 'trust reduces the perceived probability and impact of undesirable outcomes' (p. 254). Accordingly, *trust will lead to a lowered perception of risk, without changing the actual level of risk* within the relationship.

Since trust includes the expectation that things or people will not fail one, this leaves open *a variety of possible causes of failure*. In order to define more precisely the risks that partners face, one has to ask what kind of things can go wrong with regard to a relationship. Nooteboom (2002) emphasizes that, in inter-organizational relationships, business partners face two kinds of uncertainties. On the one hand, they face uncertainties concerning the external conditions that affect the outcomes of actions. On the other, they face

uncertainties over the limits of someone's trustworthiness, both in intentions and in competences. This is not dissimilar to the two types of uncertainty that Ring and Van de Ven (1994) discern in their model of inter-organizational relationship development. They argue that business partners face uncertainties regarding the future states of nature in their relationship, and uncertainties as to whether they are able to rely on trust as a counter to problems of opportunism (see also Das and Teng, 2001). Accordingly, we assume risks that business partners face to be of two primary types: *risks internal and external to a relationship*.

3.2.1. Internal risk

Internal risk can be defined as 'the probability and consequences of not having satisfactory cooperation' (Das and Teng, 1996, 2001). This risk arises from *the potential for opportunistic behavior* on the part of the trustee. In this regard, trustors face the risk of a business partner offering too little in terms of effort and attention. 'He shirks, rides free and fails to admit weakness and to take safety precautions' (Nooteboom, 2002, p. 50). This corresponds with *a lack of dedication*. There is also a risk that a business partner takes too much. This involves 'cheating, stealing, expropriation, extortion, threats and power play' (Nooteboom, 2002, p. 51). It is what Williamson (1975, 1979, 1984 and 1989) has called interest seeking with guile, and it corresponds with *a lack of benevolence*.

3.2.2. External risk

Organizations not only face the potential of opportunistic behavior by business partners, there are *many other factors* that contribute to the possibility and consequences of outcomes of an inter-organizational relationship not being achieved, despite having satisfactory cooperation with business partners. Das and Teng (2001, p. 253): '[t]hese factors include intensified rivalry, new entrants, demand fluctuations, changing government policies, a lack of competence of partner firms and sheer bad luck'. Although these

factors may directly influence the performance of an inter-organizational relationship, they can also indirectly influence the favorable conditions for the trustworthiness of a business partner. Nooteboom (2002, p. 51) states that incidents may arise 'that affect favorable conditions of competence, dedication and benevolence'. Conditions may go beyond someone's competences, and situational temptations of potential losses or golden opportunities may exceed a business partner's commitment to perform (Lindenberg, 2000). As such, the *internal* and *external risks* faced by business partners, *are closely interrelated*.

3.3. Inter-organizational trust and control

Many authors have linked the trust phenomenon with the concept of control in counteracting the risks that business partners face. In this regard, it has been stated that both trust and control reduce the perceived probability and impact of undesirable outcomes (e.g. Das and Teng, 1998, 2001; Möllering, 2005a; Long and Sitkin, 2006). Trust has been defined as a positive expectation of a partner, and so it reduces the perceived level of risk within a relationship without changing the actual level of risk. Control is considered as a more active and interventionist approach, influencing the behavior of a partner such, that undesirable outcomes are less likely to occur. Although both concepts have been prominent in the academic discourse for generations, researchers have only started to explore the similarities and differences between trust and control in the governance of inter-organizational relationships in greater depth in the past few years. This has led to two, contradictory, views about the relationship between the two concepts: the *substitute perspective* and the *complementarity perspective* (e.g. Van de Ven and Ring, 2006; Vlaar et al., 2007; Costa and Bijlsma-Frankema, 2007).

The substitution perspective suggests that trust and control are *inversely related*, implying that *more control will result in less trust*, and vice versa (e.g. Gulati, 1995; Das and Teng, 2001; Inkpen and Currall, 2004). Adherents to this perspective consider trust and control as opposing strategies for counteracting risks internal and external to a

relationship. For instance, economists see control as a basis for trust since control limits the opportunities and incentives to deviate. Business partners will trust each other simply because they have no other option than to behave in a trustworthy manner. Social scientists, on the other hand, often see control in conflict with trust. They see control as a sign of distrust, since it evokes conflict and opportunistic behavior and, as such, hinders the development of trust. Here, it can also be argued that high levels of trust decrease the need for control, since close relationships will reduce the inclination to deviate.

The complementary perspective suggests that trust and control are *mutually reinforcing* in counteracting internal and external risks, implying that *greater control will result in more trust*, and vice versa (e.g. Zaheer and Venkatraman, 1995; Poppo and Zenger, 2002; Luo, 2002). Several studies have found high levels of trust and high levels of control operating together. On this basis, some researchers have argued that control increases the level of trust by providing business partners with objective rules and clear measures on which to base their assessments and evaluations of each other's performance. Others state that trust is a precondition for control, suggesting that, without trust, control mechanisms cannot be established at all. Considering both perspectives, Klein Woolthuis et al. (2005) conclude that there is still a fundamental disagreement with regard to the relationship between trust and control in the governance of inter-organizational relationships.

Some scholars have tried to resolve this rather simplistic discussion as to whether trust and control complement or substitute for each other. By focusing on how business partners arrive at positive expectations of each other, Möllering (2005a, p.284), for instance, states that '*trust and control assume the existence of the other, refer to each other and create each other, but remain irreducible to each other*'. Speaking of trust and control while assuming the existence of both implies that assuming the benevolence of a partner firm also assumes 'the social structure to which such benevolence is recognizable, relevant and thereby shaped in a particular way. An actor who assumes that social structures have a controlling influence on others must also assume that those others will not exploit

malevolently the freedom that inevitably remains' (p. 290). Since trust and control require each other's existence, 'they exist in a reflexive relationship to each other when they form the basis of positive expectations' (p. 291). This suggests that partners will act benevolently depending on how much room for benevolent behavior the social structure of a relationship actually leaves. Conversely, how much room for benevolent behavior the social structure leaves depends on the assumed levels of trust in the actors concerned. Here, it can be argued that trust produces control and that control produces trust. Möllering (2005a, p. 292): '[t]rust gains a control-like quality when actors become embedded in it'. In return, 'control produces trust whenever actors refer to and maintain social structures despite the fact that structures can be contradictory and ambiguous (…), leaving room for benevolent or malevolent agency'. So, an actor may reach positive expectations of others by observing that social structures induce the others to act benevolently in order to conform to those social structures. However, this does not mean that the actors are under the control of the social structure. Therefore, trust cannot be reduced to control. Möllering (2005a, p.294): '[t]he onus of acting benevolently or malevolently remains on the actor and is not removed by the fact that actors refer to social structures in order to find out how they ought to behave and what benevolence and malevolence mean in a particular context'.

Since the trust phenomenon and the concept of control remain irreducible to each other, we speak of trust when an organization rests positive expectations on an assumption of competence, benevolence and dedication on the part of a business partner. We speak of control when an organization rests positive expectations on structural influences on the embedded other (Möllering, 2005a). Here, control is seen as a 'regulatory process by which the elements of a system are made more predictable through the establishment of standards in the pursuit of some desired objective or state' (Leifer and Mills, 1996, p. 117). In the corresponding literature *two basic forms of control* are discerned: *formal and informal* (e.g. Das and Teng, 2001; Bijlsma-Frankema et al., 2005; Nooteboom, 2002).

3.3.1. Formal control

Formal control emphasizes 'the establishment and utilization of formal rules, procedures, and policies to monitor and reward desirable performance' (Das and Teng, 2001, p. 259). Bijlsma-Frankema and Costa (2005) elaborate on this by suggesting that formal control is dependent on three principles: (1) *codification*, (2) *monitoring* and (3) *safeguards*. Firstly, codification means that, to a certain extent, 'programmability of tasks and behavior and measurement of outcomes are needed to specify expectations in formal contracts or rules, which can be used to secure equity' (Bijlsma-Frankema and Costa, 2005, p. 264). The programmability of tasks refers to the degree to which partner firms understand the transformation processes. The measurement of outcomes refers to the degree to which an organization is able to measure the process outputs in a precise and objective manner. Secondly, monitoring is required to determine whether business partners deviate from the agreed contract: '[p]arties must be either in close interaction or have installed intelligent monitoring systems that allow them to monitor from a distance' (p. 264). Das and Teng (2001) suggest that organizations control by either measuring the behavior of their partners or the outcomes of these behaviors. Thirdly, a juridical structure is required that enables the enforcement of a contract or rule, so that deviate behavior can be sanctioned. As such, *formal control contributes to a limitation of opportunities and incentives to deviate* (Nooteboom, 2002).

3.3.2. Informal control

Formal contracts may be difficult to specify because of the intangible nature of resources and outcomes, or because of difficulties with regard to the predictability of partner behavior or relationship outcomes caused by unforeseeable endogenous and exogenous changes (Bijlsma-Frankema and Costa, 2005). Das and Teng (2001) state that, if neither behavior nor outcomes can be specified at the beginning, then formal contracts cannot be exercised in a meaningful way. In line with this, it has been argued that monitoring can also be

difficult, i.e. judging the execution of formal contracts in terms of measuring partner behavior and relationship outcomes. In the event of formal control becoming less effective in governing relationships, Bijlsma-Frankema and Costa (2005) wonder whether, and if so how, *informal control* can be seen as an alternative governance mechanism. In this regard, Das and Teng (2001, p. 259) emphasize the fact that informal control relies above all 'on the establishment of organizational norms, values, culture and the internalization of goals to encourage desirable behavior and outcome'. So, the focus is on *developing shared values, beliefs and goals* among business partners such that appropriate behavior will be reinforced and rewarded. As such, it is intended to reduce goal incongruence and preference divergence among partner firms involved in inter-organizational relationships. Because organizations internalize common goals, 'their commitment and motivation to achieve those goals is expected to be high' (p. 259).

The key difference between formal and informal controls is that, with informal control, neither behavior nor the outcomes of a relationship have to be specified from the beginning: '[c]odification of expectations is not a necessary condition for informal control (…). It requires less codification and allows for more abstraction than formal control' (Bijlsma-Frankema and Costa, 2005, p. 267). Further, it has been stated that with regard to informal control, monitoring is more a case of 'showing interest and concern by closely keeping up to date with the progress the other is making' (Bijlsma-Frankema and Costa, 2005, p. 268), rather than measuring partner behavior or the outcomes of relationship in a somewhat distant manner. As such, monitoring may even enhance the quality of a relationship. Finally, it has been argued that informal control is not based on the explicit threat of legal enforcement, but that it relies on 'the implicit threat of social sanctioning' (p. 268). Social sanctioning is only appropriate and possible if 'reputation mechanisms can support exclusion or other social sanctions such as (…) loss of future relationships' (p. 268). As such, *informal control contributes to a limitation of inclinations to deviate* (Nooteboom, 2002).

3.4. Inter-organizational trust, control and performance

In the literature, a basic level of trust is acknowledged as being able to smooth relationships between business partners (Gulati, 1995; Dirks and Ferrin, 2002) because it helps to generate and maintain interaction and knowledge sharing (Zand, 1972; Janowicz and Noorderhaven, 2006). If not, inter-organizational relationships would be pervaded by uncertainty, causing partner firms to continually question the competences, dedication and benevolence of each other (Das and Teng, 2001; Vlaar et al., 2007). In line with this, a basic level of control is also a precondition for organizations to engage in relationships, since this endows business partners with a degree of stability and guidance. Very low and high levels of trust may be detrimental to the performance of inter-organizational relationships since partner firms may become less willing to take risks, as a consequence of suspicion and fear, or trust mistakenly. Very high and low levels of control can also prohibit beneficial cooperation because organizations may become increasingly locked into formalities, as a consequence of over-regulation, or stuck into chaos (Nooteboom, 2002; Weibel, 2007).

However, *trust and control are not only needed as a basis for a relationship to develop, they are also shaped by it*. When relationships develop, business partners may update their levels of trust and change the forms of control they have previously adopted (Van de Ven and Ring, 2006; Costa and Bijlsma-Frankema, 2007). Such changes are more likely when the performance of a relationship is considered better or worse than expected (March and Olsen, 1975; Long and Sitkin, 2006; Vlaar et al., 2007). Many authors have suggested that inter-organizational relationships are evaluated in terms of both objective and subjective performance effects. That is, business partners will not only assess the performance of their relationship in terms of economic or strategic outcomes, but also in terms of the smoothness of cooperation and satisfaction with interaction processes (Ariño et al., 2001; Ariño, 2003; McEvily and Zaheer, 2006). Below, we consider both the *outcomes achieved in a relationship* - the objective performance effects - as well as the *relational quality that underlies these outcomes* - the subjective performance effects.

3.4.1. Objective performance

In discussing the performance of inter-organizational relationships in terms of objective outcomes, McEvily and Zaheer (2006) state that 'financial outcomes are the most relevant and compelling indicators of inter-organizational relationship performance' (p. 291). Here, we can think of, for instance, return on assets or return on investment (Luo, 2001). Another way of gauging the performance of inter-organizational relationships is completion time, which has been found to be particularly important in relationships that are project-based (Lui and Ngo, 2004). They found that trust closely interacts with control to determine the likelihood of a project completing on schedule. Others use a business partner's assessment of quality and innovation to evaluate the outcomes achieved in a relationship (Paul and McDaniel, 2004; Johnston et al., 2004). Thus, in evaluating the objective performance of an inter-organizational relationship, the focus is on '*the degree of accomplishment of the partners' goals*' (Ariño, 2003, p. 23).

3.4.2. Subjective performance

The most commonly used metric to asses the subjective effect on performance of inter-organizational relationships is satisfaction with the relationship. Here, we can think of, for instance, mutual adjustment and joint problem solving (Six, 2004; Johnston et al., 2004; McEvily and Zaheer, 2006). Other researchers focus on factors like openness (Zand, 1972) and inter-organizational learning (McAllister, 1995; Janowicz and Noorderhaven, 2006), and the quality of a relationship has also been evaluated in terms of the willingness of business partners to continue doing businesses together in the future (Pavlou, 2002). Such a long-term orientation has been found to enhance the performance of, and it represents a commitment to, the relationship (Larson, 1992). So, in assessing the subjective performance of inter-organizational relationships, the focus is on '*the extent to which the pattern of interactions is acceptable to (…) partners*' (Ariño, 2003, p.23).

3.5. Towards a theoretical framework

As we have argued, inter-organizational relationships develop, so organizations may update their level of trust, and bring about changes to the forms of control they have previously adopted, based on the actual performance of their relationship (Ariño, 2003; McEvily and Zaheer, 2006; Costa and Bijlsma-Frankema, 2007). Consequently, the perceptions of risk, internally and externally to a relationship, are also subjected to change (Das and Teng, 2001; Nooteboom, 2002; Bijlsma-Frankema and Costa, 2005). Since partner firms are inclined to be more open to expectancy confirmation than to expectancy denial, initial characteristics may have disproportionate effects on the subsequent development of inter-organizational relationships (Weick, 1995; Vlaar et al., 2007). For instance, low levels of trust in the early stages of a relationship lead to high needs for control, which limit the opportunities and incentives for a business partner to deviate, and hence lower the perceived level of risk. However, the resulting combination of trust and control can have a negative impact on the performance of a relationship, since the partner firms may become increasingly locked into formalities. If the performance of a relationship is subsequently considered to be weak, the organizations involved may come to perceive their partner firms as less trustworthy than they originally thought, leading to an increased perception of risk. This may result in an increase in control which, in combination with the perceived weak performance, further diminishes the level of trust initially present in the relationship. It may also work the other way around, so that the behavior of a partner firm is interpreted in such a way that it improves the level of trust present in the early stages of a relationship. Therefore, the initial conditions within an inter-organizational relationship can easily trigger virtuous cycles of trust or vicious cycles of distrust. In Figure 3.1, we represent these dynamic interrelationships between trust, control, risk and performance.

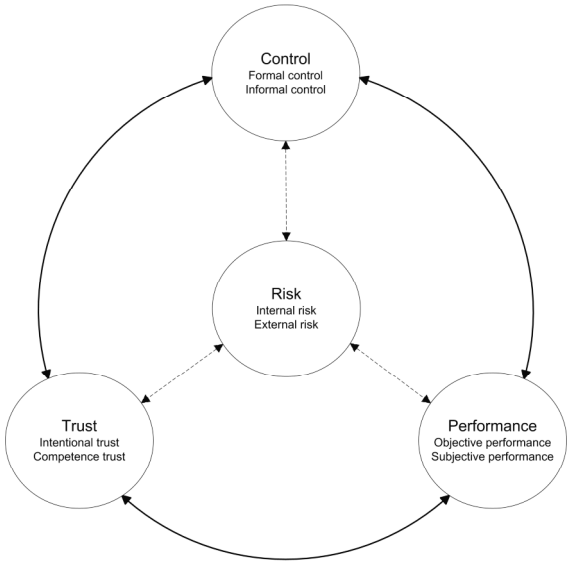

Figure 3.1 Dynamic representation of the interrelationships between trust, control, risk and performance.

3.6. Concluding remarks

This chapter has discussed what the role of trust is in the governance of inter-organizational relationships. In answering this question, we conclude that trust closely interrelates with control in counteracting the risks that business partners face both internally and externally to their relationship. The internal risk corresponds with the potential for opportunistic behavior by a partner firm, whereas the external risks correspond with factors that influence the outcomes of a relationship, despite the satisfactory cooperation with a business partner. Since trust is defined as a positive expectation about the behavior of a partner firm, it reduces the perceived level of risk without doing anything about the actual level of risk. Control can be considered as a more interventionist approach, influencing the behavior of a business partner in such a way that undesirable relationship outcomes are less likely to occur. Here, organizations can make use of formal forms of control, limiting the opportunities and incentives for a partner firm to deviate, as well as informal forms of

control, limiting the inclinations of a business partner to deviate from what agreed upon. The first category refers to the codification and monitoring of tasks and outcomes, whereas the latter refers to the intended development of shared norms and values. In this regard, it has been argued that trust and control are inversely related (the substitutive perspective), implying that more control will result in less trust (and vice versa). It has conversely been stated that trust and control are mutually reinforcing (the complementary perspective), implying that more control will result in greater trust (and vice versa). In an attempt to accommodate these opposing views, it has been suggested that trust and control exist in a 'reflexive relationship' when forming the basis for a positive expectation to a business partner: '[t]rust and control assume the existence of the other, refer to each other and create each other, but remain irreducible to each other' (Möllering, 2005a, p. 284). In this regard, certain levels of both trust and control are necessary to endow business partners with a degree of certainty, since relationships would otherwise find the level of uncertainty pervasive. However, very low or high levels of trust and control can be detrimental to the performance of a relationship since business partners may, for instance, stuck into fear or sink into overregulation. As a relationship develops, business partners may update their levels of trust and change the forms of control they have previously adopted. This is most likely when the performance of the relationship - in terms of both the relational quality experienced and the outcomes achieved - is considered better or worse than expected. In Figure 3.1, we present the factors of trust, control, risk and performance as they are related to each other. The theoretical framework shows that the initial levels of trust and distrust can easily trigger vicious or virtuous cycles to develop.

In Chapter 2, we presented our literature review about the definitions, subjects, objects, aspects and sources of inter-organizational trust. In Chapter 3 we derived a conceptual model in which we related the trust phenomenon to other governance-related factors. Together, both chapters form the theoretical part of this thesis. Next, in Chapter 4, the focus will be on our concise survey on the levels of trust in construction projects with respect to certain specific situational variables. Chapter 5 presents our extensive case study on processes of inter-organizational trust development in a partnering project. Together, these two chapters form the empirical part of this thesis.

Chapter 4

Levels of inter-organizational trust in the construction industry - survey

4.1. Introduction

So far, little research has explicitly related the general literature on inter-organizational trust to the project-based context of the construction industry. Consequently, empirical data regarding the levels of trust actually present in this industry are missing. In this chapter, by making use of a concise survey, we explore how the levels of trust between principal and contractor organizations in a large-scale sample of construction projects vary according to certain specific situational variables. Section 4.2 explains the methods used for data collection and data analysis. We also operationalise the concepts studied. In Section 4.3, our focus is on the influence of the history of working together, and the prospects of working together again, on the levels of trust in construction projects. Section 4.4 consists of an analysis of how trust relates to the tendering procedure used and the form of contract adopted. In Section 4.5, we discuss the influence of the problems that business partners face in construction projects, and the measures they take to solve these problems. Finally, in Section 4.6, we draw conclusions from this study. Thus, in this chapter, we address the following research sub-question: *What are the levels of inter-organizational trust in construction projects, and how are these influenced by certain specific situational variables?*

4.2. Data and method

4.2.1. Survey data collection

We designed a questionnaire to explore how trust in the construction industry varies according to several specific characteristics. Data were gathered using a large-scale sample of both principal organizations and contractor organizations. A database of construction projects put out to tender in 2004 was acquired from *Het Economisch Instituut voor de Bouwnijverheid* - an organization studying socioeconomic characteristics of the Dutch construction industry. The database included addresses of both the principal organizations and the contractor organizations involved. In the late spring of 2005, a package containing the questionnaire, a covering letter and a prepaid return envelope was sent to a sample of 739 principal organizations and 745 contractor organizations. A replacement survey was sent to the non-respondents of both groups four weeks after the first mailing. The principal organizations returned 135 usable, completed questionnaires, constituting a 18.3% response rate. The contractor organizations returned 202 usable questionnaires, a 27.1% response rate. Overall, the response rate of both samples was 22.7%, which was deemed to be an acceptable level. The sample of principals included both private and public organizations, and the contractors included firms working on both buildings and on civil works.

The questionnaire itself was addressed to the boards of the principal organizations and contractor organizations. In the covering letter, a concise description and the precise location of a specific project was given. The board was asked to ensure that the project manager involved was given the opportunity to complete the questionnaire. The letter also provided an email address and telephone number for possible inquiries. The project managers of the principal organizations were asked to respond to questions about their trust in the contractor organization involved - and vice versa. Further, we included questions regarding some specific situational variables. We selected the project managers as the appropriate respondents since they fill the boundary-spanning position that connects the organizations they work for with their project partner firms (Ring and

Van de Ven, 1994; Nooteboom, 2002; Janowicz and Noorderhaven, 2006). As an incentive to complete the survey, we offered respondents a summary report with our main statistical findings. The questionnaire was checked by several scholars, some being experienced in the survey methodology and some being knowledgeable with respect to the trust debate or with features of the construction industry. Subsequently, we asked *Het Economisch Instituut voor de Bouwnijverheid* to test the questionnaire to assure the relevance and understandability of the questions as well as the appropriateness of the response scales.

4.2.2. Survey data analysis

After the return of the completed questionnaires, we created a coding system where every question was allocated a numerical value for each answer category. Subsequently, we analyzed the dataset using SPSS 14.0 for Windows, exploring the levels of trust with respect to certain specific situational variables. In this, we made use of several analysis methods. To examine whether the means of two different groups for a specific variable were equal, *t-test statistics* were used. Here, the null hypothesis is that the means are equal, whereas the alternative hypothesis is that the means significantly differ. We used t-tests with a 5% level of significance. To test whether the means of three (or more) groups were equal, *analysis of variance statistics* were used. Here, again, the null hypothesis is that the means of the groups are equal, and the alternative hypothesis is that the means significantly differ from each other. Since we also want to know which groups differ from each other, *multiple comparison test statistics*, again with a 5% level of significance, were used. Both, t-tests and the analysis of variance statistics require data derived from a random sample with a normally distributed population.

To examine whether two variables vary together, *correlation analysis* can be used. When using sample data, the strength of the relationship is expressed by the sample correlation coefficient r. Three values of r serve as benchmarks for the interpretation of a correlation coefficient. If the two variables are linearly related, then their relationship can be either positive or negative, with a perfect

relationship signified by 1 or -1. If the two variables are not at all linearly related, the value of the sample correlation coefficient will be zero. So, values close to zero indicate a weak relationship, and values close to -1 or +1 indicate a strong, negative or positive, correlation. The squared value of r (r^2) represents the goodness of fit statistic, i.e. the r^2 value reflects the extent to which the variance of the dependent variable is explained by the independent variable. To test whether a correlation between the two variables is significant, *t-test statistics* can be used. Here, the null hypothesis is that there is no relationship between the variables. The alternative hypothesis will be that the relationship is significantly larger or smaller than zero. Here, in testing the hypotheses, a 5% confidence interval is reasonable. That is, there is a 5% chance of rejecting the null hypothesis even when there is no relationship between the variables, i.e. when the null hypothesis is true.

To examine whether a relationship between a dependent variable and two or more independent variables is linear, *multiple regression analysis* is used. The regression variate is a way of determining the relative importance of each independent variable in predicting the dependent measure. Through it, one can also assess the nature of the relationship between each independent variable and the dependent variable, taking into account the effect of all the other independent variables. The coefficient of determination (r^2) reflects the extent to which the variance of the dependent variable is explained by the independent variables. The beta coefficient is the standardized regression coefficient, which allows one to assess the relative effect of each independent variable on the dependent variable. In interpreting the beta coefficients, we considered the t-test results for all the independent variables with at least a 5% level of significance. Here, the null hypothesis is that the regression coefficient is equal to zero, while the alternative hypothesis is that the regression coefficient is not equal to zero. We entered the independent variables into the regression model, using simultaneously entry.

4.2.3. Survey operationalisation

As we saw in Chapter 2, trust is a very complex and slippery phenomenon. Hence, we would argue that it is impossible to measure levels of trust within construction projects, our dependent variable, through a survey such, that the multidimensionality of the trust phenomenon is fully captured. Nevertheless, in order to capture some idea of the levels of trust within construction projects, we asked the project managers of the principal organizations to respond to ten propositions, by giving them a score between 1 and 10, that generally reflected an atmosphere of trust, or distrust, in the relationship with the contractor (see Table 4.1). The same propositions were also put to the project managers of the contractor organizations. A trusting atmosphere is reflected by an emphasis on those characteristics that are seen as positively contributing to the relationship such as concern, honesty, understanding, habituation, disclosure of information, and sharing of feelings and criticism. The propositions were derived from an earlier questionnaire on atmospheres of trust within inter-organizational relationships (Klein Woolthuis, 1999). The Cronbach Alpha scores for the propositions on both the principal and contractor organization sides turned out to be high (0.933 and 0.945 respectively).

PR 1	During the project, the contractor/principal treated problems constructively	PR 6	We provided each other with information relevant to the project
PR 2	I do not have the feeling of being misled by the contractor/ principal	PR 7	In the relationship with the contractor/principal I dare to share information
PR 3	The contractor /principal and I understood each other well	PR 8	Criticism could be expressed openly if this contributed to the completion of the project
PR 4	During the project, we have become accustomed to each others working methods	PR 9	I'm loyal to the contractor/principal and the contractor/principal is loyal to me
PR 5	We talked openly with each other about our interests related to this project	PR 10	The relationship with the contractor/principal is characterized by openness

Table 4.1 Propositions put to the project managers of principal and contractor organizations.

Further, since we wanted to explore how the level of trust in construction projects varies in relation to certain specific situational variables, we also included several independent variables in our questionnaire. First, our focus was on the specific project-based context of the construction industry. In this regard, first and foremost, we were interested to see how the levels of trust in construction projects varied according to the history of working together, and the prospects of working together again. This was, because it has been suggested that both past and future cooperations leave strong imprints on the level of trust in inter-organizational relationships (Larson, 1992; Klein Woolthuis, 1999). The questions used were derived from an earlier questionnaire on the influence of project-exceeding cooperation on the performance of inter-organizational relationships in construction (Welling, 2006). Further, since it has been stated that trust in construction is strongly influenced by procurement routes taken, and by the contract form used (Latham, 1994; Egan, 1998; Byggkommissionen, 2002; PISB, 2003), we were also interested to see how the level of trust varies according to the way the project is put out to tender and to the type of arrangement adopted by the organizations involved. In this regard, we included typologies used by *Het Economisch Instituut voor de Bouwnijverheid* (EIB, 2006). Finally, since it has also been argued that trust becomes an issue especially when things go wrong (Nooteboom, 2002), our focus has extended to the influence of problems that arise during construction. Here, we again made use of the questionnaire by Welling (2006). In this earlier survey, the list of problems put to the project managers was formulated based on 20 in-depth interviews with project managers and an extensive literature review on problems that frequently arise in construction projects. The same approach was used for the measures that organizations can take to solve problems. Below, we discuss to what extent trust in the construction industry varies according to the identified independent variables.

4.3. Project-exceeding cooperation

In this section, we discuss the influence of the history of working together, and the prospects of working together again, on the levels of trust within construction projects. In our questionnaire, we first asked the project managers of the principal organizations whether their organization, and they themselves, had worked together in the past with the contractor, and with its project manager. Similar questions were put to the project managers of the contractor organizations. Further, we asked the project managers of the principal organizations whether their organization, and they themselves, are expected to work together again with the organization of the contractor, and with its project manager, or whether they did not know. These questions were also posed to the project managers of contractor organizations.

4.3.1. Principal organizations

In Table 4.2, we present the answers to the questions about the working history, supplied by project managers of principals. The table shows whether it makes a difference to the level of trust within a construction project if the organization of the principal, or its project manager, has worked together in the past with the organization of the contractor, or its project manager. Our data demonstrate that almost 70% of the principal organizations did have a working history with the organization of the contractor, and more than 40% had cooperated previously with the specific project manager. Over 50% of the project managers of the principal organizations had themselves worked before with the contractor organization, whereas more than 30% cooperated before with the project manager of the contractor organization. Our data show that, for the level of trust within construction projects, it makes a significant difference if the project managers have previously worked with the contractor organization, and with its project manager. So, from the principal organization's perspective, it appears that the past experiences of their project managers are especially important with regard to the level of trust present within a construction project.

	Working history	Mean Trust	SD	Significance
Organization principal - Organization contractor	Yes (n=88) No (n=39)	7.06 7.09	1.57 1.22	0.454
Organization principal - Project manager contractor	Yes (n=55) No (n=71)	6.99 7.16	1.76 1.25	0.271
Project manager principal - Organization contractor	Yes (n=67) No (n=60)	7.42 6.74	1.44 1.46	0.005**
Project manager principal - Project manager contractor	Yes (n=42) No (n=80)	7.48 6.93	1.65 1.40	0.034**

Table 4.2 The influence of a history of working together on the levels of trust within construction projects - the principal organization perspective.

In Table 4.3, we summarize the answers to the questions about the prospects of working together again, supplied by the project managers of principals. The table shows when it makes a difference to the level of trust within a construction project if the organization of the principal, or its project manager, expects to work together again with the organization of the contractor, or with its project manager. Our data show that almost 70% of the principal organizations expect to work together again with the organization of the contractor, and that 50% of the project managers of the contractor organizations is expected to be involved in these future cooperations. About 65% of the project managers of principal organizations expect to personally work together again with the contractor organization, and almost 50% of the project managers of contractor organizations is expected to be similarly involved in future cooperations. Our data show that it makes a significant difference for the level of trust within construction projects if the project managers of the principal organizations expect to work together again with the contractor organization, and with its project manager. Further, we see that it makes a significant difference if the organization of the principal expects to work together again with the contractor. So, from the principal organization's perspective, the future prospects of the project managers themselves, and an expected future cooperation between the principal and contractor organizations, appears to be of importance with regard to the level of trust present within an existing construction project.

	Future prospects	Mean trust	SD	Significance
Organization principal - Organization contractor	Yes (n=91) No (n=1) Unknown (n=39)	7.34 720 6.61	1.45 - 1.46	0.037**
Organization principal - Project manager contractor	Yes (n=61) No (n=4) Unknown (n=61)	7.42 6.78 6.82	1.56 1.60 1.39	0.078
Project manager principal - Organization contractor	Yes (n=83) No (n=7) Unknown (n=41)	7.40 7.51 6.50	1.48 0.84 1.39	0.004**
Project manager principal - Project manager contractor	Yes (n=59) No (n=9) Unknown (n=59)	7.46 6.99 6.75	1.53 1.21 1.42	0.031**

Table 4.3 The influence of the prospects of working together again on the levels of trust in construction projects - the principal organization perspective.

4.3.2. Contractor organizations

The answers to the questions about their working history, put to the project managers of contractor organizations, are summarized in Table 4.4. Our data show that about 70% of the contractor organizations have worked together in the past with the organization of the principal, and more than 50% have cooperated before with the specific project manager of the principal organization. About 50% of the project managers of the contractor organizations have themselves worked in the past with the organization of the principal, and almost 40% have cooperated before with the project manager of the principal organization. Our data show that, in terms of the levels of trust within construction projects, it not only makes a significant difference if the project managers themselves have worked in the past with the organization of the principal, and especially with its project manager, it also makes a difference if the organization of the contractor has cooperated before with the project manager of the principal organization. So, from the contractor organization's perspective, the working history of the project managers themselves, and the previous involvement of the project manager of the principal organization, appears to be important with regard to the level of trust present within a construction project.

	Working history	Mean trust	SD	Significance
Organization contractor - Organization principal	Yes (n=134) No (n=56)	7.30 7.03	1.63 1.83	0.168
Organization contractor - Project manager principal	Yes (n=96) No (n=92)	7.55 6.85	1.50 1.80	0.002**
Project manager contractor - Organization principal	Yes (n=100) No (n=93)	7.51 6.91	1.63 1.68	0.007**
Project manager contractor - Project manager principal	Yes (n=73) No (n=118)	7.78 6.86	1.46 1.71	0.000**

Table 4.4 The influence of the history of working together on the levels of trust within construction projects - the contractor organization perspective.

The answers to the questions about the prospects of working together again, put to the project managers of contractor organizations are summarized in Table 4.5. Our data show that 90% of contractor organizations expect to work together again with the organization of the principal, and that more than 70% of the project managers of the principal organizations are expected to be involved in these future cooperations. About 85% of the project managers from contractor organizations expect to work together again with the principal organization, whereas almost 70% of the project managers of principal organizations is expected to be involved in these future cooperations. The data show that it makes a significant difference to the level of trust within construction projects if the organization of the contractor expects to work together again with the organization of the principal, and with its project manager. Further, we have seen that it makes a significant difference if the project manager of the contractor organization expects to be involved in future cooperation with the principal organization, and with its project manager. So, from the contractor organization's perspective, the future prospects, both on the organizational and project manager levels, are important in determining the level of trust actually present within a construction project.

	Future prospects	Mean trust	SD	Significance
Organization contractor - Organization principal	Yes (n=171) No (n=0) Unknown (n=19)	7.35 - 7.23	1.67 - 1.38	0.003**
Organization contractor - Project manager principal	Yes (n=138) No (n=4) Unknown (n=47)	7.54 6.10 6.36	1.53 3.52 1.57	0.000**
Project manager contractor - Organization principal	Yes (n=160) No (n=3) Unknown (n=26)	7.41 6.87 6.08	1.63 0.55 1.64	0.001**
Project manager contractor - Project manager principal	Yes (n=131) No (n=9) Unknown (n=48)	7.62 6.61 6.17	1.45 2.25 1.67	0.000**

Table 4.5 The influence of the prospects of working together again on the levels of trust in construction projects - the contractor organization perspective.

4.4. Tender procedure and contract form

In this section, we will discuss the influence of the tendering procedure used, and the contract form adopted, on the levels of trust within construction projects. In our questionnaire, we first asked the project managers of principal organizations if the project they were working on was put out to the tender by invited tendering, open competitive tendering without short listing, open competitive tendering with short listing, or negotiated tendering. The same question was put to the project managers of contractor organizations. The project managers of the principal organizations were also asked whether the project they were working on was being built using a traditional form of contract, a turnkey type of arrangement, a public-private partnership, a construction team form of contract, or a design-build type of arrangement. The same question was put to the project managers of the contractor organizations.

4.4.1. Principal organizations

In Table 4.6, we present a summary of the answers to the question about the tender procedure used, given by the project managers of principal organizations. The data show that more than 85% of the principal organizations had put the project out to tender by directly inviting one of more contractor organizations to bid. About 15% of the projects were put out to tender using a public procurement route, sometimes with a shortlist. However, our data show that, in terms of the level of trust within a construction project, for the principal organizations the route chosen does not make any significant difference.

		Mean trust	SD	Significance
Invited tendering	(n = 54)	7.06	1.68	0.892
Open competitive tendering, without shortlisting	(n=7)	6.99	1.11	
Open competitive tendering, with shortlisting	(n=12)	7.01	1.03	
Negotiated tendering	(n=61)	7.25	1.40	

Table 4.6 The influence of the tendering procedure on the level of trust in construction projects - the principal organization perspective.

In Table 4.7, we summarize the answers to the question about the contract form adopted, given by the project managers of principals organizations. The data show that almost 50% of the projects are built using a traditional form of contract. About 40% are realized by a construction team, and the project partners agreed upon a design-build type of arrangement in 5% of cases. However, our data again show that, in terms of the level of trust within a construction project, for the principal organizations this does not make any difference.

		Mean Trust	SD	Significance
Traditional	(n=66)	7.06	1.41	0.233
Turn-key	(n=4)	5.75	2.29	
PPP	(n=1)	6.80	-	
Construction team	(n=52)	7.29	1.50	
Design-build	(n=7)	7.99	1.17	
Other	(n=3)	6.80	1.10	

Table 4.7 The influence of the contract form on the level of trust in construction projects - the principal organization perspective.

4.4.2. Contractor organizations

The answers to the question about the tendering procedure, put to the project managers of contractor organizations are summarized in Table 4.8. The data show that more than 75% of the principal organizations has put the project out to tender by directly inviting one of more contractor organizations to bid. About 25% of the projects were put out to tender using a public procurement route, with or without a shortlist. Our data show that, in terms of the level of trust within a construction project, this makes a significant difference to the contractor organization.

		Mean trust	SD	Significance
Invited tendering	(n=68)	7.66	1.48	0.001**
Open competitive tendering, without short listing	(n=21)	6.86	1.62	
Open competitive tendering, with short listing	(n=25)	6.14	1.32	
Negotiated tendering	(n=81)	7.24	1.79	

Table 4.8 The influence of the tendering procedure on the level of trust in construction projects - the contractor organization perspective.

The answers to the question about the contract form, from the project managers of contractor organizations are summarized in Table 4.9. The data show that 60% of the projects were built using a traditional form of contract. More than 30% were realized by a construction team, and the project partners had agreed upon a

turnkey or design-build type of arrangement in 7.5% of the cases. Our data show that, with regard to the level of trust within a construction project, this makes a significant difference for the contractor organizations. For these organizations, non-traditional contracts are associated with higher levels of trust.

		Mean trust	SD	Significance
Traditional	(n=117)	6.91	1.71	0.016**
Turn-key	(n=8)	8.43	1.20	
PPP	(n=0)	-	-	
Construction team	(n=63)	7.55	1.54	
Design-build	(n=6)	7.42	1.36	
Other	(n=1)	9.00	-	

Table 4.9 The influence of the contract form on the level of trust in construction projects - the contractor organization perspective.

4.5. Problems and measures taken

In this section, we discuss the influence of the problems faced by principal and contractor organizations in a project, and of the measures they take to solve these problems, on the level of trust within a construction project. In our questionnaire, we first asked both sets of project managers to indicate which problems appeared as the project progressed. Second, we asked the project managers to indicate what measures they took to resolve the problems.

4.5.1. Principal organizations

In Table 4.10, the answers to the questions about the influence of problems on the levels of trust within construction projects, provided by the project managers of principal organizations are presented. The coefficient of determination (r^2) reflects the extent to which the variance in the level of trust is explained by the problems that project partners face. The data show that almost 30% of the variance is explained by the problems that appear. Using simultaneously entry (i.e. all the problems discerned are entered into

the regression model at the same time), we see that, from a principal organization perspective, the problems regarding less or extra work, plus problems regarding the handling of complaints, are a significant influence on the level of trust within construction projects.

	R Square	Beta	Significance
Problems regarding Incomplete offer	0.283	-0.193	0.081
Problems regarding general conditions		0.094	0.410
Problems regarding start of activities		0.016	0.881
Problems regarding Completion date		-0.102	0.373
Problems regarding people employed		0.130	0.255
Problems regarding subcontractors		-0.030	0.776
Problems regarding extra work/ less work		-0.233	0.043**
Problems regarding working conditions		0.207	0.095
Problems regarding equipment		-0.109	0.317
Problems regarding supply of information		-0.040	0.717
Problems regarding exactness of work		0.135	0.334
Problems regarding handling of complaints		-0.519	0.000**
Problems regarding guarantees		0.072	0.583
Problems regarding payments		0.176	0.118

Table 4.10 The influence of problems on the level of trust in construction projects - the principal organization perspective.

Below, in Table 4.11, the answers to the questions concerning the measures taken to resolve problems influenced the levels of trust within construction projects, given by the project managers of principal organizations are summarized. The data show that only consultation and negotiation processes had a significant influence on the levels of trust within construction projects, and that this effect is negative.

	R Square	Beta	Significance
No measures	0.155	-0.54	0.547
Consultation		-0.267	0.005**
Negotiation		-0.183	0.043**
Higher management level		-0.121	0.153
Time restrictions		-0.066	0.455
Payment delay		0.73	0.395
Change project team		-0.087	0.306

Table 4.11 The influence of the measures taken on the level of trust in construction projects - the principal organization perspective.

4.5.2. Contractor organizations

In Table 4.12, the answers to the questions about the influence of problems on the levels of trust within construction projects, supplied by the project managers of contractor organizations are summarized. The coefficient of determination (r^2) reflects the extent to which the variance of the level of trust is explained by the problems faced by the project partners. The data show that almost 40% of the variance is explained by problems that were apparent. Using simultaneous entry (i.e. all the problems discerned are entered into the regression model at the same time), we see that, from a contractor organization perspective, problems regarding the completion date, the people employed, less/extra work, the supply of information and the terms of payment are all significant influences on the levels of trust within construction projects.

	R Square	Beta	Significance
Problems regarding incompleteness offer	0.393	-0.020	0.785
Problems regarding general conditions		-0.107	0.155
Problems regarding start of activities		-0.036	0.648
Problems regarding completion date		-0.170	0.038**
Problems regarding people employed		0.174	0.036**
Problems regarding subcontractors		-0.105	0.224
Problems regarding extra work/ less work		-0.235	0.005**
Problems regarding working conditions		0.152	0.099
Problems regarding equipment		-0.014	0.871
Problems regarding supply of information		-0.168	0.032**
Problems regarding exactness of work		-0.108	0.255
Problems regarding handling of complaints		-0.57	0.539
Problems regarding guarantees		-0.007	0.936
Problems regarding payments		-0.174	0.034**

Table 4.12 The influence of problems on the level of trust in construction projects - the contractor organization perspective.

Below, in Table 4.13, the answers to the questions about the measures taken on the level of trust within construction projects, as provided by the project managers of the principal organizations are presented. The data show that involving higher management levels has a significant influence on the level of trust within construction projects, and that this effect is negative.

	R Square	Beta	Significance
No measures	0.136	0.090	0.232
Consultation		-0.127	0.095
Negotiation		-0.029	0.684
Higher management level		-0.206	0.004**
Time restrictions		-0.103	0.149
Legal steps		-0.096	0.164
Change project team		0.084	0.238

Table 4.13 The influence of the measures taken on the level of trust in construction projects - the principal organization perspective.

4.6. Concluding remarks

In this chapter, the results of our concise quantitative study into how situational factors influence the level of trust in construction projects are discussed. The data show that, within the construction industry, perceptions of project-exceeding cooperation between principals and contractors, not only on the organizational level but also on the project manager level, strongly influence trust. In terms of the working history, it appears that the previous personal involvement of project managers has a significant influence on the level of trust within construction projects. Turning to the prospects of working together again, it appears that an expected future cooperation between organizations has a significant influence on the level of trust in a construction project. Further, we have seen that, from the principal organization's perspective, the tender procedure used and the contract form adopted do not have a significant influence on the level of trust in construction projects. This is not the case for the contractor organizations: for them, direct invitations and non-traditional contracts are associated with higher levels of trust. Finally, our data show that, from the principal organization's perspective, problems regarding extra or less work or the handling of complaints have a significant influence on the level of trust in construction projects. The contractor organizations indicated that, rather than the handling of complaints, it was problems related to the completion date of the project, the people employed, the supply of information and the payment terms that influenced the level of trust within a construction project.

Chapter 5

Processes of inter-organizational trust development in a partnering project - case study

5.1. Introduction

In this chapter, our focus is on the factors involved in the development of trust between business partners in a partnering project. Although several studies have shown that this type of projects can be successful in establishing and maintaining cooperative relationships in the construction industry, other researchers have stressed that not all these projects do well. Therefore, we have conducted a single, longitudinal case study in order to examine how and why inter-organizational trust in a partnering project develops over time. For this, we selected a case that offered exceptional opportunities for studying the dynamics of trust: a project alliance. Although project alliances are rare in construction, they are especially aimed at preventing and overcoming the deteriorating patterns of behavior that organizations face in many traditional and design-build projects. Section 5.2 explains the motivation for conducting this case study. Further, we present the case study design as well as the method used for data collection. In Section 5.3, we describe the project. Section 5.4 is an analysis of the factors involved in the development of trust between project partners involved in this project alliance. For this, we apply the theoretical framework developed in the first two phases of this study, i.e. we relate the development of trust to the risk perception of business partners, to the control mechanisms they use and to the performance of their relationship. Finally, in Section 5.5, we draw the conclusions from the case study. Thus, in this chapter, we address the following research sub-question: *How does inter-organizational trust develop over time in a partnering project?*

5.2. Data and method

5.2.1. Case study motivation

To date, research has mainly theoretically discussed rather than empirically explored those factors which are involved in developing trust between business partners. Therefore, many scholars have advocated using longitudinal process studies to uncover the processes of inter-organizational trust development. For instance, Van de Ven and Ring (2006, p. 154) state that 'we have very little evidence about the dynamics of trust. Longitudinal research is required to observe how and why processes of trust develop over time. Scholars must begin to undertake longitudinal process studies if we are to provide managers with evidence-based models and principles for managing inter-organizational relationships to achieve business (…) strategies'. Since studies based on quantitative data have revealed that contextual factors may explain a significant share of the variance in the interrelationships between trust and other governance-related factors such as risk, control and performance so far found, Bijlsma-Frankema and Costa (2005) argue that the context in which relationships are embedded should explicitly be taken into account when the development of inter-organizational trust is the object of a study. As an example, Meyerson et al. (1996) suggest that the processes of developing inter-organizational trust in project-based industries differ from conventional forms of trust development because 'normal sources of trust' are not obvious in such temporary systems.

Since we are interested in how and why trust between organizations involved in a partnering project develops over time, a case study approach seemed to be the most appropriate research strategy for answering these questions. In Chapter 2, we argued that trust is a state of mind, and not a behavior, although it may lead to trusting behavior. Therefore, in studying the dynamics of inter-organizational trust, we are especially interested in the subjective perceptions of people. After all, these perceptions are crucial in understanding *why* business partners trust each other and *how* trust develops over time as objective factors and circumstances influence trust development only through the subjective perceptions of trustors

and trustees. Swanson and Holton (2005) argue that case studies are especially useful when researchers are interested in an in-depth understanding of the process characteristics of a certain phenomenon, as is the case when the development of inter-organizational trust is the object of study. Since a case study enables one to conduct in-depth interviews with all the relevant informants, 'it allows investigators to retain holistic and meaningful characteristics of real-life events' (Yin, 2003, p.2). It is a desirable strategy for studying a 'contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident' (p. 13). Therefore, conducting a case study for exploring how and why trust between organizations involved in a partnering project develops over time provide us with a rich, contextualized understanding of this phenomenon (Miles and Huberman, 1994; Yin, 2003; Swanson and Holton, 2005).

5.2.2. Case study selection

In this section, we explain why we selected a project alliance in order to explore the dynamics of inter-organizational trust. In many countries, relationships between principal and contractor organizations in traditional and design-build forms of contract easily deteriorate, and partnering types of arrangements are increasingly being advocated (Latham, 1994; Egan, 1998; Byggkommissionen, 2002; PSIB, 2003). This is because several studies have shown that these forms of contract can be successful in creating more cooperative, trusting relationships, especially in the case of high risk, complex construction projects (Larson, 1995; Bennet and Jayes, 1995, 1998). However, other researchers have emphasized the fact that not all partnering projects do well and that there are no quick fixes that guarantee success (Bresnen and Marshall, 2000a, 2000b, 2000c). The partnering literature even goes as far as to question whether cooperative relationships can be intentionally shaped over a single project, or whether establishing and maintaining cooperative, trusting relationships between project participants requires a process of cultural change that can only develop over a longer period of time (Bresnen,

2007). Project alliances are especially intended to overcome the deteriorating patterns of behavior faced by principal and contractor organizations in many traditional and design-build types of arrangement. In a project alliance, the relationship between the project participants is expected to be smoothed by the creation of a common interest, so that they are encouraged to cooperate constructively - especially when risks become manifest and problems arise - instead of opposing each other. Since project alliances are rare in the construction industry, the question arises as to what resources project partners should invest for cooperation to arise and persist in a context where, for organizations, relying on trust is not the normal route.

In 2006 Prorail, the organization responsible for exploiting and maintaining the Dutch railway network, decided to use a project alliance for a € 40 million rail construction project within the municipality of Houten, close to the city of Utrecht. Prorail had adopted the project alliance contract form once before in realizing a relative large, complex rail construction project: from 2002 until 2006, a € 135 million sub-project of *The Betuwe Line* - a freight rail link between Rotterdam and Germany - was built using this contract form (Prorail, 2005). After completing this earlier project, Prorail decided to experiment further with project alliances since it was unclear whether this contract form was suitable for relatively small, complex rail construction projects. The project in Houten is the first project in which Prorail is putting this question to the test. To ensure that any important lessons learnt do not vaporize, Prorail asked the *National Rethinking Construction Initiative PSIBouw*[4] to monitor the cooperation processes between the business partners involved in the alliance over the duration of the project. PSIBouw had been established after a national collusion scandal in the construction industry - in the Netherlands better-known as *de Bouwfraude* - came to light in 2001. Within PSIBouw, all the well-known principals, consultant firms, and construction firms as well as several universities and some commercial research institutes, cooperate in stimulating innovativeness in the construction sector. Here, the focus is not so much on realizing

[4] PSIBouw stands for Process (Proces) and System (Systeem) Innovation (Innovatie) in the Construction Industry (Bouw).

product innovations but on initiating changes on process and system levels (PSIB, 2003). In this regard, the organization strongly advocates more-collaborative procurement routes. PSIBouw decided to allocate the question posed by Prorail to the universities involved in the *National Rethinking Construction Initiative*, and so the project alliance provided us with exceptional opportunities to study the processes of developing inter-organizational trust in this partnering type of arrangement. As researchers, we were permitted to enter the construction site, to conduct in-depth interviews with the relevant project participants and to look at important project documentation.

5.2.3. Case study design

In identifying factors involved in the development of inter-organizational trust in an alliance, we used both our literature review (Chapter 2) and theoretical model (Chapter 3) as guides in deciding which factors to focus upon in our case study protocol (see Appendix A). For this we first developed a notion of the subsequent negotiation/procurement, commitment/contracting and execution/ construction phases of the project. Second, in order to examine the dynamics of trust in this partnering type of arrangement, we focused on the perceptions of the principal and contractor organizations concerning whether the initial conditions of the project in terms of the risks they faced, both internal and external to their relationship, were conducive to trust. Here, we also looked at the adopted formal and informal forms of control to see whether these complemented, or substituted for, the levels of trust initially present in the project. In this regard, we also considered the influence of the project's performance, both in terms of outcomes achieved as well as the relational quality underlying these outcomes, on the dynamics of trust between the organizations involved. Since it has been argued that initial levels of trust may have a strong imprint on the development of a relationship (Vlaar et al., 2007), we first interviewed informants on the project early in the execution/construction phase, i.e. in the spring of 2007 (see Figure 5.1, T = 0). This timing was also because the project partners did not want us to be involved in the negotiation/procurement phase.

However, by asking our informants about how they had perceived the negotiation/procurement processes, and by focusing on the arrangements that the principal and contractor organizations had committed themselves to, we were able to acquire a picture of this phase as well (T < 0). In order to see how and why trust between project partners develops over time, we interviewed the informants for a second time when the project had made six months of progress, i.e. in the autumn of 2007 (T = 1). In this second series of interviews we also looked at the project's future prospects (T > 1).

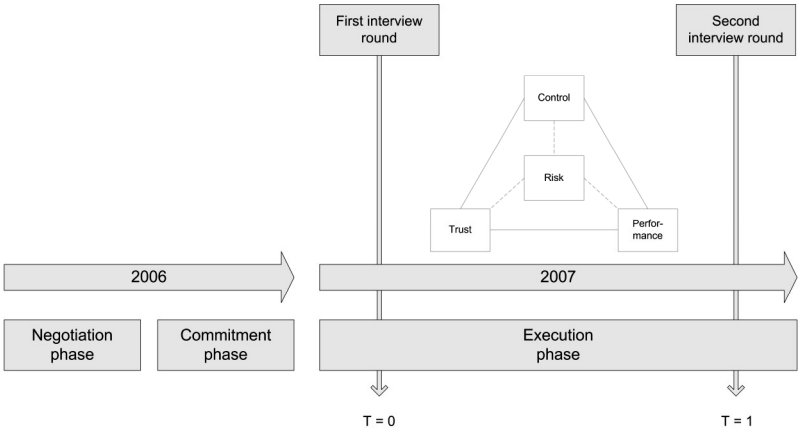

Figure 5.1 Schematization of the case study.

Chapter 2 and 3 not only helped us to determine what information we should gather because it had been shown to be important from theoretical or empirical perspectives in previous research, they were also very helpful in understanding emerging patterns in the data and in establishing criteria for interpreting our study findings (Yin, 2003; Miles and Huberman, 1994). In the words of Swanson and Holton (2005): '[t]he literature review provides the totality of the theoretical underpinnings of the study, and the conceptual framework is the figure (…) that stands out against this larger, theoretical ground' (p. 335). As the theoretical framework became increasingly concrete with the emerging reality of the case as we collected data, a storyline emerged that helped us to focus on

particular aspects of the framework that seemed especially relevant to the story. In this way, we were able to formulate our questions to the project informants increasingly precisely as we acquired a better understanding of how and why the storyline of the case unfolded. In Table 5.1, the variables of our case study protocol are presented.

Variables	Aspects	Key references
Trust	Competence trust Intentional trust	Lindenberg (2000), Nooteboom (2002), Bijlsma-Frankema and Costa (2005)
Risk	Internal risks External risks	Gambetta (1988), Ring and Van de Ven (1994), Das and Teng (2001), Nooteboom (2002)
Control	Formal control Informal control	Das and Teng (2001), Bijlsma-Frankema and Costa (2005), Möllering (2005a)
Performance	Objective performance Subjective performance	Weick (1995), Ariño (2003), McEvily and Zaheer (2006), Vlaar et al. (2007)

Table 5.1 The case study protocol variables, the relevant aspects, and the related key references.

5.2.4. Case study data collection

As noted earlier, the empirical work was conducted in 2007. The data were collected through two series of, in total 25 in-depth, face-to-face interviews with key informants on the project. In addition, we studied relevant project documentation (i.e. contract documents). Each interview lasted 60 to 90 minutes and was semi-structured in that we used flexible interview guides that were tailored to the specific roles of the key informants within the project. This allowed the interviewees to tell their own stories. In the first series of interviews, we interviewed five project participants from the principal and six project participants from the contractor. In the second series of interviews, we interviewed six participants from the principal and eight participants from the contractor. As a consequence of ongoing personnel changes within the project, we were only able to interview six informants twice, i.e. in both the first and second series of interviews. The interviewed respondents were involved in the project in various ways. In total, ten

interviewees were involved on a strategic level, five on behalf of the principal and five on behalf of the contractor. These were all members of either an alliance steering committee or an alliance management team, established for the project. In total seven interviewees were involved on an operational level, two on behalf of the principal and five on behalf of the contractor. These were all members of the principal and contractor organizations' project teams. Further, we interviewed two people from the principal who were not directly involved in the execution/construction phase, on either a strategic or an operational level, but who played important roles in the negotiation/procurement and commitment/contracting phases of the project. Since we selected the interviewees with the aim of obtaining the most authoritative and insightful viewpoints with regard to the dynamics of inter-organizational trust within the project, we wanted them to tell us, from their specific perspective, how the concepts of trust, risk, control and performance were identified and recognized in a real-life context. By subsequently focusing on how the project participants perceived the interrelationships between the constructs, we were able to examine how the constructs influence each other and why trust develops in a certain way. In order to facilitate the collection of information, a close relationship between the respondents and the researcher had to be established. By regularly visiting the construction project and by chatting to other project informants before and/or after interviewing a specific informant, such a relationship with the respondents was developed. Table 5.2 provides an overview of the interviews, differentiated by the organizations the interviewees worked for and by their level of involvement.

	Number of interviews, first series		Number of interviews, second series	
Principal	Strategic level Operational level Other	4 (2 ASC[5] / 2 AMT[6]) 0 1	Strategic level Operational level Other	3 (1 ASC / 2 AMT) 2 1
Contractor	Strategic level Operational level	3 (1 ASC / 2 AMT) 3	Strategic level Operational level	4 (3 ASC / 1 AMT) 4
	Total	11	Total	14

Table 5.2 Number of interviews, differentiated by the organizations the interviewees worked for, and by their level of involvement.

All the interviews were recorded and each interview was transcribed in order to facilitate detailed and systematic analysis. The two interview rounds generated a rich but still manageable (about 375 pages) amount of textual data. We read the transcripts numerous times, identifying and labeling passages that related to the themes that we had identified based on our theoretical framework. Further, we also took into account additional elements that emerged from the interviews (Swanson and Holton, 2005). This process enabled us to become fully immersed in the data and it helped us to remain open to what the interviewees were actually saying, even when this was outside our conceptual framework. While the process of breaking up and labeling the data into somewhat general categories can be thought of as a data reduction process, this process also opens up the data, exposing new insights. Thus, it is about both discovering and conceptualizing the data, leading to our understanding and interpretation of what was going on in the case studied. Subsequently, by clustering the labeled passages and looking for patterns emerging in the data, we moved to the interpretative mode (Miles and Huberman, 1994). Here, we integrated our findings by focusing on how the elements of the theoretical framework became coherent. In this way, we moved from a simple case description into an exploration of the underlying mechanisms through which trust develops over time.

[5] ASC = Alliance steering committee
[6] AMT = Alliance management team

5.2.5. Case study validity and reliability

Although a case study is the most appropriate research strategy for exploring how and why trust between business partners develops over time, Yin (2003) contends that researchers should explicitly pay attention to the issues of validity and reliability when designing and conducting a case study. He identifies four tests that are relevant to case studies concerning construct validity, internal validity, external validity and reliability (see also Swanborn, 1994; Swanson and Holton, 2005).

The first test, for construct validity, has to do with establishing and applying the correct measures for the concepts being studied. To increase construct validity, multiple sources of evidence can be used. In this regard, Stake (1995) proposes several methods of triangulation: methodological triangulation (multiple methods), theoretical triangulation (multiple theoretical viewpoints), investigator triangulation (multiple investigators) and data source triangulation (multiple data sources). To increase construct validity, we essentially used two methods to collect data: interviews with key informants of the project and studying relevant project documentation. Theoretical triangulation was achieved by applying different theoretical perspectives. We obtained insights from theories on both calculative and non-calculative trust and from similar theories on the interrelationships between the constructs in the conceptual framework. We further applied theories on inter-organizational relationship development and strategic alliances. In order to increase the validity of the operationalisation, we modeled the concepts included in the case study protocol using well-known and widely accepted definitions. The construct validity was increased further by having the data collected by two researchers. As the study progressed, both researchers became engaged in a process of continually revising and fine-tuning the case study protocol in order to find theoretically meaningful and empirically sensible answers to the research questions. As a result, the research findings are the outcome of an iterative process between theory and data, based on strong inter-researcher agreement. Finally, data source triangulation has been achieved by having multiple interviews with the same people and interviews with

different project participants about similar subjects. Further, we discussed a draft of the case study report with members of both the alliance steering committee and the alliance management team in order to further increase the construct validity of our study (Yin, 2003; Swanson and Holton, 2005).

Internal validity refers to the extent to which causal relationships exist between two or more study variables. Yin (2003) argues that internal validity is only relevant for explanatory or causal studies, and not for descriptive or exploratory studies. Since our study has a process approach and assumes independent variables that are incapable of causing certain outcomes, it is not possible to establish unidirectional cause and effect relationships. Therefore, internal validity is not applicable to this research.

External validity refers to the extent to which a study's findings can be generalized to other populations or settings (Swanborn, 1994; Yin, 2003; Swanson and Holton, 2005). This is often problematic with case study research, since the purpose of conducting a case study is to seek an in-depth understanding of a specific phenomenon. However, the fundamental processes of inter-organizational trust development that this study seeks to explore are not limited to our case, or even to similar cases. Swanson and Holton (2005) argue that 'consumers of a case report may determine relevant applications to their own context' (p. 339). In this, they contend that a case study relies more on an analytical generalization. Therefore, in a single case study, external validity can be increased by using accepted theory and by providing a valid description of the reality of the case. In our study, we make use of different theoretical perspectives, and a valid description of the case is ensured through method and data source triangulation and by the external control of the draft case study report through the key informants.

The fourth issue, reliability, requires one to demonstrate that the operations in the case study could be repeated with the same results. In terms of Yin (2003): '[t]he objective is to be sure that if a later investigator followed the same procedure 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' (p 37). Here, Yin suggests that investigators present a case study plan, use a case study protocol and develop a case study database that documents case study notes, documents and interview transcriptions. In our study, we used all these techniques in order to improve the reliability of our study.

5.3. Case study description: The Batavian Alliance

5.3.1. Introduction

In the previous section, we discussed why we chose a case study strategy to answer our research question. Further, we discussed the method of data collection as well as issues of validity and reliability. In this section we present our case study project. First, we describe the project characteristics. Second, following the model of Ring and Van de Ven (1994), we describe the subsequent negotiation/procurement, commitment/contracting and execution/construction stages of the project. After presenting the project and process descriptions, we explore the factors involved in developing trust within the case study project in the subsequent section. For this, we apply the conceptual framework developed in Chapter 3, i.e. we analyze how and why trust between the project partners develops over time related to aspects of risk, control and performance.

5.3.2. The project's characteristics

Our case study project concerns a rail construction project. Prorail - a former public organization, privatized in 2002 - is responsible for exploiting and maintaining the Dutch railway network. The organization takes care of 6,500 kilometre of track, 4,500 bridges and tunnels and 375 stations. In order to deal with the increase in passenger and freight transport in the Netherlands, Prorail is working on expanding the capacity of the railway network. In this, a large construction project the organization is working on is the *Randstadspoor project*. This project is aimed at making the Utrecht region more attractive for rail commuters. Within the project, 42

kilometre of new track and eight new stations will be built. A sub-project of the *Randstadspoor project* is the *VleuGel project,* which aims to double the number of tracks between Vleuten and Geldermalsen. This sub-project involves the rebuilding of three existing stations and the building of seven new ones. Our case study project concerns the *Houten - Houten Castellum* component of this *VleuGel project* (see Figure 5.2). All these projects are planned to be built between 2002 and 2015.

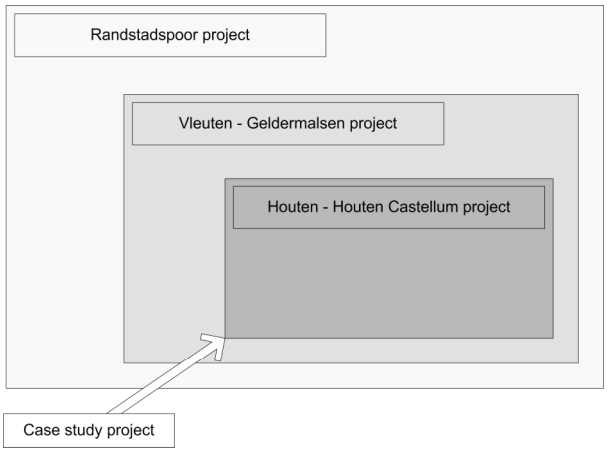

Figure 5.2 Embeddedness of the case study project.

The *Houten - Houten Castellum project* is to be realized within the domain of the municipality of Houten. Houten is a medium-sized city near Utrecht, which has been selected by the Dutch national government as an important growth region in order to house the rapidly growing population of Utrecht. It has previously grown from about 8,500 inhabitants in the late 1970s to about 30,000 inhabitants in the early 1990s. The growth rate has remained high, and the population will exceed 50,000 inhabitants in the near future.

The *Houten - Houten Castellum project* concerns doubling the number of tracks in Houten over a total length of about five kilometre. During the project, the station at Houten will be rebuilt and a new station, Houten Castellum, will be added. This new station will provide railway facilities for the inhabitants of the southern part of Houten.

Further, the project involves rebuilding a rail crossing vehicle tunnel in the northern part of Houten; the (re)building of an auto tunnel, a bus tunnel, a pedestrian underpass and a large cycle store in the city centre; and the building of an underpass for cyclists in the southern part of Houten, close to the new Houten Castellum station. The project is strongly linked to the master plan of the municipality of Houten. In this plan, the city centre will be completely reconstructed in the period 2005 - 2010, because the city centre has become too small to handle the growing population.

Prorail is the principal organization in the *Houten - Houten Castellum project*, although it is financed by the Dutch Ministry of Transport, Public Works and Water Management. For the project, Prorail has over € 100 million at its disposal. The municipality of Houten has placed several additional orders to 'upgrade' the Prorail plans to meet their own master plan, and so Houten is contributing over € 20 million to the project as well. This means that the total investment is more than € 120 million. This sum has to be divided, since the *Houten - Houten Castellum project* has several sub-projects. One sub-project consists of laying the sand foundations for the project as well as building the aforementioned tunnels, underpasses and stations. A second sub-project will subsequently lay the rails and install the electrification equipment. Although both projects are strongly linked, they were put out to tender separately. Our case study concerns only the first sub-project, which has an estimated cost price of about € 40 million. Prorail made a start on doubling the tracks in 2007. In 2007 and 2008, a new track will be built on the western side of the existing two tracks, and in 2009 and 2010 another new track will be built on the eastern side of the existing two tracks. The project is planned to be finished by mid-December 2010.

5.3.3. The negotiation/procurement stage

In this section, we describe the negotiation/procurement processes for the *Houten - Houten Castellum project*. These processes were strongly influenced by general procurement policy developments within the Prorail organization. When Prorail was privatized in 2002,

the organization was used to following a traditional procurement route. With regard to this, for construction projects over € 250,000 and for design and consultancy services over € 100,000, Prorail had to conform to European public procurement guidelines. For smaller projects and services, construction and design firms could be selected more directly. In the traditional procurement route, Prorail first went through a design procedure. Subsequently, the organization put this project design out to tender in order to select and contract a construction firm, usually with price as the main criterion. Within such a context, design firms were motivated to spend as much time as possible, while there was no incentive for achieving a design that could be efficiently realized by construction firms. For construction firms, the general policy was to put in a low bid in order to gain the contract, and then compensate for this through an income for claims arising from extra work. Since this was not an ideal situation for Prorail, the organization switched to a more innovative, design-build, procurement route. Here, Prorail does not put out to tender a project design, but rather the functional specifications (i.e. the demands that should be fulfilled by a design). In this way, Prorail invites competing construction firms to come up with an efficient design for the project. For this, the firms usually have to contract a design firm. Thus, the construction firms are forced to compete on design creativity and constructability, rather than simple on price. Since they have to come up with a competitive design, the overall costs of Prorail projects are expected to fall.

With the *Houten - Houten Castellum project*, Prorail initially intended to follow the traditional procurement route. In 2002, Prorail and the municipality of Houten agreed on how to integrate the Prorail plans into the master plan for the city centre. For this, Prorail came up with an artist's impression - developed by a design firm - of what the project would look like. However, the go-ahead by the Dutch Ministry of Transport, Public Works and Water Management did not come until 2004. In the meantime, Prorail had switched over to the design-build procurement route. Therefore, in order to put the project out to tender, the original design had to be converted into functional specifications. However, since Prorail and Houten had agreed earlier on

how to integrate their plans, the construction firms were not allowed to come up with a new project design. They were only being challenged to re-engineer the project. Thus, the *Houten - Houten Castellum project* can be characterized more as an engineer-build project, rather than a design-build project.

The procurement process started in mid-2005. First, seven construction firms, who had indicated a willingness to compete, were preselected. Subsequently, Prorail consultated the selected firms separately in order to discuss possible solutions to the project demands in the tender. This consultation round led to an invitation to five construction firms to price the project. Here, the construction firms had to take into account the functional specifications (the project demands to be fulfilled) and the artist's impression (what the project outcome should look like), as well as a spatial plan (where the project should be built) and a statement of work (the way the project should be built). Furthermore, the construction firms were challenged to take over project risks, as defined by Prorail, by quantifying these risks in their bid. The choice criterion for the *Houten - Houten Castellum project* was mainly based on the project price proposed by a construction firm, increased by the risk budget of Prorail less the quantified project risks taken by the bidder. Thus, the proposed project price was increased by an amount for remaining risk in selecting a construction firm. Three firms actually submitted a bid in early 2006. After evaluating the bids, Prorail negotiated further with these firms in order to discuss and optimize their bids in more detail. The revised bids were submitted in the spring of 2006, after which the project was awarded to the construction firm CFE in the summer of 2006.

Currently, most Prorail projects are put out to tender as design-build contracts. However, the organization faces problems that complicate the relationship with construction firms in some design-build projects. Especially in the event of large project risks, not really controllable by Prorail and/or the construction firms, the relationship may become frustrated by disputes and process delays. In order to overcome these adversarial, low-trust situations, a more collaborative contract form has recently been developed: the project alliance. In an alliance, the relation between the principle organization and the

contractor is expected to be smoothed by the creation of a common interest (see Section 5.3.4 for a more detailed analysis of the incentive structure of an alliance). In the Netherlands, the project alliance form had only been adopted once before in a rail construction project. From 2002 - 2006, a € 135 million sub-project of '*The Betuwe Line*' - a freight railroad between Rotterdam and Germany - was built using this contractual form (Prorail, 2005). This project was experienced very positively by the project participants, and so Prorail planned to experiment with smaller project alliances in order to see whether this contract form was also suited for smaller construction projects.

Since the *Houten - Houten Castellum project* dissects the city centre, the project risks are expected to be high, especially with regard to obtaining the construction licenses required. Therefore, Prorail suggested converting the design-build contract agreed upon into a project alliance, almost immediately after assigning the project to CFE. In the meantime, CFE had asked two other construction firms, KWS and TBI, to set up a consortium for constructing the project. KWS was asked to construct the sand foundations, whereas TBI was asked to construct the tunnels, underpasses and stations. The three firms agreed on setting up a general partnership - the Combination Houten 4 (CH4) - to construct the *Houten - Houten Castellum project*. Furthermore, CFE and TBI agreed on setting up a second general partnership - the Combination Houten 4 Concrete (CH4C). The CH4 revenues are divided between KWS and the general partnership CH4C, based on their specific project contributions. Within CH4C, the revenues are split using a formula. Prorail and the construction firms adopted an alliance form of contract at the end of 2006, after four months of negotiations. The project partners decided to name the project *The Batavian Alliance*, after a West-Germanic tribe that had lived in the Houten region about 2000 years ago. *The Batavian Alliance* is also a general partnership, composed of Prorail and the CH4 partnership. The timeline of the procurement route is illustrated in Figure 5.3.

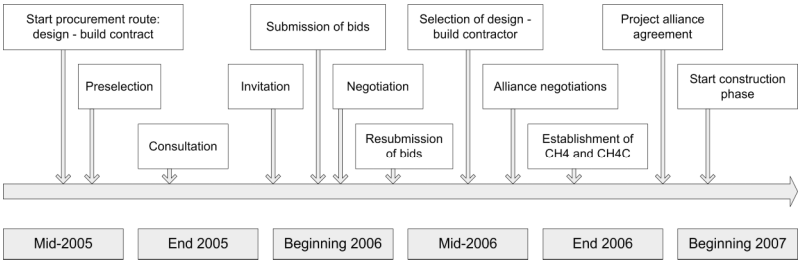

Figure 5.3 Time line procurement route The Batavian Alliance.

5.3.4. The commitment/contracting stage

The procurement phase leads to the commitment/contracting stage. In converting the design-build type of arrangement into an alliance form of contract, Prorail and CH4 agreed an alliance contract and a construction contract. The alliance contract regulates the joint Prorail and CH4 tasks, responsibilities and accountabilities, while the construction contract regulates the construction activities to be performed by the CH4 construction firms. The alliance contract contains arrangements on (1) design activities, (2) control activities and (3) activities with regard to managing the alliance budget. In terms of design activities, the alliance is responsible for converting the submitted project design into a definitive project design. So, the alliance has to provide CH4, on time, the correct drawings. In this way, the alliance has become the delegated principal for the *Houten - Houten Castellum project*. Further, the relationship between the alliance and CH4, as regulated by the construction contract, can be seen as a traditional principal - contractor type of relationship since the alliance has become responsible for supervising CH4's construction activities. So, the alliance has to control CH4's construction products and processes in order to ensure that the quality delivered corresponds with the norms and specifications agreed. The alliance is financed by an alliance fund: the budget of the project alliance. This fund is made up of Prorail and CH4's design and management budgets, as well as

their risk budgets[7]. The alliance's design and management costs, as well as emerging risks and future problems, have to be paid out of this fund. However, the fund can be boosted by savings resulting from optimizing the project design. At the end of the project, any positive or negative outcome of the alliance fund will be shared between Prorail and CH4 according to an agreed 50%-50% formula. So, the challenge for Prorail and CH4 is to set up a lean project organization, to strive for design optimizations and to tackle emerging risks and contingencies in close cooperation, in order to end up with a positive balance in the alliance fund. This incentive mechanism is summarized in Figure 5.4. The project participants agreed on an alliance fund of about € 7,5 million.

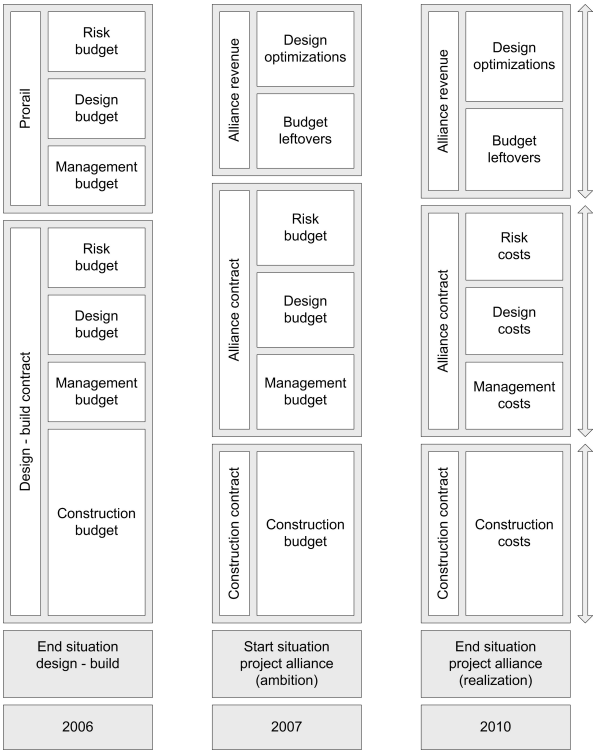

Figure 5.4 Incentive mechanism The Batavian Alliance.

[7] Prorail remains responsible for risks legally belonging to the principal organization, and the CH4 firms remain responsible for construction risks. Both parties agreed on taking joint responsibility for - other risks including - design and license risks.

Furthermore, Prorail and the CH4 construction firms agreed on setting up an alliance steering committee and an alliance management team. The steering committee is responsible for the overall performance of the *Houten - Houten Castellum project*, and the management team is entrusted with the day-to-day management of the project. The alliance steering committee consists of two representatives from the Prorail organization and two from CH4. These representatives meet on a regular basis and supervise the alliance management team both organizationally and financially. The steering committee has been given the authority to take decisions up to € 100,000. The management team was appointed by the alliance steering committee and consists of four people, each with an own field of expertise. The alliance manager (a Prorail representative) is entrusted with the overall management of the project. As such, he is responsible for coordinating the day-to-day activities of the alliance management team. Further, he has to justify the alliance performance to the alliance's steering committee. For this project, the alliance manager is also the contract manager on behalf of Prorail. As such, he is responsible for realizing all the *Houten - Houten Castellum sub-projects* from the beginning of the procurement stage through to the end of the construction stage. So, as contract manager, he has to justify the performance of all the *Houten - Houten Castellum sub-projects* to relevant Prorail departments and directorates. The design manager (a CH4 representative) oversees the design process, i.e. he supervises a design firm working on the project design. The construction manager (a CH4 representative) focuses on controlling the process and product performance of CH4 during the construction processes. Although the working methods of the CH4 construction firms are ISO-certified, an engineering firm has been brought in to check the design and construction of the sand foundation, and another engineering firm is contracted to check the design and construction of the tunnels, underpasses and stations. An assurance firm will only guarantee these constructions if the latter approves the quality delivered. The design firm and the engineering firms are contracted by *The Batavian Alliance,* whereas the CH4 construction firms have to contract their own suppliers. Finally, the environment

manager (a Prorail representative) is responsible for obtaining all the construction licenses required. The alliance management team has the authority to take decisions up to € 25,000. Both the steering committee and the management team have to make decisions unanimously. If Prorail and the construction firms cannot solve an issue cooperatively, they have agreed on an arbitrage procedure. Figure 5.5 illustrates the organizational scheme of the project, whereas the contract scheme of the project is presented in Figure 5.6.

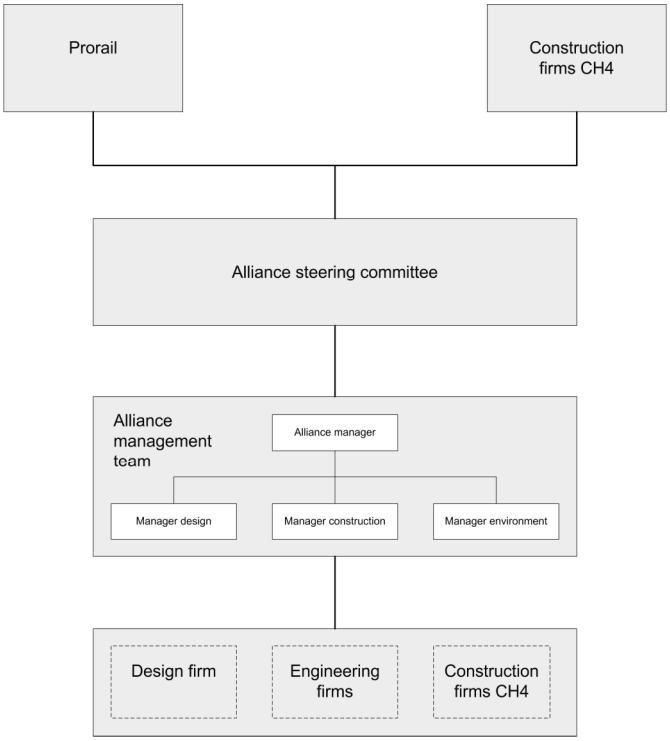

Figure 5.5 Organizational scheme The Batavian Alliance.

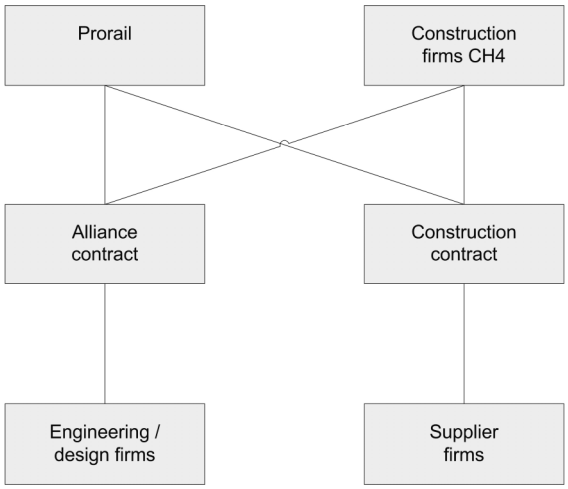

Figure 5.6 Contract scheme The Batavian Alliance.

5.3.5. The execution/construction stage

After Prorail and the CH4 construction firms agreed on adopting an alliance form of contract at the end of 2006, they moved into the execution/construction phase. However, the alliance and the construction contracts were not signed until mid-2007, because legal specialists had to work out the arrangements the parties had agreed in more detail. In the meantime, the project partners worked on the basis of a gentlemen's agreement. Both the alliance steering committee and the alliance management team were formed at the end of 2006. The Prorail, TBI and CFE alliance negotiators became part of the alliance management team, and the KWS negotiator took a seat on the alliance steering committee. A legal specialist from the Prorail organization completed the alliance management team, and the alliance steering committee was completed with the managing directors of Prorail, TBI and CFE. At the beginning of 2007, the alliance management team and the project managers/construction workers from CH4 were housed in a common building, close to the construction site. The alliance management team was accommodated on the upper floor, with the project managers/construction workers on the ground floor.

In starting up *The Batavian Alliance*, the project participants had to handle three important processes: (1) converting the submitted project design into a definitive project design, (2) obtaining the construction licenses required and (3) starting up the construction processes. The first two processes had to be managed by the alliance management team, whereas the third process was managed by the CH4 construction firms. The processes are strongly interrelated since the process of obtaining licenses depends on the availability of construction drawings, while the construction processes cannot be started without construction drawings and construction licenses being available. In the next three paragraphs, we will describe the development of these processes into more detail.

With regard to the first process, from early on, a design firm was brought in to work on the project design. In the traditional procurement route, the design is completed by the principal before it is put out to tender. In a design-build procurement route, construction firms submit a draft design that has to be converted into a definitive design once the project has been assigned to a certain construction firm. Usually, for construction firms, this conversion process is highly pressured, since they have to start the construction processes as soon as possible in order to finish the project on time. The principal will check the converted project design to ensure that it corresponds with the prescribed norms and agreed project specifications. In the case of a project alliance, both the principal and the construction firms become responsible for converting the submitted project design into a definitive design. They strive to optimize the project design, since the alliance fund benefits from savings resulting from design optimizations. In the case of *The Batavian Alliance*, design optimizations were proposed by both the alliance management team and the project managers of CH4. Their proposals are then effected by the design firm. However, since Prorail and the municipality of Houten agreed earlier on how to integrate their plans, the possibilities in optimizing the project design were limited. Further, whereas in many design-build contracts disputes arise about the interpretation and application of prescribed construction norms, in the project alliance Prorail becomes willing to interpret and apply these less strictly, since this opens up

possibilities for design optimizations. However, Prorail did not deviate from legally prescribed norms. Thus, the design conversion processes (which in the design-build procurement route belong to the contractor) and the design control processes (which in the design-build procurement route belong to the principal) are merged in a project alliance, so that both the principal and the contractor become responsible for optimizing the project design. A side effect of interweaving both processes is a reduction in alliance design costs.

Administration system

The project partners agreed on adopting an administration system developed by the project alliance for *The Betuwe Line*. In a traditional or design-build contract form, the principal and the contractor each make use of their own administrative systems. In *The Batavia Alliance*, Prorail and the CH4 construction firms decided to use a common administration system, transparent to all the project partners involved. Within the system, the conversion of the submitted project design into a definitive project design is registered. Further, the system keeps the financial consequences of proposed and accepted design modifications up-to-date. Design changes may result from design optimizations agreed by the project partners, as well as from less/extra work to be performed by CH4 in the construction phase. A CH4 representative is responsible for registering the design conversion process, whereas a Prorail representative is responsible for keeping the financial books up-to-date. Since *The Batavian Alliance* has its own bank account, the Prorail representative also has to take care of the project alliance cash flows.

Besides converting the submitted design into a definitive one, the project partners have to take care of obtaining the licenses required to build the project - the second process the project partners have to handle. Within the Prorail organization, a special department is engaged in acquiring building land, obtaining licenses and settling damage claims caused by construction activities. As the principal organization, Prorail first has to secure the building land on which a construction project will be realized. In the traditional procurement

route, the principal organization also has to apply for licenses. In the design-build procurement route, the contractor often becomes responsible for applying for licenses. Normally, the design-build contractor hires in a specialized firm to manage this process. Both processes bring a certain amount of risk since a delay in land or license availability may hold up subsequent construction processes. In the traditional setting, a delay in obtaining licenses brings problems for the principal organization, whereas in the design-build procurement route it is the contractor who is in trouble. In *The Batavian Alliance*, the alliance management team has responsibility for applying for licenses. In the alliance contract, the risk budgets of Prorail and CH4 with regard to obtaining licenses have been combined. The municipality of Houten has to grant the building licenses as well as the licenses for the construction processes of the project. The municipality also insists that *The Batavian Alliance* conforms a so-called BLVClicense. This license concerns the accessibility, livability and safety of the city centre of Houten throughout the construction phase of the project, as well as informing the inhabitants of Houten about noise nuisance, pile driving vibrations, etc[8].

Activities with regard to the conversion of the project design and the application for licenses were not started until after Prorail and CH4 agreed on adopting the alliance contract form at the end 2006. Further, the project partners decided not to change the planning of the execution/construction phase they had agreed during the design-build negotiation period. This was because of the embeddedness of the *Houten - Houten Castellum project* within the *VleuGel* and the *Randstadspoor projects*. Consequentially, the design and license activities to be performed by the alliance management team became critical for the start of the construction phase of the project - the third process the project partners had to handle in starting up *The Batavian Alliance*. Thus, at the beginning of 2007, the alliance management team had to handle a multitude of tasks, whereas the construction firms could barely start construction work since they had to wait for construction drawings to be delivered and building licenses to be

[8] BLVC stands for bereikbaarheid (accessibility), leefbaarheid (livability), veiligheid (safety) and communicatie (communication).

obtained by the alliance management team. Already at the end of 2006, the CH4 construction firms started work on preparing the building land for the project. Further, they constructed a temporary station, so that they could then rebuild Houten Station without hindering passengers. At the beginning of 2007, KWS started working on the sand foundations for the new track on the western side of the existing two tracks. For this, 250,000 cubic metres of sand had to be transported. A special supply route, within *The Batavian Alliance* construction site, was used in order to keep the city centre free from trucks. At the same time, CFE and TBI started working on constructing the stations at Houten and Houten Castellum, as well as on constructing the tunnels and underpasses included in the *Houten - Houten Castellum project*. For this, they first of all had to dismantle the existing station at Houten. Subsequently, they started driving piles for the foundations of the stations, tunnels and underpasses, as well as for the electrification system and the acoustic fences. After six months of construction work, KWS had almost completed the sand foundation activities for the western side of the project. Further, CFE and TBI were able to start pouring concrete for the rail crossing road tunnel in the northern part of Houten and the underpass for cyclists in the southern part of Houten. In the city centre, both firms were still working on the foundations of the station, the auto and bus tunnel and a pedestrian underpass.

However, during the first half year of the construction phase, it became clear that Prorail and CH4 would not be able to recover the time lost due to the late start of the design and license activities. Consequentially, they were not able to meet the completion milestones with regard to the western side of the project they had agreed upon during the design-build negotiation period. The delays worsened as the alliance management team struggled to comply with the demands of Houten in order to obtain the licenses required to construct the project. Further, it became clear that the design firm was not able to provide CH4 with correct drawings on time. Furthermore, the construction firms faced problems with the process of driving piles in the city centre of Houten. Although the completion milestones were important since they linked with rail traffic standstill periods of the

Randstadspoor and *Vleuten - Geldermalsen projects,* Prorail and CH4 decided to delay the completion date of the western part of the *Houten - Houten Castellum project*. Since the milestones with regard to the overall completion of the *Houten - Houten Castellum project* remained the same (i.e. the project still has to be completed by the end of 2010 because of the project's embeddedness), this means that less time is available for constructing the eastern part of the project. In postponing the completion date for the western part, the alliance management team had to agree, with Prorail, new rail traffic immobilization periods. Since the *Houten - Houten Castellum sub-project* for laying the rails and electrification was put out to tender in the first half of 2007, *The Batavian Alliance* had to also tune these new immobilization periods with the project organization of this adjacent sub-project.

Further, during the first half year of the construction phase, the composition of the alliance management team and the alliance steering committee changed. The workload within the alliance management team began to alter: the design manager and the environment manager became less busy, whereas the construction manager became increasingly tied up. Further, one of the key project managers from CH4 was transferred to another construction project. In order to keep the project organization lean, the project partners decided to allocate the tasks and responsibilities of the design manager to the construction manager, so that he has to supervise both the design firm and the CH4 construction firms. Since Prorail and CH4 also decided to allocate the tasks and responsibilities of the transferred project manager to the construction manager, he now has a double role because he operates both on the strategic and the operational project levels. In order to avoid a conflict of interest, the tasks and responsibilities concerning checking the performance of the CH4 construction firms were transferred to the alliance manager. The composition of the alliance steering committee has also changed: a managing director from Prorail - as a consequence of replacement - and a managing director of a CH4 construction firm - as a consequence of retirement - were succeeded by two other managing directors.

5.4. Case study analysis: The Batavian Alliance

5.4.1. Introduction

In the foregoing section, we deduced the project characteristics of *The Batavian Alliance*. Further, we described the subsequent negotiation/procurement, commitment/contracting and execution/construction stages of the project. Now, in this section, we explore the factors involved in the development of inter-organizational trust within this rail construction project. For this, we apply the theoretical framework derived in Chapter 3, i.e. our focus is on the proposed tendency of trust to develop along vicious or virtuous cycles related to aspects of risk, control and performance. In discussing our findings, we follow, where practical, the chronological order of the case as described in Section 5.3. Thus, we first present the perceptions of project participants as to whether the initial conditions, in terms of the risks they face, both internal and external to their relationship, are conducive to trust. Next, we move on to the adopted formal and informal forms of control to see whether these complement, or substitute for, the levels of trust initially present in the project alliance. Finally, our focus moves to the influence of the project's performance - both in terms of the outcomes achieved as well as the relational quality underlying these outcomes - on the development of trust between the principal organization and the contractors involved. In quoting from, or referring to, specific interviews, we identify the organization to which the respondents belong in parentheses (PR or CH for a Prorail or CH4 representative, respectively). Where relevant, we stress how the dynamics of trust as seen in the project alliance differ from the deteriorating patterns of behavior that organizations often face in both traditional and design-build types of arrangement.

5.4.2. Inter-organizational trust and risk

In discussing the risks that Prorail and the CH4 construction firms faced early in their relationship, our focus is first on the original risk profile of the *Houten - Houten Castellum project*, since this provides insights into the reasons why the organizations were

motivated to convert the design-build contract they had agreed upon into a project alliance form of contract. Next, we discuss how the levels of trust initially present in the project alliance were influenced by the alliance negotiation processes. In this regard, our focus has also to be on the contractual arrangements the project partners agreed upon, so we are somewhat ahead of the section on the adopted formal and informal forms of control.

The design-build project's risk profile

The data suggest that there are several factors that motivated the project partners to enter into a project alliance, and that these were closely related to the original risk profile of the *Houten - Houten Castellum project*. At the end of 2006, Prorail suggested to the CH4 construction firms that they convert the design-build contract they had agreed upon into a alliance form of contract. This was primarily because Prorail wanted to experiment with project alliances in relatively small, but complex, construction projects. However, there was more involved. Already in the design-build procurement stage, some of the bidding construction firms had suggested converting the design-build contract they were negotiating into a project alliance. This was, among other things, because they faced the risk of the municipality of Houten creating difficulties with regard to granting the licenses required for the construction phase of the project: *"For us, Houten seems not to be the most ideal partner to cooperate with (…). Therefore, in the process of obtaining licenses we expected all kinds of problems, slowing down the whole process" (CH).* Or, as another interviewee put it: *"Houten will make difficulties with granting licenses, which is understandable since the project dissects the city centre. However, for us, it is a challenge to keep the project running" (PR).* Whereas, in traditional forms of contract, the principal organization is responsible for ensuring that construction licenses are available for the contractor, in design-build procurement routes, construction firms have to apply for these. Consequently, in the traditional type of arrangement, a delay in obtaining construction licenses creates problems for the principal organization, since contractors can claim for lost income as a consequence of a delay in construction. Conversely, with the design-

build procurement route, as in the original *Houten - Houten Castellum project*, it is the construction firms that run into trouble if they do not succeed in obtaining licenses on time because they then face the risk of a fine, imposed by the principal, for not delivering the project on time. This problem becomes more prominent than one might expect, since contractors have, so far, little accumulated experience of applying for licenses, while Prorail is inclined to adopt a reserved attitude in suggesting how to manage this process: *"If we help to find a solution, construction firms might argue that we prescribed a process, and so joining in the deliberations might lead to claims" (PR).*

The CH4 construction firms not only faced the risk of running out of time as a consequence of a delay in obtaining construction licenses, they also faced the risk of running out of budget. At the time when the design-build project was being put out to tender, the construction industry was experiencing a downturn and so CFE had to submit a relatively low bid in order to win the contract. Since the construction firms were being challenged to take over the project risks, as defined by Prorail, by quantifying these risks in their bids, CFE decided to accept responsibility for most of the indicated risks in order to be seen as the favored bidder. Subsequently, CH4 was faced with a hard-bargained design-build contract situation: *"Sometimes, construction firms are forced to enter into a design-build project with a very high risk profile (…). At the time this project was put out to tender, they offered us very competitive prices" (PR).* In the words of a CH4 interviewee: *"We had to enter into the design-build contract during a downward economic trend. Market prices were at their lowest point. Although we came to an agreement, we faced the risk of running out of budget" (CH).* With traditional forms of contract, during a downturn, construction firms may put in a low bid in order to gain the contract, but they expect to compensate for this by claiming for extra work. This is possible, because the contractor has the exclusive right to carry out any additional work necessary due to design changes and contractual omissions on cost-reimbursable terms: *"If we come across failures in project specifications, we will claim for the extra work immediately. Accordingly, if three projects are put out to tender, and we are only able to bid for one, we will choose the project with the best*

claim potential" (CH). Another option for construction firms is to shirk on quality, given the possibility of hiding work and using low quality materials instead of more expensive, high quality, products. However, in a design-build procurement route, as in the original *Houten - Houten Castellum project*, contractor organizations are forced to compete on design creativity and constructability, rather than on price, since they have to come up with the project design themselves. Therefore, although they may still shirk on quality to compensate for a low bid, the opportunities for contractors to make claims against the principal organization are severely restricted, so the risk of running out of budget is far greater than in traditional forms of contract: *"If we gain a € 100 million design-build contract, and our bid was miscalculated by 10%, we lose € 10 million. In a traditional type of arrangement, our bid would have been € 95 million (…), but we would have put in claims for extra work to compensate. Thus, in a design-build situation, our profit slips away. Because of this, we easily end up in an atmosphere of charging for each nut and bolt. Not because we want to, but we simply have to do it" (CH).*

Further, CH4 faced an additional risk in converting the submitted project design into a definitive one, worsening the aforementioned risks of running out of time and running out of budget. In traditional forms of contract, the principal organization is responsible for making the construction drawings available to the contractors, so the construction firms can put a claim for lost income if the principal does not deliver on time. Conversely, in design-build procurement routes, as in the original *Houten - Houten Castellum project*, only the functional specifications belonging to a project are put out to tender, and the construction firms are invited to submit a draft project design. After the project has been assigned to a specific contractor, this organization has to convert the draft project design into a definitive one. The principal will check the design to see whether it corresponds with the prescribed norms and specifications agreed upon. The conversion process is often highly pressured since a delay in the start of constructing a project may lead to a fine, imposed by the principal organization, for not delivering on time. As mentioned above, this problem becomes more acute, because construction firms have, so

far, accumulated little experience in managing this process. As a Prorail respondent put it: *"In a design-build type of arrangement, the contractor is assumed to optimize the constructability of the project. At least, that is the philosophy. However, it is becoming increasingly clear that construction firms, so far, are not capable of managing the design-build concept properly. Their project management is often inadequate. We have a lot of experience; and we know that it is really heavy stuff" (PR).* Or, as a CH4 interviewee put it: *"We struggle with how to manage design-build contracts. We have to get used to a new workload, since 90% of the work to be performed has nothing to do with actually constructing an object" (CH).*

Consequently, in the original situation with the *Houten - Houten Castellum project*, both Prorail and CH4 faced the risk that the combination of construction firms might easily run into trouble as the project progressed. With traditional forms of contract the contractor would have been in a relatively comfortable position since most of the project risks are carried by the principal, enabling construction firms to lean back when problems arise. After all, if principal organizations do not succeed in making construction licenses and construction drawings available on time, they not only face the risk of a low bidding, extra work claiming, quality-shirking contractor, they also face the risk of construction firms putting in claims for lost income as a consequence of delays in construction. Therefore, in starting up a traditional project, a legitimate level of distrust regarding the intentions, in terms of benevolence and dedication, of a contractor can be maintained by the principal, while, for contractors there are equally legitimate reasons for questioning the principal organization's competences in conditioning the project adequately. Conversely, with the design-build procurement route, as in the original *Houten - Houten Castellum project*, the principal is in a relatively comfortable position, because the contractor faces most of the project risks. After all, since both the design risks and licensing risks are transferred to the contractor, the opportunities for a construction firm to make claims against the principal are greatly restricted. Consequently, if a project runs into trouble, their relationship easily becomes dominated by disputes since contractors are eager to attribute delays and/or cost overruns to factors beyond

their control, whereas the principal tends to blame the construction firms involved. This problem becomes more prominent when the project partners face risks that are difficult to manage adequately by either of the two, such as a municipality making difficulties with regard to granting licenses. Further, the interpretation and application of norms and specifications with which the contractor has to comply may become part of the discussion, since both the principal and the contractor are inclined to interpret these in favor of themselves. Therefore, in many design-build projects, a certain level of distrust on the side of a constructor can be expected regarding the intentions, in terms of benevolence and dedication, of the principal; while there are, simultaneously, legitimate reasons for principal organizations to question the contractor's competences in managing the project adequately. Given that a project running into trouble causes problems for all the organizations involved, especially when they face hard to control risks, this provides incentives to consider a partnering type of arrangement.

The project alliance risk profile

Since Prorail and CH4 faced the risk of their relationship running into trouble as the project progressed, they decided to convert the design-build contract they had already agreed upon into a project alliance type of arrangement. For this, they agreed upon an alliance contract and a construction contract. The alliance contract regulated activities for which Prorail and CH4 agreed to take joint responsibility, and the construction contract regulates activities to be performed by the CH4 construction firms. The alliance contract contains arrangements on managing (1) design activities, (2) control activities and (3) activities related to the alliance fund. This fund forms the budget of the alliance, and consists of Prorail's and CH4's design and management budgets, as well as their risk budgets. The alliance's design and management costs, as well as any emerging risks and contingencies, have to be met from this fund, but it can be boosted by savings achieved by optimizing the project design. At the end of the project, any positive or negative balance in the alliance fund will be equally shared between Prorail and CH4.

Consequently, in order to end up with a positive balance in the alliance fund, there is an incentive for both Prorail and the CH4 construction firms to establish a lean project organization, to seek out for design optimizations, and to tackle emerging risks and contingencies in close cooperation, rather than trying to blame each other. Whereas CH4 was originally responsible for managing the processes of obtaining the licenses required to construct the *Houten - Houten Castellum project*, *The Batavian Alliance* has now become responsible for this. Thus, Prorail has the opportunity and incentive to use its specific competences on applying for licenses, and the construction firms can directly input their knowledge in order to speed up this process since the information they hold about the way a project will be built is usually required to obtain licenses for constructing the project. Further, whereas in the original project situation CH4 was responsible for converting the submitted draft project design into a definitive one, now *The Batavian Alliance* has become responsible for doing this. Here, the construction firms still have the opportunity to bring in specific knowledge on how to achieve a constructable project, and Prorail can bring its competences on how to manage a design firm working on a project design. In this conversion process, both Prorail and CH4 will strive to optimize the submitted design since the alliance fund is topped up by any savings. For the construction firms, this is more opportune than claiming for extra work since half of any positive alliance fund outcome is returned to themselves: *"If we succeed in optimizing the design, the project becomes cheaper (…). Usually, construction firms earn 10% on claimed extra work. However, for this, they bear 90% of the costs. In an alliance, the project partners share any balance in the alliance fund. So, for the construction firms, there is no incentive to claim for extra work since they will be claiming from their own wallet" (PR).* Or, as a CH4 interviewee put it: *"We make money by not making costs (…). Whereas we are used to striving for extra work, in an alliance it is the reduced work that yields a profit" (CH).* Further, Prorail became willing to interpret and apply prescribed norms and specifications that CH4 would normally have to comply with less strictly, because this could result in alliance-fund-filling design optimizations: *"Usually, we are not*

allowed to deviate from norms and specifications. However, in an alliance, these are up for debate: 'Where do they come from, and how are they intended (…)?' Consequently, we have many more ways to look for design optimizations" (CH). Or, in the words of a Prorail representative: *"In an alliance, we nibble at the prescribed norms and specifications. Usually, we are not willing to do this, because it is not in our interest. However, since it is now a matter of money, also for us, we are actively looking for design optimizations" (PR).*

In order to make this incentive mechanism work, there have to be sufficient opportunities to optimize the project design. In the case of the *Houten - Houten Castellum project,* these possibilities are limited because Prorail and the municipality of Houten had already agreed how to integrate the original Prorail design into the master plan for the city centre. Conversely, there also have to be risks that are difficult to manage by one of the project partners, such as a municipality making difficulties with regard to granting licenses. As a Prorail interviewee stated: *"Here, the alliance concerns the deal breakers for a construction firm, with risks that may provoke the failure of a design-build project, but risks that we can control neither" (PR).* Or, in the words of two CH4 representatives: "*A project alliance is about hard to control risks. If you allocate these risks to one of the project partners involved, a relationship may become confrontational" (CH). "For both sides there have to be risks so that, if they are managed in close cooperation, all project partners gain from it" (CH).* In other words, an alliance fund has to be of a certain size to make the incentive mechanism work: *"If the financial volume of the alliance fund is too small, none of the project partners will really go for it" (PR).* And: *"All project partners have to benefit from doing things together (…). There has to be a common interest, so that if a project partner screws up the project he also spoils it for himself" (PR).* Here, another Prorail representative stated: *"When putting an alliance fund together, our focus has to be on possible leftovers (…). So, project partners have to include risks for which they really have to cooperate in order to counteract them adequately" (PR).*

The alliance negotiation processes

To create the alliance fund, both Prorail and the CH4 construction firms had to be open about their risk, design and management budgets during the alliance negotiation processes. In this regard, a Prorail representative remarked: *"You have to be willing to play your cards not too close to your chest. However, this is not something that we are used to in construction (…). In an alliance, the project partners have to ask themselves: 'What are the risks that threaten us?' All participants have to put their budgets on the table, so that they can agree on the amount of money they have to keep in reserve for countering future problems" (PR).* Usually, in traditional and design-build forms of contract, construction firms offer a fixed price, composed of the estimated building costs of a project, increased by a general cost percentage, a risk percentage and a profit percentage, decreased by any reduction offered in price. They are not used to giving detailed insights into the way their bid is built up, since this might be detrimental to their position later on. Therefore, in negotiating *The Batavian Alliance*, the CH4 construction firms were reluctant to be too open, because they faced the risk of terminated alliance negotiation processes. For Prorail, this was less problematic since the construction firms were being asked to price the project risks as defined by the Prorail organization itself earlier in the design-build negotiation processes. On the one hand, Prorail showed an understanding of the reserved attitude of the construction firms, because the negotiators had to be backed by their managing directors. On the other hand, Prorail considered this behavior as somewhat symptomatic: *"It is also about the way you operate (…). This behavior is more suited to negotiating traditional and design-build contracts, in which you have to keep things strategically in reserve. In a project alliance, you have to be much more open" (PR).* In the end, CH4 gave insights into the way the original design-build bid was built up, enabling Prorail and the construction firms to enter into *The Batavian Alliance*. Here, a Prorail interviewee stated: *"In an alliance, you really have to cooperate. Therefore, for us, the fact that they were willing to open up their notebook was an important go or no-go moment" (PR).* For the project partners, providing insights in each other's risk, design

and management budgets was not without consequences: *"In doing this, we advanced the moment that we normally quarrel about risks, from the moment that a risk becomes manifest to the moment that we enter into the contract (…). If we now face a problem, we do not have to quarrel about who has to pay for it because we have already done that. We can directly solve it" (PR).* In the words of a CH4 representative: *"In other projects, we select the last tree to hang. However, in this project, we opt for the first one" (CH).* Or, as another interviewee put it: *"Usually, we hypothesize on the most positive scenario. Subsequently, we face a lot of discussion when problems arise and the progress of the project becomes frustrated. Now, we have thoroughly discussed the grey project areas in advance (…), so we were able entering into a well-balanced contract" (CH).*

Summarizing, in the original *Houten - Houten Castellum project*, both Prorail and CH4 faced the risk of their relationship running into trouble as the project progressed. In the design-build contract situation, the construction firms faced the risk of delays, due to problems with obtaining construction licenses and the construction drawings required to construct the project. Because of this, and since the project was put out to tender during a downward economic trend, they also faced the risk of running out of budget. Here, external, relationship-exceeding, risks closely interact with internal, relationship-specific, risks since a contractor running into trouble also causes problems for the principal organization. This problem becomes more prominent when construction firms face risks that are difficult for them to manage adequately, since they will be inclined to attribute problems to factors beyond their control, whereas the principal organization tends to blame the organization of the contractor. Consequently, in the original *Houten - Houten Castellum project*, for both Prorail and CH4, there were legitimate reasons to question each other's competences and intentions. However, with *The Batavian Alliance*, the relationship between the project partners is expected to be smoothed by the creation of a common interest, since the balance of the alliance fund is shared between Prorail and CH4. Here, the project partners are challenged to tackle manifest risks, to manage design the conversion processes and

to look for design optimizations in close cooperation, instead of standing against each other. Although making themselves vulnerable to each other is not something that they do without reservations, in order to create an alliance fund, the project partners had to be open about their risk, design and management budgets.

5.4.3. Inter-organizational trust and control

In the previous section, we presented the perceptions of Prorail and CH4 representatives as to whether the initial conditions, in terms of the risks they faced both internal and external to their relationship, were conducive to trust. Now, we move to the adopted formal and informal forms of control, to see whether these complement, or substitute for, the levels of trust initially present in the project alliance. Since we have already discussed how the contract places a limitation on the opportunities and incentives to deviate, in this section our focus is on the monitoring system that the project partners use to determine whether anyone has deviated from the agreed contract. Further, we discuss the ways in which Prorail and the CH4 construction firms reduce goal ingruence and preference divergence, so that any inclinations to deviate are discouraged.

The adopted monitoring system

In many traditional forms of contract, principal organizations come up with a project design, and subsequently employ their own engineers to oversee and inspect the construction work performed by the selected construction firms on an ongoing basis. This is because they are vulnerable, both to design deviations and quality defects, since contractor organizations are not only used to strive for extra work, they may also replace high-quality materials with cheaper, lower quality ones. They can even hide mistakes, since they face enormous costs if they have to rebuild part of a project. In this regard, a Prorail-interviewee stated: *"If we do a random quality check, we usually come across a lot of mistakes. Construction firms are inclined to hide mistakes, since they might think 'how can I get out of this' if something is wrong with the quality" (PR).* However, such a hierarchical relationship may

counteract the natural development of a relationship based on reciprocity, since their supervisory position may cause principals to adopt overly suspicious attitudes towards contractor organizations which may become self-fulfilling prophecies: *"Principal organizations often behave hierarchically: 'We charge construction firms with what to do'. However, this implies that many of them do not feel treated as equals" (PR).* So, while principal organizations may interpret all change suggestions from contractors as coming out of self-interest rather than motivated by concern for the project, closely-monitored construction firms can reciprocate by behaving in a way the principal organization has to try to protect itself against. Conversely, in the design-build procurement route, the principal organization is more at a distance. A Prorail-representative: *"We have adopted a downsizing-philosophy, which not only means that we do not come up with the project design, but that we also monitor as little as possible (...). To guarantee that we get what we want, we, among other things, use assurance firms. They ensure the quality by employing engineering firms to check the project design and monitor the construction work" (PR).* In *The Batavian Alliance*, the alliance management team has become responsible for controlling CH4's construction processes and products in order to ensure that the quality corresponds with the norms and specifications agreed upon. Although it could be seen as the traditional principal-contractor type of relationship, the project partners decided to adopt the design-build way of monitoring, since the *Houten - Houten Castellum project* was put out to tender as a design-build form of contract. Therefore, in order to ensure the quality of the design and construction of the sand foundation, an engineering firm was brought in, whereas another one was contracted to check the design and construction of the tunnels, underpasses and stations: *"The first supervises the construction firms to check whether the ten cubic metres of sand they have charged for correspond with the amount of sand actually delivered (…). To ensure the quality of the construction items, we receive a guarantee label, which is only granted when the latter gives a so-called statement of no complaints. Further, since the working methods of CH4 are ISO-certified, they also have to prove, themselves, that the quality delivered corresponds with what was agreed" (PR).*

Within the alliance management team, the design manager oversees the design processes. In this, among other things, he supervises the design firm working on the construction drawings. The construction manager focuses on controlling the product and process performance of the CH4 construction firms. In this, among other things, he supervises the engineering firms. Together with the alliance manager and the environment manager, they are challenged to realize the *Houten - Houten Castellum project* within the time, budget and quality constraints the project partners have agreed. Here, since the alliance manager is also the contract manager on behalf of Prorail, he has a double role: with his alliance cap on, he strives for the interests of *The Batavian Alliance* whereas, with his contract manager cap on, he simultaneously has to look after the interests of Prorail: *"From an alliance perspective, it could be financially interesting to deviate from the norms and specifications we should comply with. However, we have to hand over the project to the maintenance department of Prorail when we have finished it. They are also experts in rail construction work, so they will not accept the construction work if they do not agree with the quality of the project" (PR).* Since the construction manager is also the project manager of CH4, he also holds a double role: with his alliance cap on, he strives for the interests of *The Batavian Alliance* whereas, with his CH4 cap on, he has to look after the interests of the construction firms at the same time: *"Usually when the principal is too late with his inputs, we would put in a claim immediately (…). However, if we now put in a claim, we have to pay half of it by ourselves because of the alliance fund" (CH).* Thus, for both sides, there are mechanisms that encourage Prorail and CH4 to manage opposing interests in a balanced way. In this regard, although there are still opportunities for the construction firms to conceal work, or to replace high-quality materials with cheaper, lower quality ones, a CH4 representative stated: *"In an alliance, the challenge for the project partners is to adopt an attitude of collaboration, far more than playing games. After all, if one of us runs into trouble, we have to help each other to find a solution. Since we have a common interest, we simply cannot pressurize our relationship" (CH).* Or, as another CH4 interviewee put it: *"We cannot cheat, since that would be counterproductive. We have to be*

able to look each other full in the face" (CH). The same is true for the relationship between the alliance management team and the CH4 construction firms: *"Usually, contractors are inclined to hide mistakes, since they have to find solutions for quality issues by themselves. In this, they often struggle with principals who adopt a suspicious attitude. However, here they now face an organization that is really willing to help in solving problems" (PR).* In this regard, a CH4 representative stated: *"To ensure that we do not do things behind each other's back, the relationship between the alliance manager and the construction manager is key (…). They have to appreciate one another, while they also need a certain room to manoeuvre. If hierarchic bosses steer too much, then their relationship will certainly run into trouble" (CH).* In line with this, a Prorail interviewee argued: *"They have to be clear to their boards of directors so that they do not let themselves be pressurized. The alliance management team has been given the authority to manage the project. Therefore, they have to look after themselves and they certainly do not have to consult their directorates continuously" (CH).* For both Prorail and CH4 employees this is not without consequences: *"One of the things I like most is that we deal with each other more as equals. The principal comes out of his ivory tower and the contractor is no longer the oaf doing the dirty job" (CH).* Or, in the words of a Prorail representative: *"In many projects, the relationship between principal and contractor organizations is a hierarchical one. In an alliance, we are able to create a level of equivalence" (PR).*

Thus, the traditional procurement route tends to produce behaviors that contradict what is required for a cooperative, trustful relationship. While the initial conditions of a project may bring about legitimate levels of distrust on the principal's side, due to the opportunities and incentives for construction firms to claim for extra work, to shirk on quality, or to hide mistakes, the ways adopted for monitoring may further worsen relationships, since they tend to become self-fulfilling prophecies. After all, closely monitored contractors, not feeling that they are treated as equals, may reciprocate by behaving in the way the principal organizations try to protect themselves against. The same holds true for design-build types of arrangement, although here the principal organization is more at a

distance since most of the monitoring activities are transferred to engineering firms. The data show that, within *The Batavian Alliance*, although there are still opportunities for the construction firms to deviate from what the project partners agreed, establishing and maintaining a cooperative relationship with the principal organization is far more prominent. In this regard, representatives of both Prorail and CH4 indicate that, since they need each other to counteract manifesting risks and future problems, there is no incentive for them to endanger their relationship by adopting an opportunistic attitude.

The relationship investments

As mentioned before, in *The Batavian Alliance*, the challenge for Prorail and CH4 is to tackle appearing risks, to manage the design conversion processes and to look for design optimizations in close cooperation, instead of opposing each other. However, the data also suggest that this is not something that they do without reservations. In this regard, a Prorail interviewee stated: *"Each form of contract has to be accompanied by a certain type of behavior. Therefore, in adopting a certain type of arrangement, you have to be very conscious about the people employed" (PR).* Since Prorail and the CH4 construction firms are more familiar with traditional and design-build forms of contract, in which there are often legitimate reasons to question each other's competences and intentions, the selection of alliance employees and managers requires special attention: *"Not all our people can work within an alliance, and the same is true for the employees of the construction firms involved. You might wonder whether very experienced project managers, well-seasoned in playing games, are the most appropriate team members to work with" (PR).* Or, as a CH4 interviewee put it: *"If you have always worked on traditional and design-build projects, you really have to change your working methods, because the way you now have to deal with Prorail is totally different" (CH).* Since working in an alliance is a matter of being led by a common interest, the project partners need to select employees who are able to act accordingly: *"We need people who are able to refrain from 'self-interest first'. Within an alliance, you really have to cooperate, which means that the project partners have to take an accommodating*

attitude" (CH). In this regard, a Prorail interviewee stated: *"If you are naturally suspicious, you will have difficulties operating in an alliance. If you are a control freak, your place is not here (…). We need open people, not narrow-minded ones. Keeping everything under control is fatal for making the alliance incentive mechanism work" (PR).* Or, in the terms of a CH4 representative: *"An alliance is a matter of really doing things together (…). I can imagine that some people cannot work within an alliance, because they are not able to adopt a collaborative attitude" (CH).*

Although the selection of employees deserves special attention in making the alliance incentive mechanism work, this is not something that project partners can do without any limitations. Since principal organizations and construction firms usually handle a portfolio of construction projects, the opportunities to select appropriate team members are somewhat limited. Here, a Prorail-representative stated: *"You start working with the people put at your disposal, with the team members employed by the project partners involved. Consequently, it might be that some of them do not fit within the alliance (…). However, if this is so, you can consult their managing director and ask whether it is possible for them to be replaced" (PR).* In this regard, a CH4 interviewee said: *"Usually, the number of people available is limited. I am not an advocate of sending people from pillar to post. I start thinking about replacing people only after serious incidents" (CH).* This problem often becomes more prominent since contractors are inclined to bring in their best team during the negotiation/procurement phase of traditional and design-build projects, whereas the team employed for executing/constructing the project is rather different: *"After gaining the contract, the outstanding team moves on to another project, and we face an entirely new one on the construction site, one not acquainted with what we agreed (…). However, especially in the case of an alliance, it is important that the appropriate people involved in compromising the contract details also participate in constructing the project since they are familiar with the line of thought. Otherwise, you face the risk of an employee thinking: 'I do not know what they agreed, so I will continue working like I have for 25 years" (PR).* In this regard, another Prorail representative remarked: *"It is*

rather foolish to change people, because new team members are inclined to question what we agreed earlier, which only creates problems" (PR). Thus, within an alliance, the principal organization and the construction firms not only have to be conscious about staffing the project, they also have to be aware of losing alliance commitment by changing people when moving into the execution/construction phase.

However, the data show that even appropriate project staff selection does not automatically mean that the people involved adopt an attitude of collaboration. Although the alliance has its own targets, in terms of planning and budget, it is not inevitable that the project partners strive for these goals cooperatively. Since organizations involved in construction may import working methods from traditional and design-build types of arrangement, which, as we have seen, might be detrimental to an alliance, Prorail and the CH4 construction firms had to put substantial effort into making their employees familiar with the alliance way of working. Here, a CH representative stated: *"It is a difficult task to get the people involved to think appropriately (…). This problem is complicated since the relationship between employees from principal organizations and from contractor firms is usually tense because of experiences in traditional and design-build projects" (CH).* Or, as a Prorail interviewee put it: *"It is not only important to select the right employees; you also have to pay attention to the way these people work together (…). They have to get to know each other, and they have to get to know the alliance working methods" (PR).* In this regard, it might even be that people employed in an alliance need to unlearn behavior usually demonstrated within traditional and design-build projects. In early phases of *The Batavian Alliance,* this seemed to be especially true for the CH4 construction workers: *"They keep on thinking in terms of accountability, and only of complying with prescribed norms and specifications (…). However, in my opinion, we have to fix the project together, which means that we have to solve all kinds of problems in collaboration" (PR).* Or, as a CH4 representative stated: *"The construction workers see the alliance too much as the principal organization. Officially, they are right but, since we participate in the alliance as well, they have to work differently (…). I am continuously trying to make it clear to them that the balance of the alliance fund will*

be shared, so that it is disadvantageous to spend money unnecessarily" (CH). Here, the data suggest that, with regard to this, it really made a difference that the project partners became housed in the same building: *"During the first months, we had our own place of work, which was rather counterproductive. Since we have been commonly housed, we see each other more often, so it becomes much easier to cooperate" (PR).* In line with this, a CH4 representative stated: *"Now, we really pull together. In traditional or design-build forms of contract, we see each other only during official meetings in which everybody can put on a mask (…). However, since we are housed in the same building, we come across each other the whole day, so openness comes naturally" (CH).* Or, as another CH interviewee argued: *"Since the alliance management team and the construction workers are housed in the same building, the atmosphere is much more open (…). You can walk downstairs if you have any questions, or vice versa" (CH).*

Summarizing, whereas in many traditional and design-build types of arrangement initial levels of distrust, together with an ongoing supervision of the construction work, easily cause vicious cycles of distrust to arise, the dynamics between principal and contractor organizations in an alliance form of contract are totally different. Although there are still opportunities for construction firms to deviate from what the project partners agreed, a desire to establish and maintain collaborative relationships with principal organizations seems to be far more prominent, since project partners have to counteract manifesting risks and future problems in close cooperation rather than standing against each other. However, the data show that, within *The Batavian Alliance*, it is not inevitable that project partners adopt a collaborative attitude. This is because employees may import behaviors they have experienced in traditional and design-build forms of contract, which are detrimental in an alliance. Hence, the benefits of working together do not necessarily match the inclination to cooperate. Therefore, both Prorail and CH4 indicate that they not only have to staff the project appropriately, they also need to put substantial efforts into making clear to their employees that they should adopt an accommodating attitude.

5.4.4. Inter-organizational trust, control and performance

In the previous sections, we deduced the perceptions of Prorail and CH4 representatives as to whether the initial conditions of the *Houten - Houten Castellum project*, in terms of the risks they faced, both internal and external to their relationship, were conducive to trust. Further, we presented the adopted formal and informal forms of control in order to see whether these complement, or substitute for, the levels of trust initially present in *The Batavian Alliance*. Now, we move on to the influence of the project's performance on the development of trust between the project partners involved. Here, our focus is on both the outcomes achieved within this rail construction project as well as the relational quality underlying these outcomes.

The project's progress

The data show that, within *The Batavian Alliance,* the risks that led Prorail and CH4 convert the design-build type of arrangement they had agreed upon into a project alliance form of contract became manifest as the project progressed. That is to say, in starting the construction work, the project partners struggled to comply with the demands of the municipality of Houten in obtaining the licenses required to construct the project. Further, it became clear that, in the process of converting the submitted project design into a definitive one, the design firm had difficulties with providing CH4 with the correct drawings on time. Finally, the construction firms faced problems with the process of driving piles in the Houten city centre. Thus, in the original *Houten - Houten Castellum project* set up, the project would not only have become delayed, as a consequence of this, the combination of construction firms also faced the risk of overrunning the budget, all the more so since they had put in a relatively low bid in order to win the contract. Because of this, the relationship between Prorail and CH4 would, probably, have become confrontational. After all, whereas in traditional types of arrangement the contractors tend to take a reserved attitude in contributing to solving problems, construction firms running into trouble in design-build forms of contract give, conversely, principal organizations reasons

to lean back since most of the project risks fall on the contractors involved. However, the contractor organizations, subsequently, may not have felt taken seriously since, for instance, a municipality causing difficulties with regard to granting licenses is difficult to manage adequately. Thus, in the original *Houten - Houten Castellum project* situation, the project partners would not only have been confronted with a project running out of time and budget, they also faced the risk of opposing each other.

Conversely, the data show that, within *The Batavian Alliance,* Prorail and CH4 worked together to obtain the licenses required to construct the project since they both had an interest in keeping the project running. In this regard, although the opportunities to optimize the project design turned out to be limited, by enforcing delivery dates and by sharing all their calculations, the project partners also opted to manage the design firm more tightly. Furthermore, both the principal and the contractor organizations actively sought technical solutions for the problems they faced in the process of driving piles in the city centre of Houten. Since the project partners were, nevertheless, confronted with a delay in realizing the project, they also looked into the possibilities of altering the overall planning of the project so that the project delays did not increase: *"We were slightly behind the planning, which was more problematic then one might expect since the completion milestones of this project are linked to rail traffic standstill periods on adjacent projects" (CH).* Here, another CH4 interviewee stated: *"Usually, we would have been fined because we were not able to conform to what we had agreed upon (…). However, in this project, our penalty clauses are put at zero, because the principal organization is part of the alliance. This does not mean that we can complete the project whenever we want. Since rail construction work is a public issue, we cannot allow ourselves to be too late in finishing it" (CH).* Therefore, in finding a solution to the delay they were confronted with, the project partners decided to delay the completion date for the western part of the *Houten - Houten Castellum project,* while the overall completion date for the project would remain the same. This implies that less time would be available for constructing the eastern part of the project. Considering this, a Prorail representative remarked: *"Such*

a solution provides us with a possibility to move on. This is important, since the risk of running out of time declines, and so does the risk of running out of budget" (PR). Or, as a CH4 interviewee put it: *"Usually, our relationship would have been in trouble. However, since we are in an alliance, we can better deal with the risk of running out of time. Because of this, we also save money, since we do not have to take extra measures in order to catch up" (CH).* In this regard, a Prorail representative stated: *"Considering the outcomes of this rail construction project so far, I expect that we will end up with a positive balance in the alliance fund, although it will not be an enormous success. After all, the opportunities to optimize the project design are limited, and we also have to get over the process stagnating" (PR).* In the words of a CH4 interviewee: *"I expect the project to yield a profit, especially since it turned out to be that, in starting up the project, we were able to proceed" (CH).*

Thus, although the risks that motivated the project partners to enter into an alliance form of contract did manifest themselves, as we have seen, the principal and contractor organizations still had confidence in completing the project within the planning and budget constraints they had agreed upon. This is above all because this partnering type of arrangement enabled them to keep the project running, instead of bringing the project to a standstill due to disputes about who was responsible for solving arising problems. As such, the data show that it is not so much the outcomes of the construction project, but rather the relational quality underlying these outcomes, that is part of the project partners' performance evaluation.

The quality of the relationship

Since both Prorail and the CH4 construction firms are challenged to tackle manifesting risks, to manage design conversion processes and to look for design optimizations cooperatively, instead of confronting each other, the data show that it are exactly the efforts demonstrated with regard to this, that contribute to the development of trust: *"Will the project partners do their best, especially if we face any problems, or is one of them inclined to lean back, as we see in many traditional and design-build forms of contract?" (CH).* Or, as a Prorail

representative put it: *"It is important that we take steps together, not only with respect to the processes of obtaining licenses and converting the project design into a definitive one, but also regarding the problems we face in constructing the project" (PR).* Therefore, whereas in many traditional and design-build types of arrangement, depending on which of the project partners carries the risk, either the principal organization or the construction firms tend to take a reserved attitude, in an alliance, *"all project partners have to show their dedication and benevolence. If we now face a problem, we are challenged to be open about it, since we both take an advantage of solving it adequately (…). However, this is not something that we do without reservations, since the relationships between principal organizations and construction firms are usually tense" (CH).* Thus, although an alliance is based on being led by a common interest, which serves as a stimulus to be open to one another about relevant issues, this does not automatically mean that the project partners adopt the corresponding attitude from the start. In the words of a CH4 interviewee: *"You have to be open, especially about the problems you face. However, for this, we have to trust each other to some extent" (CH).* Here, a Prorail representative stated: *"An alliance is a matter of trust; otherwise the cooperation will never get off the ground. However, for trust to arise, you have to take a vulnerable position yourself first so, that your project partners, subsequently, can demonstrate their trustworthiness by not abusing your openness. Further, you also have to show your own reliability, and you have to be successful together" (PR).* In other words, the data show that the openness required in an alliance form of contract, presumes that the project partners trust each other to some extent. However, since trust comes simultaneously with the showed dedication and benevolence in realizing the project, the project partners actively need to make themselves vulnerable to each other, while simultaneously finding out whether their openness is respected or violated. This does not mean that they have to increase their vulnerability or all at once by exposing themselves to the uncertain actions of, unfamiliar, partner organizations: *"We cannot expect each other to be completely open all of a sudden, all the more so since we are used to opposing each other. Therefore, it is more a matter of gradual steps" (CH).* This means that

relatively small stakes are initiated, while the degree of vulnerability is incrementally increased. This becomes, as we have seen, easier, if the interests of both project partners are more or less common. Here, a CH4 representative stated: *"In fact, it is a matter of just doing it. Be honest and stay away from playing games. If your project partner does the same, then you create the feeling of really doing it together" (CH).*

The data show that, in finding out how far each other's trustworthiness extends, both Prorail and the CH4 construction firms had to demonstrate commitment to, and motivation for, the project, instead of striving only for their own interests, as in many traditional and design-build forms of contract. Here, the focus is especially on the decision-makers since *"the alliance game is played by a limited number of key figures, because they have to deal with sharing any balance of the alliance fund" (PR).* From a principal organization's perspective, as we have seen, especially the construction manager had to show his loyalty to *The Batavian Alliance*. Here, a Prorail interviewee stated: *"So far, the construction manager does not only pursue the interests of the construction firms. He also makes decisions from which both of us can take an advantage. And, if he faces a dilemma, he makes it known. For me, he has demonstrated that he is trustworthy" (PR).* From a construction firm's perspective, especially the alliance manager had to prove that he is not just a Prorail person: *"Within an alliance, all project participants look at the alliance manager (…). He has to stand firm for the interests of the alliance, and he has to radiate that it will be a success. Up to now, he has taken the corresponding attitude, provoking us to put our shoulder to the wheel as well" (CH).* Or, as another CH4 representative put it: *"The alliance manager is a very brave man (…). If he was a weakling, the whole process would have become much more complicated" (CH).* And: *"He operates very straightforwardly. I have no doubt about him. So far, I could not catch him giving preference to his employer. He has shown that he can operate independently" (CH).* Thus, in an alliance, for trust to arise, the project partners not only actively need to make themselves vulnerable, they also have to demonstrate that they do not abuse each other's openness by striving only for their own interests.

In this regard, the data show that, it is important for project partners to keep the project's economics transparent to all the organizations involved: *"Within an alliance, you can make money by trusting each other. However, for this, you have to be transparent in dealing with each other" (PR).* Here, a CH4 interviewee stated: *"To inspire confidence, it is important to keep the performance of the project clear, not only financially, but also with regard to the planning of the project, so that the project partners cannot later disagree about the outcomes" (CH).* In this regard, a Prorail representative remarked: *"For this, it turned out to be helpful that we made use of a common administrative system, instead of using our own. Now, we are challenged to deal with any uncertainties immediately, instead of quarreling about it until we have finished the project" (PR).* Thus, although a common interest is a powerful motivator for being open, for trust to arise, it makes a difference if the project's progress is unarguable for the organizations involved. Here, as the data show, it also made a difference that the principal and contractor organizations worked closely with one another while realizing the project: *"Since we are in an alliance, we have become a sort of principal ourselves, and this has given us a lot of insights into how these organizations usually think and feel" (CH).* In the words of a Prorail interviewee: *"In sliding our working methods into each other, we really had to put ourselves in the shoes of the construction firms (PR).* In this regard, another CH4 interviewee stated: *"The consequence is that we are more committed to one another. Now, we see each other's problems, each other's happiness, and each other's sorrow. We empathize with one another, which breeds understanding" (CH).* Or, as another one put it: *"Usually, I am rather suspicious. However, this has become nuanced. Now, I have gained insights into the problems principal organizations often face, so I understand in more depth what they normally struggle with" (CH).*

Summarizing, the data show that, in an alliance, it is not so much the performance of the project, in terms of budget and planning outcomes, but rather the relational quality underlying these outcomes that contributes to the development of trust. Since the principal and contractor organizations are challenged to counteract manifesting risks

cooperatively in order to end up with a positive balance in the alliance fund, it are precisely the efforts demonstrated with respect to this that serve as an important source of trust. However, for this to occur, the project partners have to be open about relevant issues while both conditioning and constructing the project. Since this is not something they are used to, as we have seen, they actively need to make themselves vulnerable to each other. Here, for trust to arise, it is crucial for the project partners to show that they are actually aiming for the interests of the alliance, rather than striving for their own. By demonstrating commitment to, and motivation for, the project, they may reduce possible doubts about whether they will give in to any temptations to deviate. For this, in the alliance studied, it appeared to be helpful that the project partners agreed upon transparent project finances, and that they empathized with one another through sliding their working methods into each other.

5.5. Concluding remarks

This chapter has discussed how inter-organizational trust develops over time in an alliance form of contract. Our focus has been on the relationships between trust and the risks that the project partners face both internal and external to their relationship, on the formal and informal forms of control they make use of, and on the actual performance of the project, both in terms of outcomes achieved as well as the relational quality underlying these outcomes. Further, we have stressed how the dynamics of trust as seen in this partnering type of arrangement differ from the deteriorating patterns of behavior the principals and contractors often face in both traditional and design-build forms of contract so the alliance stands out in this wider picture.

The data show that the initial conditions established in construction projects are of key importance in the development of trust between principals and contractors. In many traditional forms of contract, principals struggle with conditioning a project adequately since they have to provide contractor organizations, on time, with a project design and with the licenses required to construct the project. At the same time, contractors, due to their low bid, often adopt an

opportunistic, mistake-hiding, quality-shirking, extra work-claiming strategy, so that the principal organization usually faces most of the project's risks. Consequently, in starting up traditional projects, legitimate levels of distrust regarding the intentions of contractor organizations, in terms of benevolence and dedication, can be justified by the principal, while there are also good reasons for contractors to question the principal organization's competences in preparing the project for construction. Conversely, in design-build forms of contract, where contractor organizations become responsible for the project design and the construction licenses, this puts a limitation on their opportunities and incentives to make claims against the principal organization. Since the principal has no interest in allowing contractors to deviate from the prescribed norms and specifications, the contractors now face most of the project risks. Consequently, in starting up design-build projects, there are legitimate reasons for contractors to doubt the dedication and benevolence of the principal organization, while the competences of contractor organizations in preparing the project for construction may be seen as questionable by the principal. These problems become more prominent when the project partners face risks that are hard for either of them to control. Here, as is illustrated by our case, a project alliance becomes attractive since in this type of arrangement both the principal and the contractor are responsible for conditioning the project, and they are also challenged to counteract manifesting risks cooperatively, rather than standing up against each other. For this to work, in the alliance studied, the project partners agreed to set up an alliance fund, which was, among other things, made up of both their conditioning and risk budgets. The costs incurred in preparing the project for construction as well as in reacting to the risks had to be paid out of this fund, while it was topped up by design optimizations the project partners could agree upon. Since any positive or negative balance of the fund was shared between the principal and contractor at the end of the project, there is an incentive for both project partners to use their competences dedicatedly and benevolently, instead of trying to shift risks to each other. As such, compared to traditional and design-build forms of contract, the data show that in an alliance the initial conditions of a

project are not only more conducive to trust, but that the development of trust also becomes a necessity since the project partners have to construct the project in cooperation.

The adopted type of alliance arrangement not only brings about a certain incentive structure, the project partners also make use of different types of monitoring systems to determine whether anyone is deviating from the agreed contract. In many traditional procurement routes, principals may use their own employees to monitor contractors on an ongoing basis, because of the many opportunities and incentives to hide mistakes, shirk on quality, or claim for extra work. However, closely monitored contractors, not feeling treated as equals, may reciprocate by behaving in just the way that principals are trying to protect themselves against. The same holds true for design-build forms of contract, although the principal is more at a distance here, since most of the monitoring activities are transferred to engineering firms. So, in many of these projects initial levels of distrust, going hand in hand with ongoing inspections of the construction work, easily cause vicious cycles of distrust to arise. Conversely, in an alliance, although there are still opportunities for contractors to deviate from what agreed upon, establishing and maintaining a cooperative relationship with the principal seems to be, as the data show, far more important. Since the project partners have to construct the project cooperatively, the potential costs of putting their relationship in danger really outweigh any short-term advantages of acting in a distrustful manner. However, as we have seen, this is not something that principals and contractors do without some reservations, especially since their employees may import behaviors from traditional and design-build types of arrangement with which they are more familiar. Therefore, project partners not only need to take care in selecting appropriate project staff, they also have to put substantial effort into making clear to their employees that they should take an accommodating attitude, i.e. they need to behave dedicatedly and benevolently, instead of assuming an opportunistic attitude. Since the incentive of working together does not necessarily keep up with the inclination to cooperate, it is far from automatic that in an alliance virtuous cycles of trust will arise.

In this regard the data show that in an alliance it is not so much the performance of the project, in terms of budget and planning outcomes, but rather the relational quality underlying the performance that contributes to the development of trust. After all, whereas in many traditional and design-build types of arrangement, either the principal or the contractor organization tends to lean back with regard to counteracting manifesting risks, in an alliance it are exactly the efforts demonstrated with respect to such events that serve as an important source of trust. However, for this to occur, the project partners have to be open about relevant issues while conditioning and constructing the project which is, as we have seen, not something that comes naturally. Therefore, for trust to arise, the project partners actively need to make themselves vulnerable to each other, while simultaneously testing whether their openness is rewarded or violated. Here, the data show that it is crucial for both principals and contractors to show that they are actually aiming for the interests of the alliance, rather than striving for their own. After all, by demonstrating loyalty to the project, organizations may reduce possible preference divergences and goal incongruences of their project partners. As we have seen, these doubts can be further diminished if employees from the principal and contractor organizations empathize with each other, which goes hand in hand with harmonizing their working methods. For this to occur it is helpful if the project partners are housed in one building and use a common administrative system which makes the progress of the project, in terms of planning and budget outcomes, transparent to all the organizations involved.

Summarizing, we conclude that is it possible to establish and maintain cooperative, trusting relationships between principal and contractor organizations in one-off partnering projects. So, partnering success does not necessarily require a project-exceeding process of cultural change that can only develop over a longer period of time, nor a horizon of shared interests exceeding the duration of a single project. However, for this, as the data show, it is not enough for project partners to agree upon an appropriate incentive structure. For trust to arise, they also have to put substantial efforts into diminishing the remaining inclination to make use of opportunities to deviate, all the

more so since employees from both sides might be inclined to import working methods learnt from traditional and design-build projects. As such, an elimination of legitimate levels of distrust appears to be a necessary, but not a sufficient condition for trust to arise. Principal and contractor organizations also need to ensure - by demonstrating relationship-preserving behavior - that their project partners feel confident that they will not give in to any temptation to deviate.

Chapter 6

Conclusions and discussion

6.1. Introduction

Although, in the last few decades, much effort has been devoted to understanding into more detail trust and its specific role in the governance of inter-organizational relationships, the need to come to a better contextualized understanding of the dynamics of inter-organizational trust is increasingly advocated (e.g. Bijlsma-Frankema and Costa, 2005; Van de Ven and Ring, 2006). This is because researchers have, so far, mainly theoretically discussed, but rarely empirically explored, how and why trust between business partners develops over time. In this thesis, our focus has been on processes of inter-organizational trust development in the specific context of the construction industry. This project-based industry is of particular relevance in studying the dynamics of trust because its inter-organizational relationships are often criticized for being adversarial and conservative (e.g. Kadefors, 2004; Noorderhaven et al., 2006; Bresnen, 2007). In order to overcome the inefficient, deteriorating patterns of behavior that principal and contractor organizations often face in many traditional and design-build contracts, partnering types of arrangement are increasingly advocated. However, establishing and maintaining cooperative, trusting relationships in these forms of contract is not something that business partners do without reservations due to the specific characteristics of the construction industry. Therefore, we formulated our central research question as: *Which factors are, in what manner, involved in processes of inter-organizational trust development, particularly in the project-based context of the construction industry?*

6.2. Conclusions

To guide the study in answering the central research question, four derived research sub-questions were formulated, corresponding to four subsequent research phases. This section summarizes the most important conclusions. We discuss the contribution of our study to both theory and practice, as well as its limitations, in the subsequent section. We conclude with the notes for future research.

6.2.1. Research question 1

The purpose of setting and answering the first research sub-question - *What is inter-organizational trust?* - was to provide insights into the most recent understanding of inter-organizational trust. In Chapter 2, by reviewing the literature, we concluded that, on the side of the trustor, trust has rational reasons as well as psychological causes. It can be aimed at the competences, as well as at the intentions, of a trustee. Whether trustees intend to use their competences depends on the opportunities and incentives for deviant behavior as well as on their inclination to deviate from what agreed upon (Nooteboom, 2002). In this regard it has been presumed that, early in a relationship, trust will be based on a conscious estimation of a partner firm's trustworthiness. As a relationship develops, trust becomes more personalized and less deliberate, so that feelings of personal attachment and tacit mutual understanding arise. Consequently, when trust is reciprocated, there is a possibility of an upward spiral of trust, yielding less occasion for mistrust to arise. However, the converse may also easily apply (Vlaar et al., 2007). It has been argued that business partners import expectations from settings with which they are familiar, if they do not have the time to engage in lengthy processes that contribute to the development of trust in more enduring forms of organization. This is especially true for inter-organizational relationships in project-based industries, where time pressures hinder organizations in developing trust from scratch (Meyerson et al., 1996).

6.2.2. Research question 2

The purpose of setting and answering the second research sub-question - *What is the role of trust in the governance of inter-organizational relationships?* - was to provide insights into factors that influence the processes of inter-organizational trust development. In Chapter 3, by reviewing the most recent literature, we concluded that trust closely interrelates with control in counteracting the risks that business partners face, both internal and external to their relationship (Das and Teng, 2001). Trust reduces the perceived levels of risk without doing anything about the actual levels of risk, whereas control is seen as a more interventionist approach, limiting the opportunities and incentives for deviant behavior - by formal forms of control - as well as the inclinations for a partner firm to deviate from what agreed upon - by informal forms of control (Nooteboom, 2002). In this regard, it has been proposed that trust and control are inversely related, while it has also been argued that they are mutually reinforcing (Costa and Bijlsma-Frankema, 2007). Here, the underlying question is how partner firms arrive at positive expectations of each other (Möllering, 2005a). Business partners may update their levels of trust and bring about changes in the forms of control they have previously adopted, based on the actual performance of their relationship. Since they are inclined to be more open to expectancy conformation, than to expectancy denial (Weick, 1995), the initial conditions of an inter-organizational relationship may have disproportionate effects on the subsequent development of trust between partner firms (Ring and Van de Ven, 1994). Based on these insights, we derived a theoretical framework that could be used for studying factors involved in processes of inter-organizational trust development.

6.2.3. Research question 3

The purpose of setting and answering the third research sub-question - *What are levels of inter-organizational trust in construction projects, and how are these influenced by certain specific situational variables?* - was to provide insights into the trust actually present in construction projects regarding to several project characteristics. Our

data show that perceptions of project-exceeding cooperation between principals and contractors, not only on an organizational level, but also on a project manager level, strongly influence trust. With regard to the working history, it appears that the personal involvement of project managers is of significant influence on the levels of trust in construction projects. With regard to the prospects of working again, it appears that an expected future cooperation on an organizational level also has a significance influence on the level of trust in a construction project. Further, we have seen that, from a principal organization perspective the tender procedure used and the contract form adopted, do not have a significant influence on the levels of trust in construction projects. This does not hold for contractor organizations, since for those direct invitations and non-traditional contracts are associated with higher levels of trust. Finally, our data show that, from a principal organization perspective, problems regarding extra/less work, as well as handling of complaints are of significant influence on the levels of trust in construction projects. Contractor organizations indicate that instead of handling complaints, problems with regard to the completion date of the project, the people employed, the supply of information and the payment terms influence the level of trust within a construction project.

6.2.4. Research question 4

The purpose of setting and answering the fourth research sub-question - *How does inter-organizational trust develop over time in a partnering project?* - was to provide insights into factors involved in establishing and maintaining cooperative, trusting relationships between principal and contractor organizations in the construction industry. In Chapter 5, by conducting an extensive, longitudinal case study on an alliance form of contract, we concluded that whereas in many traditional and design-build types of arrangement legitimate reasons arise for project partners to doubt each other's intentions and competences, the initial conditions of this partnering form of contract are more conducive to trust. This is, as the data show, because there is an incentive for principal and contractor organizations to cooperatively

realize the project, and to counteract manifesting risks, instead of assuming an opportunistic attitude. Under these circumstances a suspicious attitude is counterproductive. Therefore, project partners do better to invest in an atmosphere that will reduce any inclination to deviate. The reason that these investments are important is that organizations to an alliance form of contract are accustomed to traditional and design-build types of arrangement. Hence small defective actions may slip in almost automatically, or, and this leads to the same effects, a suspicious attitude may find signals of betrayal even where no defection exists. Consequently, for trust to arise in an alliance, principal and contractor organizations need to make themselves vulnerable to each other while simultaneously finding out whether their openness is reciprocated or violated. Here, as we have seen, the showed commitment to, and motivation for, the project serves as an important source of trust. So, based on our case study, we conclude that, in order to establish and maintain cooperative, trusting relationships between principal and contractor organizations in one-off partnering projects, it is not sufficient to eliminate legitimate levels of distrust by means of an alliance contract. Project partners also need to ensure, by demonstrating relationship-preserving behavior that they will not give in to any remaining temptation to deviate.

6.3. Discussion

As mentioned in the foregoing section, our focus has especially been on processes of inter-organizational trust development in an alliance form of contract. For this, since trust does not operate in isolation, we not only untangled the complexity of the inter-organizational trust phenomenon, we also derived a theoretical framework in which we related the concept of trust to other governance-related factors. Before conducting an extensive, longitudinal case study on an alliance form of contract, which is, so far, rare in the construction industry, we conducted a concise survey in order to explore levels of trust, and factors associated to these trust levels, actually present in traditional and design-build types of arrangement that project partners are more familiar with. In this

section, we discuss the contribution of our study to both theory and practice, as well as its limitations. We conclude with the notes for future research.

6.3.1. Theoretical contribution

The main contribution of Chapter 2 is that it provides an overview of the important issues at stake in studying inter-organizational trust. In this regard, we have seen that the concept of trust is so complex that it may easily lead to misunderstanding and confusion. After all, since a certain trustor trusts a certain trustee, to a certain extent, on certain grounds, in certain aspects, and under certain conditions (Nooteboom, 2006), people may easily have totally different things in mind when answering questions about trust. Not surprisingly, therefore, our literature review shows that, when studying inter-organizational trust, one has to ensure accurate specifications and qualifications. Although this seems obvious, we believe that many studies that ask people whether they 'generally' trust someone else are so unreliable as to be misleading and meaningless, since it is unclear to what exactly people are focusing on in giving their answers[9]. Since our overview of research on inter-organizational trust is less bounded to a theoretical tradition than many previous studies we found, Chapter 2 is particularly useful for scholars wanting to become acquainted with the debate on inter-organizational trust without committing themselves to a certain strand. This seems to be especially valuable for scholars intending to study inter-organizational trust in construction. After all, since previous research has hardly related the academic discourse on trust to this specific context, many of the construction industry's researchers are not familiar with the most recent understanding of inter-organizational trust, whereas it is not a-priori clear which theoretical tradition is most promising in this context (Bresnen and Marshall, 2000a, 2000b, 2000c; Kadefors, 2004; Bresnen, 2007).

[9] In contrast, studies asking the general propensity to trust others (not a specific other) may validly measure trust propensity as a personal characteristic.

Second, by deriving a theoretical framework in which we present the factors of trust, control, risk and performance as they relate to one another, the main contribution of Chapter 3 is that it overarches a range of discussions on the role of trust in the governance of inter-organizational relationships (e.g. Das and Teng, 2001; Klein Woolthuis et al., 2005; Costa and Bijlsma-Frankema, 2007). It shows how apparently opposite arguments, as well as inconsistent empirical data, on the interrelationships between these governance-related factors can in fact be reconciled. More specifically, Chapter 3 suggests that processes of inter-organizational trust development are so complex that unidirectional cause - effect explanations provide an incomplete account of reality and that a holistic approach is needed if one is to understand the dynamics in more detail. It also shows that neither trust nor control should be taken as a panacea to contracting problems, as this could lead to either naivety or rigidity (Möllering, 2005a). Rather, Chapter 3 suggests that studies on the interrelationships between trust and control should include performance assessments in order to come to a better understanding of the effects of both factors, in isolation as well as in interaction (Vlaar et al., 2007). It also shows that when studying processes of inter-organizational trust development, one has to give serious consideration to the initial conditions of an inter-organizational relationship, since these can easily trigger vicious or virtuous cycles to develop.

The main contribution of Chapter 4 is that it provides insights into the levels of trust actually present in principal - contractor relationships in the construction industry. This is of importance since, so far, studies on trust in construction are rare and empirical data are missing. Moreover, since it has been stated that organizations in project-based industries might be inclined to import expectations from settings which with they are familiar, rather than develop trust from scratch (Meyerson et al., 1996). Our data confirms the suggestion that possible past and future cooperations may leave strong imprints on the level of trust in inter-organizational relationships (Larson, 1992; Klein Woolthuis, 1999). Further, Chapter 4 shows that, in contrast to what often mentioned (Latham, 1994; Egan, 1998; Byggkommissionen,

2002; PISB, 2003), on the principal organization side, the procurement route taken, and the contract form adopted, does not make a difference for the level of trust. On the contractor organization side, however, direct invitations and non-traditional contracts are associated with higher levels of trust. However, here we have to mention that the number of integrated contracts was very limited. Finally, our data provides insights into the influence of the problems that principal and contractor organizations meet in the project, and the measures they take to solve these problems on the levels of trust within construction projects.

Fourth, by conducting an extensive case study on the dynamics of inter-organizational trust, the main contribution of Chapter 5 is that it provides insights into the factors involved in processes of inter-organizational trust development. In doing so, we respond to a statement of Van der Ven and Ring (2006) that more longitudinal research is needed on the dynamics of inter-organizational trust since scholars, so far, have mainly theoretically discussed but rarely empirically explored how and why trust develops over time. Since our focus has been on an alliance form of contract in the project-based context of the construction industry, we also respond to the call of Bijlsma-Frankema and Costa (2005) for a better contextualized understanding of processes of inter-organizational trust development. The context needs to be included in the analysis, because it may strongly influence the dynamics of trust in a particular situation, for instance through the set of expectations that business partners bring to a new relationship.

Chapter 5 confirms the earlier suggestion that the initial conditions of an inter-organizational relationship, in terms of both opportunities and incentives to deviate, are of disproportional influence on the development of inter-organizational trust (Vlaar et al., 2007). Our data also shows that, even if the initial conditions of an inter-organizational relationship are conducive to trust, it is far from automatic that trust develops into virtuous cycles. In this regard, we have seen that, in monitoring whether anyone deviates from what agreed upon, organizations should beware of adopting an overly suspicious attitude, since this may cause vicious cycles of distrust

developing. In order to feel confident that a business partner will not make use of unforeseeable temptations to deviate from what was agreed upon, organizations are better advised to put substantial efforts into diminishing any inclination for deviant behavior (e.g. Lindenberg, 2000; Das and Teng, 2001; Nooteboom, 2002). Chapter 5 shows that this is especially true for partnering types of arrangement in construction, because organizations in this project-based industry might be inclined to make use of opportunities and incentives to deviate, since they are used to this in traditional and design-build forms of contract (e.g. Meyerson et al., 1996; Kadefors, 2004; Noorderhaven et al., 2006). In line with Bijlsma-Frankema and Costa (2005), we conclude that such a purposeful reduction of goal ingruence and preference divergence may enhance the quality of the relationship between business partners such that vicious cycles of distrust are less likely to occur. Our data also suggests that, for virtuous cycles of trust to develop, organizations should adopt an attitude reflecting dedication and benevolence, especially when it comes to counteracting risks and solving problems that threaten project outcomes particularly relevant to a business partner. By demonstrating relationship-preserving behavior, organizations are signaling that they are unlikely to give in to any temptation to deviate and, in doing so, inviting their project partner to likewise respond.

Chapter 5 not only demonstrates how factors of trust, control, risk and performance interact as an inter-organizational relationship progresses; it also helps in understanding the function, purpose and effects of various practices in establishing and maintaining cooperative, trusting relationships in partnering projects in a project-based industry where relying on trust is not the normal route. In this regard, Chapter 5 shows that, although it was necessary from an analytical point of view to subdivide trust, and its governance related factors, into various separate factors, in practice, the sub-factors discerned are often so closely intertwined, that they are not necessarily perceived as distinct by respondents. For instance, a lack of experience influences the dedication and benevolence of organizations towards each other such that it makes the competence aspect of trust hard to distinguish from its intentional aspects. A similar interdependency is seen between the

formal monitoring systems that project partners use and the way the informally deal with goal ingruence and preference divergence. Therefore, in studying processes of inter-organizational trust development, our holistic case study research approach proved to be very appropriate since it provided the opportunity to capture the interrelatedness of the relevant sub-factors as perceived by the respondents themselves.

6.3.2. Practical contribution

Given our focus on the processes of inter-organizational trust development in the project-based context of the construction industry, the practical contribution of this study is twofold. First, our study enables us to provide managers with evidence-based guidelines for inter-organizational trust development. In this regard our data show that, for trust to arise, it might be not sufficient for business partners to diminish opportunities and incentives for deviant behavior by means of a contract. Although this can make the initial conditions of a relationship more conducive to trust, there will, almost inevitably, arise occasions in which there are unforeseeable temptations to deviate from what the organizations agreed upon. Since people might give in to these temptations, even if this is against one's own longer-term interest, for trust to arise, business partners should also put substantial efforts in diminishing inclinations to deviate. Indeed, if people develop a preference for relationship-preserving behavior, they will not breach, even if opportunities to do so are perceived. Therefore, organizations not only have to ask themselves if the conditions of a relationship are conducive to trust. They should also question whether they feel confident that a business partner will not give in to any remaining temptation to deviate; and what they could possibly do, in various circumstances, to achieve this confidence. In this regard, we have seen that they could consider, for instance, reducing goal incongruence and preference divergence by establishing shared norms, values and beliefs. We also have seen that deliberately demonstrating vulnerability to signal trust may be an important step in starting up processes of inter-organizational trust development.

Second, this is especially true for partnering types of arrangement in the construction industry. After all, since business partners in this project-based context might be inclined to import expectations from traditional and design-build forms of contract in which inter-organizational relationships easily deteriorate, for one-off partnering forms of contract to be successful, business partners have to put substantial efforts in diminishing any inclination to deviate, all the more so since they are challenged to cooperate constructively, instead of striking an opportunistic pose. For this, our data show that, since trust needs to be pieced together in its multiple dimensions to fit into specific conditions, organizations not only need to carefully staff their project; they also have to deal with the people employed such that attitudes of dedication and benevolence are reinforced and rewarded. In this regard, since the everyday reality of a project will maintain itself by being embodied in routines, business partners should, above all else, establish a way of behaving that is conducive to trust. So, our data show that, in developing cooperative, trusting relationships in partnering types of arrangement, business partners should be aware of the fact that trust in people goes hand in hand with trust in organizations they work for; and that trust on these levels is supported by surrounding working methods. As such, our study provides organizations with insights into trust-building practices that they could more consciously use in designing and applying their practices; and also avoid processes and systems that may be detrimental to the development of trust.

6.3.3. Limitations of the study

In order to conduct our study, we made a number of choices which impose limitations on our study. While we could discuss the limitations of each minor choice that was made within the study, we limit ourselves to those choices that have had a major impact on the study.

A first limitation is that, although we gave an extensive overview of the important issues at stake in studying inter-organizational trust, in Chapter 2, we did not commit ourselves to a certain theoretical tradition. Consequently, we did not become immersed in the specific discussions that usually coincidence those strands. On the other hand, the trust phenomenon turned out to be so much complex that, in deriving a theoretical framework for exploring factors involved in processes of inter-organizational trust development, in Chapter 3, we were not able to fully capture its multidimensionality. Rather, we had to force ourselves to focus on two key sub-factors. The same reasoning holds for the other sub-factors discerned. A further limitation is that we used the conceptual model as a guide in finding out how and why inter-organizational trust develops over time. It was not utilized to develop propositions or test hypotheses on the interrelationships between the sub-factors discerned.

In studying the levels of trust in construction, our Chapter 4 survey also have difficulties with the multidimensionality of the inter-organizational trust concept. Since a certain trustor trusts a certain trustee, on certain grounds, in certain aspects, and under certain conditions, we believe that it is impossible to measure the level of trust between principals and contractors so, that fully corresponds with what organizations perceive as relevant with regard to the trust they hold towards their project partners. Therefore, we have to be reluctant in interpreting the outcomes of our questionnaire. In this regard, we remark that, although our data shows that past and future cooperations may leave strong imprints on the level of inter-organizational trust in construction projects, it does not provide us with insights why this is the case, and how project-exceeding cooperation interrelates with procurement routes chosen and contracts forms adopted both in present and in earlier construction projects. A further limitation is that our survey did not show us which factors, in what manner, lead to certain levels of trust in the types of arrangement discerned. Neither has it given an explanation of why certain problems arise, how the measures taken work out, and how the problems and measures discerned influence the levels of trust actually present in construction projects. This seems to be rather difficult to capture in a

survey. Therefore, since an alliance form of contract is aimed at overcoming deteriorating patterns of behavior that project partners in traditional and design-build types of arrangement often face, considering this, it would have we given us more insights if had conducted case studies on both these forms of contract.

In this regard, as we opted for depth over breadth in our Chapter 5 case study, we have only studied processes of inter-organizational trust development in a single partnering type of construction project. Consequently, our study is inevitable limited to the context of that particular type of partnering project, and to a certain extent also to the context in which this project was located, the Netherlands. We also have to be aware of the fact that our focus is on processes of inter-organizational trust development between a former public principal organization and several private construction firms. Therefore, we should be careful in generalizing our findings beyond the scope of project alliances in this specific institutional environment. For instance, a broader international comparison might have revealed other dimensions that are relevant to the development of inter-organizational trust in project partnering. The same holds for a comparison with more types of public principal organization, such as national highway authorities, because they will have to conform to other procurement guidelines. Furthermore, since we have only looked at the principal - contractor interface, the inclusion of other relevant organizations, such as subcontractors and local authorities, might also bring additional issues to light that are important in establishing and maintaining cooperative, trusting relationships in project alliances. A further limitation is that we have focused on something that turned out fundamentally to be a process phenomenon. However, since we only asked respondents at two points in time to reflect on factors involved in the dynamics of inter-organizational trust, recollection and memory imperfections may have introduced bias into this procedure. Therefore, although the approach followed had the advantage of leading to a veritable dialogue between the researchers and the researched, observations throughout the subsequent project phases could have formed a useful complement to the level of understanding reached in our interviews.

6.3.4. Notes for future research

Our suggestions for further research follow from the limitations mentioned above. An initial research direction could be to examine in more depth the deteriorating patterns of behavior that principal and contractor organizations often face in traditional and design-build types of arrangement. Since the bulk of construction projects are still realized using these forms of contract, one could ask to what extent and how organizations manage to overcome the hampered processes of trust development within traditional and design-build types of arrangement. This question is not only of practical relevance, it is also scientifically challenging since inter-organizational relationships in which partner firms have little to fall back upon - in terms of a shared culture, an adequate backup by contract, or an appropriate monitoring and sanctioning system - into making their leap of faith are gaining prominence in the debate on inter-organizational trust (e.g. Bijlsma-Frankema and Klein Woolthuis, 2005). Here, the focus is especially on the gap the leap of faith has to cross, and how this can be accomplished by the business partners involved (Möllering, 2005b).

A second option for future research concerns the processes of trust development in other partnering types of construction project. Here, the focus should be on how the limits on opportunities and incentives to deviate relate to efforts made to come to closer relationships. In this, attention should be given to the appropriateness of adopted formal and informal forms of control. Since trust has a tendency to develop in upward or downward spirals, research efforts should also be focused on the initial conditions in partnering projects, which emanate from the procurement routes chosen. Insights into the ways in which these self-reinforcing cycles can be stimulated and/or broken - especially in terms of interventions that business partners can make use of - could further advance our understanding of the processes of inter-organizational trust development. Here, the termination of partnering projects also deserves attention, since the pains and gains are irreversibly shared when project relationships come to an end.

A third research direction that can be suggested is to examine in more depth the dynamics of trust within the team responsible for conducting a partnering type of construction project. Here, we suggest making use of an intra-organizational perspective rather than an inter-organizational one. In temporary teams, a diversity of skills and functions from a range of organizations are brought together. Since team members are assigned to specific roles, they tend not to commit themselves too much at the beginning of a project (Meyerson et al., 1996). Subsequently, their trust may become enhanced by the hours spent working together, with people dealing with each other more as individuals than as roles (Ring and Van de Ven, 1994). However, since there are quite a number of projects that go wrong, especially in the early phases, this is not something that business partners can rely on easily to succeed. They always face the threat that a cooperative team will turn into a competitive one. Therefore, the question arises as to under what conditions will individuals commit to a team, or when are the potential gains from exploiting trust large enough for them to deviate. Based on our experiences we think that this type of research question could be best tackled with participatory observation. Periodic interviews may be insufficiently fine-grained to capture trust-related group dynamics.

A fourth option for future research concerns a focus on the role of outside organizations in processes of inter-organizational trust development. Since business partners are embedded in networks of relevant organizations, the development of a more cooperative relationship between two partner firms might have an, unintended, side effect of other organizations drifting away. Consequently, business partners may face a relationship-threatening triangle, with an outside organization playing them off against each other. By paying more attention to this negative consequence of partner firms bunching together, a more balanced perspective on inter-organizational relationship governance could be developed. This might improve our understanding of how the dynamics of trust within one particular relationship interrelates with patterns of behavior in adjacent relationships.

Our final suggestion is to investigate the extent to which the findings of our study hold in different institutional environments. Here, we are not only thinking of principal organizations operating in different legal regimes within a single country. It would also be relevant to conduct international comparative studies, since the relationships we have depicted in our theoretical framework are contingent on a broader context of laws, customs and perceptions that people, in general, hold regarding the trustworthiness of business partners (Arrighetti et al., 1997; Bijlsma-Frankema and Costa, 2005; Vlaar et al., 2007). This deserves greater attention in future research because organizations nowadays face an increased number of cross-border relationships, which are not embedded in shared, institutionalized rules, roles and routines (Zucker, 1986; Möllering, 2005b). Here, the challenge for business partners is, above all, to '[e]stablish shared meaning as a fundamental precondition of the possibility of social action' (Lane and Bachmann, 1996, p. 370).

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Summary

Although in the last few decades, much effort has been devoted to understanding into more detail trust and its specific role in the governance of inter-organizational relationships, the need to come to a better contextualized understanding of the dynamics of inter-organizational trust is increasingly advocated. This is, because researchers have mainly theoretically discussed, rather than empirically explored, how and why trust develops over time. This dissertation elaborates on this need, by studying factors involved in processes of inter-organizational trust development in the project-based context of the construction industry, where relying on trust in not the normal route.

First, by conducting an extensive literature review, we provided insights into the most recent understanding of inter-organizational trust. Here, we concluded that, on the side of the trustor, trust has rational reasons and psychological causes. It can be aimed at the competences as well as at the intentions of a trustee. Whether trustees do intend to use their competences depends on the opportunities and incentives for deviant behavior, as well as on their inclinations to deviate. In this regard, is has been argued that, early in an inter-organizational relationship, trust will be based on a conscious estimation of someone's trustworthiness, whereas it becomes more personalized as an inter-organizational relationship develops. When people do not have time to engage in lengthy processes that usually contribute to the development of trust in more enduring forms of organization, they are inclined to import trust from settings which with they are familiar. This applies especially to organizations in project-based industries, where time pressure hinders business partners in developing trust from scratch.

Second, by deriving a theoretical framework, based on an extensive literature review, we provided insights into the role of trust in the governance of inter-organizational relationships. This conceptual model contains the elements of trust, control, risk and performance. Here, we concluded that trust, both in intentions and competences, closely interacts with control in counteracting the risks that organizations face, both internal and external to their relationship. Trust reduces the perceived levels of risk, whereas control is a more interventionist approach, limiting the opportunities and incentives for deviant behavior, by formal forms of control, as well as the incentives to deviate, by informal forms of control. Further, it has been argued that organizations update their trust, and bring about changes in their forms of control, based on the actual performance of an inter-organizational relationship, both in terms of objective and subjective outcomes. Finally, since organizations are more open to expectancy denial than to expectancy conformation, it has been proposed that the initial conditions of an inter-organizational relationship are of disproportional influence on the subsequent development of trust between organizations.

Third, by conducting a concise survey, we explored how the level of trust in construction projects varies according to certain specific situational variables. Our data show that perceptions of project-exceeding cooperation between principals and contractors, not only on an organizational level, but also on a project manager level, strongly influence trust. With regard to the working history, it appears that the personal involvement of project managers is of significant influence on the levels of trust in construction projects. With regard to the prospects of working again, it appears that an expected future cooperation on an organizational level also has a significance influence on the level of trust in a construction project. Further, we have seen that, from a principal organization perspective, the tender procedure used, and the contract form adopted, do not have a significant influence on the levels of trust in construction projects. This does not hold for contractor organizations, since for those direct invitations and non-traditional contracts are associated with higher levels of trust.

Finally, our data show that, from a principal organization perspective, problems regarding extra/less work, as well as handling complaints are of significant influence on the levels of trust in construction projects. Contractor organizations indicate that instead of handling of complaints, problems with regard to the completion date of the project, the people employed, the supply of information and the payment terms influence the level of trust within a construction project.

Fourth, by conducting an extensive, longitudinal case study on an alliance form of contract, we provided insights into the factors involved in processes of inter-organizational trust development. This partnering type of arrangement is especially aimed at overcoming deteriorating patterns of behavior that principal and contractor organizations often face in traditional and design-build forms of contract. Here, we have seen that, for trust to develop in an alliance form of contract it is not enough that the initial conditions, in terms of opportunities and incentives for deviant behavior, are conducive to trust. Since organizations are challenged to dedicatedly and benevolently put their competences into action, in monitoring whether anyone deviates from what agreed upon, they have to beware of adopting an overly suspicious attitude because this can have a counterproductive effect. Our data show that it is better to put substantial effort into diminishing any inclination for deviate behavior, all the more so since organizations might make use of any opportunities and incentives to deviate, because they are used to this in traditional and design-build types of arrangement. Hence, small defective actions may slip in almost automatically, and a suspicious attitude may find signals of betrayal even where no defection exists. Rather, principal and contractor organizations need to make themselves vulnerable to each other while simultaneously finding out whether there openness is reciprocated or violated. Here, our data show, that the showed commitment to, and motivation for, the construction project serves as an important source of trust.

Appendix A

Case study protocol

Question 1:
What role do you have within the project? What are your tasks, responsibilities and accountabilities? What kind of position do you hold within your organization? How did you become involved in the project?

Question 2:
Why do you make use of an alliance form of contract? Have you experience with other partnering types of arrangement? On what aspects does an alliance differ from traditional and design-build forms of contract? What are the limiting conditions for making an alliance work?

Question 3:
Can you describe the project's progress? How does the project perform, in terms of budget, planning and quality outcomes? How is the monitoring system organized? Which performance threatening risks is it important to concentrate on? How do you deal with any problems that arise?

Question 4:
Can you describe the relationship with your project partners? To what extent have they adopted a dedicated and benevolent attitude? Are you satisfied with the cooperativeness shown? What are important, relational quality threatening, risks? What means have you invested in the relationship with your project partners?

Question 5:
Do you trust your project partners? What is your trust based on? Have your project partners the right competences at their disposal? Do you expect them to make use of any opportunities to deviate? What are the incentives for them to behave opportunistically? Are they inclined to deviate from what you agreed upon?

Question 6:
What do you expect regarding the project's prospects in terms of budget, planning and quality outcomes? How do you expect the relationship with your project partners to develop? What are the potential bottlenecks, with respect to both the project's performance and the relational quality underlying this performance?

Question 7:
Is there any information you want to share, that we did not ask for?

About the author

Albertus Laan (1977) graduated from the School of Management and Governance at the University of Twente with a MSc degree in Industrial Engineering and Management (2002). His graduation paper on the implementation of codes of conduct was nominated for the NBN-Rabobank thesis award (2003). Subsequently, he has been employed by the Department of Construction Management and Engineering, which is part of the Faculty of Engineering Technology. His PhD research, which is connected to the scientific program of the Institute of Governance Studies, is about processes of inter-organizational trust development in the project-based context of the construction industry. He has published in the Journal of Business Ethics, Construction Management and Economics, Engineering Construction and Architectural Management.