

# CHALMERS



## Partnering's effects on process value and product value

- A study of four Swedish construction projects based on interviews

*Master of Science Thesis in the Master's Programme Design and Construction Project Management*

TOBIAS ALFLJUNG AND ERIK OLSSON

Department of Civil and Environmental Engineering  
*Division of Construction Management*

CHALMERS UNIVERSITY OF TECHNOLOGY  
Göteborg, Sweden 2014  
Master's Thesis 2014:3



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Examensarbete / Institutionen för bygg- och miljöteknik,  
Chalmers tekniska högskola 2014:3

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## ABSTRACT

One of the advantages of partnering, advocated by the British and American construction industry, are the formal mechanisms of conflict resolution which are employed to lesser extent compared to projects without partnering. However, in the Swedish construction industry, disputes are often solved on sites, nevertheless partnering is being applied. Furthermore, research conducted in the Swedish construction industry indicates that construction clients, in housing projects, are less satisfied with main contractors' ability to collaborate in partnering projects compared to traditional projects. Therefore, this case study focuses on obtaining an overview of partnering in order to illustrate the contribution of partnering components to both process value and product value. This illustration can be seen as a mean to explore the core effects of partnering collaborations. The method is outlined with a theoretical framework which seeks to frame parts typically included into partnering collaborations. To be able to compare partnering literature with practice, semi structured interviews were conducted in four case projects with clients, users and contractors. What is observed throughout the cases is a pattern between the partnering components and process value towards product value. The pattern is manifested in a process consisting of three parts: *Inclusion and involvement*, *socialisation* and *motivation*. It is questionable whether the three parts correlates more with successful projects, disregarding the label of the collaboration, than exclusively partnering projects.

Key words: Partnering, partnering components, process value, product value, inclusion and involvement, socialisation, motivation.

Partnerings effekt på process- och produktvärde

- En studie av fyra svenska byggprojekt baserade på intervjuer

Examensarbete inom Design and Construction Project Management

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Avdelningen för construction management

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## SAMMANFATTNING

En av fördelarna med partnering, vilket förespråkas av den brittiska och amerikanska byggbranschen, är formella konfliktlösningsmekanismer, som anses nyttjas i mindre utsträckning jämfört med traditionella projekt. I den svenska byggindustrin, löses tvister oftare på byggarbetsplatsen, likväl tillämpas partnering. Dock indikerar ny forskning, vilken bedrivits i den svenska byggindustrin, att beställare i bostadsprojekt är mindre nöjda med huvudentreprenörers förmåga att samarbeta i partneringprojekt jämfört med traditionella projekt. Därför fokuserar denna studie på att erhålla en överblick av partnering för att illustrera vad partneringkomponenter bidrar med till process- och produktvärde. Detta ses som ett sätt att utforska kärnan av vad partneringsamarbeten bidrar med. Den teoretiska ramen innefattar de delar som normalt ingår i partneringsamarbeten. För att kunna jämföra partneringrelaterad litteratur med tillvägagångssättet i fyra byggprojekt, genomfördes semistrukturerade intervjuer med beställare, brukare och entreprenörer. I dessa projekt observerades ett mönster mellan partneringkomponenter till process- och produktvärdet. Mönstret illustreras i en process bestående av tre delar: *Inkludering och Involvering*, *Socialisering* och *Motivation*. Frågan är dock om dessa tre delar snarare härrör från lyckade projekt, än från partnering.

Nyckelord: Partnering, partneringkomponenter, processvärde, produktvärde, inkludering och involvering, socialisering, motivation.

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## Acknowledgments

This study was conducted at the Department of Civil and Environmental Engineering at the Division of Construction Management. The study completes our studies at the Master's Programme Design and Construction Project Management.

We would like to thank Professor *Per-Erik Josephson*, our academic supervisor at Chalmers University of Technology, for guiding us through the process of shaping the study, for the continuous feedback and commitment.

We would also like to thank *Per Andersson*, development manager at Peab, for aiding us with both advice and practical assistance throughout the study.

We would also thank all interviewees for taking their time and adjusting their schedule in order to meet us. We appreciate this very much since the study would have been impossible to conduct if not for the interviewees.

Gothenburg, December 2013

Tobias Alfljung

Erik Olsson

# 1. Introduction

## 1.1 Background

For decades, the construction industry has been characterised by an antithesis relationship between client and contractor (Ng, et al., 2002; Bygballe, et al., 2010). Furthermore, Kadefors (2002) argues that traditional contracting used in construction have led to unexploited skills, lack of flexibility and inefficient utilisation of construction time. To reduce the mentioned antithesis relationship, the industry has tried to create win-win situations, which has required a change of mind set towards dialogue and close collaboration (Egan, 1998). One concept, developed in order to improve collaboration is partnering. However, in comparison to how long there has been a client and contractor relationship, partnering is relatively new. Additionally, partnering is lacking depth research on questions such as its limitations and extent (Bresnen, 2007). Furthermore, Bresnen (2010, p.625) reflects on how partnering is integrated into the construction industry.

*“Partnering in any context is therefore likely to be a very specific combination of tools, techniques, processes and practices, manifesting itself in different ways and making it hard to generalize into a universally applicable model.”*

What the above quote refers to is that partnering should not be seen as a best practice model, partnering can either be used as a concept, which includes a number of partnering activities such as charts, workshops and dispute resolution activities or as a label to any collaborative relationship. However, Bresnen & Marshal (2000) emphasizes the advantages of partnering as an undefined and ambiguous concept resulting in that partnering as a defined best practice might be unfavourable as the most successful approach may lie in customisation.

Another standpoint, which primarily is advocated by British and American authors, is that the advantages of partnering in construction projects are that formal mechanisms of conflict resolution are employed to lesser extent compared to projects without partnering (Bresnen & Marshall, 2000; Kadefors, 2004; Larson, 1997). Whether this advantage of partnering, in construction projects in comparison to traditional construction projects, is as relevant in the Swedish context can be questioned. Bröchner, et al. (2002), found that the number of litigations in the Swedish construction industry is relative low in comparison to in the UK, which is due to the custom of solving disputes on face-to-face basis in Swedish construction. Furthermore, observing the Swedish context, Bröchner, et al. (2002) argues that collaboration is rather informal and actors generally avoid open conflicts. As a consequence, costs for conflict resolution are quite low which do not emphasize improving relations. As a result, there is a limited interest in performing partnering and Bröchner, et al. (2002) suggest that it could be a result of low gain in efficiency and if informal collaboration is a norm within Swedish construction, there is less incentive to develop partnering arrangements which improve relations further. This

argument notwithstanding, clients are still interested in utilizing and learn the partnering concept, often trained by consultants.

In a report by Josephson (2013), which covered 389 apartment building projects, clients from 223 apartment buildings projects were interviewed regarding the productivity in the Swedish construction industry. A result from this study shows that clients were less satisfied with the collaboration with the contractors in partnering projects compared to traditional contracts. Notable is that the clients ratings of the collaboration for both partnering projects and traditional projects are high.

## **1.2 Purpose and limitation**

In order to continuously develop collaboration between actors in the construction industry, a first step is to examine which partnering-related components affect the project outcome. Therefore, the purpose of this study is:

*To further understand the core of partnering related to process value and product value.*

This leads to the following two research questions:

- Which of the elements of partnering discussed in literature are deemed to effect both process value and product value?
- How is the linkage between the elements of partnering and process value and product value manifested?

In order to define the study's scope, with a theory behind partnering that remains undefined to what is to be included or expected, a natural limitation occur. Since, sometimes partnering is referred to as a distinctive practice and other times used as managerial rhetoric (Bresnen & Marshall, 2000). We have chosen to consider Nyström's (2005) summary of partnering components as an definition, see Table 1, which provides an perspective of what is typically included in partnering, but could also be seen as a limitation.

In this study, projects will be selected for the case studies if procured as partnering projects, meaning a distinctive practice, and not when, in retrospect, the collaboration can be described as partnering.

The case studies are both limited to the number of projects as well as to projects performed by the case company (Peab) as the contractor. Moreover, interviews are limited to the contractor, the client and user.

Contractual conditions could set the tone of collaborations. Thus affect underlying causes to why certain decisions were made. However, difficulties in obtaining the contracts, no deeper analysis will be taken into consideration related to contractual conditions.

## **2 Theoretical framework**

The theoretical framework consists of three parts. The first part is an introductory which describes the rhetoric of partnering and possible pitfalls. The second part seek to frame the scope of what parts, referred to as components, that often are included into partnering collaborations in academia. The third part describes the how value is viewed in the study.

### **2.1 Partnering in construction**

On the Swedish market, major contractors and consulting firms have developed their own concept of partnering. For example, NCC (2013) has their view which assumes that the participating actors will see a partnering project like a business, "Project Ltd". Regardless concept name, whether it is partnering, collaboration, extended collaboration or full partnering, most contractors and consultants refer to partnering collaboration in approximately similar values which are to bring actors closer and increase the collaboration. As earlier stated, the term partnering is used in several different ways. It can either be used as a concept, which includes a number of partnering activities such as charts, workshops and dispute resolution activities or as a label to any collaborative relationship. However, Bresnen & Marshal (2000) emphasize the advantages of partnering as an undefined and ambiguous concept resulting in that partnering as a defined "best practice" might be unfavourable as the most successful approach may lie in customisation. Therefore, adaption to different construction projects contextual factors could be more beneficial than a strict definition would.

On the other hand, the rhetoric of partnering strives for increased collaboration and win-win outcomes might be misused by opportunistic clients (Alderman & Ivory, 2007). A strong client on a competitive market could be tempted to shift an improper amount of risk and a continuous demand on cost-saving on the contractor. When a client's focus is on cost-savings instead of adding value to the project, the construction contract might not differ much from standard contracts from the perspective of the contractor.

Alderman & Ivory (2007), refers to partnering success to depend on several interconnected effects to deliver the benefits promised. To achieve a successful partnering project, there ought to be an on-going commitment of all involved actors. This commitment becomes somewhat fragile if vital managers have conflicting goals from the own organisation and the project goals (Alderman & Ivory, 2007). A possible consequence of such double-sided responsibilities and loyalties could be that decisions made by the managers are in line with the permanent organisations agenda but at the same time compromises the projects. Thus constitutes a risk in reaching the projects as well as the partnering success criteria.

## 2.2 Partnering components

Since partnering has a rather ambiguous definition, the components included vary. This study is based on partnering components of Nyström's (2005) literature review, which examines thirteen academic papers and is summarised in Table 1. The table indicates the key components to be trust and mutual understanding. The two components which are considered to of least importance are choosing working partners and openness.

Papers/ Components	Trust	Mutual understanding	Economic incentive contracts	Relationship building activities	Continuous and structured meetings	Facilitator	Choosing working partners	Predeterm. dispute resolution method	Open- ness
Barlow 2000	X	X	X			X			
Cheng <i>et al.</i> 2000	X	X			X	X		X	
Crane <i>et al.</i> 1999	X	X					X		
Kadefors 2002	X	X	X	X	X	X	X	X	X
Kemi 2001	X	X	X	X		X			
Koraltan and Dikbas 2002	X	X			X			X	
Kwan and Ofori 2001	X	X							
Larson 1995	X	X		X	X			X	X
Naoum 2003	X	X	X					X	
Ng <i>et al.</i> 2002	X	X				X		X	X
Packham <i>et al.</i> 2003	X	X	X	X	X				
Rhodin 2002	X	X		X	X	X		X	
Thompson and Sanders 1998	X	X	X	X				X	X
	13	13	6	6	6	6	2	8	4

Table 1: Partnering components discussed in academic papers (Nyström, 2005).

In the following sections, the components observed in Table 1, will be further examined in order to establish a frame of what partnering often is considered to imply.

### 2.2.1 Trust

In order to have successful collaborations in the construction industry, trust is often seen as a necessity (Kadefors, 2002). Thereto, the term trust is also used as a core concept in partnering literature, see Table 1, and according to Nyström (2005) trust along with mutual understanding is necessary in partnering. However, Nyström (2005) relates to trust as a foundation which is always present in partnering, but little is said how it differs from any other collaboration. Why trust is important in partnering is explained by Kadefors (2004) in that trust is considered to be important in all business relationships, but especially in partnering. The reasons being that in partnering projects, documents are often more incomplete relative to ordinary construction projects. According to Black, et al. (2000), some partnering advocates believe that if there is trust, there is no need for formal contracts and that the negotiations of a contract is a sign of mistrust. On the other hand, formal terms and conditions which promote openness and collaborations help the involved actors to understand the nature of the specific partnering collaboration. The presence of trust is

perceived to lower transaction cost, thus, the drafting of contracts would be characterised with less conflicts (Nyström, 2005).

According to Kadefors (2004), if one actor (the trustor) display trust, or for that matter distrust, towards another actor (the trustee), the anticipated behaviour of the trustee mostly conform to what is displayed. A statement which then would entail that the nature of trust to some extent relies on a self-fulfilling prophesy. In traditional construction contracts and how actors generally relate to these contracts tend to induce behaviour which counteracts the process of building trust (Kadefors, 2002). This mistrusting attitude is legitimised as the attitude has become normative for the collaboration between the client and contractor in the construction industry. What partnering is intended to change is the attitude and behaviour which has become normative through the use of formal contracts. Consequently, trust is seen as an intended outcome (Kadefors, 2002) at the same time as it is seen as a necessary component in order to have partnering (Kadefors, 2004; Nyström, 2005). At first glance it could seem contradictive, but as stated before, the anticipated behaviour tend to induce a behaviour which resembles the anticipated. This could be exemplified accordingly, if one person displays distrust towards another, the other person tend to show distrust.

Kadefors (2004) explains that trust is not a homegenous term but consist of three foundations; Calculus-based trust, Relational trust and Institution-based trust. Calculus-based trust is based on a rational choice of that the trusted party is motivated primarily by economic self-interest. Connected with this type of trust is often economic incentives or contractual sanctions for breach of trust. Relational trust is built from interaction between actors over time. With more interaction more trust ought to arise as personal experience and information forms the basis of trust. Betrayal is linked to relational trust, which hints that this type of trust is based on psychological and social factors rather the financial. Therefore, breach of trust can occur even though financial obligations between two parties are fulfilled. Institution-based trust is based on societal norms where institutions are based on cultural rules and shape biases of how trustworthy categories of people are. Kadefors (2004) states that the boundaries between the three bases of trust are vague and that trust not seldom is based on more than one base.

When a client and contractor enter into a contractual agreement in the traditional sense, the relationship between the client and contractor is often characterized by an amount of distrust (Laan, et al., 2011). This is due to that most project risks are carried by the client and it can be advantageous for the contractor to take an opportunistic approach in the collaboration. The initial level of distrust often lead to close supervision of the contractor, which, as stated by Kadefors (2004), would induce a behaviour which makes the parties distrust one another even more than initially.

### 2.2.2 Mutual understanding

In the traditional sense, if the contractor gains higher revenue it would incline higher cost for the client (Nyström, 2005). This traditional view indicates a win-lose relationship, as a countermeasure actors strive, through partnering, to create win-win situation. The win-win state of mind is, according to Kadefors (2002), gained through the conviction of that the individual goals of actors are reached through achieving the common goals. Nyström (2005) on the other hand, believes that common economic goals between partnering actors is impossible to reach, rather the actors can reach a mutual understanding and a respect towards each other's interests. When the goals of the actors are contradictive, Nyström (2005) claims that a compromise is what the actors should strive for. On the contrary, a win-win situation is not too far fetched to assume possible, if actors reach a state of mutual understanding and respect towards the other's interest, problem solving or win-win situations can be achieved (Pruitt, 1983). Furthermore, the win-win situation can be referred to as thinking outside the box or to move beyond the first intended individual goal. An example of this could be to apply the use of economic incentives, which according to Kadefors (2004) is a component of partnering often considered important to reinforce the focus of the common goals.

The traditional way to conduct business within the construction industry entails an adversarial relationship due to surrounding economic conditions (Bresnen & Marshall, 2000a). Having common goals is usually ascribed to one of the most important factors in partnering collaborations (Kadefors, 2002). Through mutual understanding of that the individual goals of actors, if fulfilled, would entail that the common goals are reached. In the process of joint goal formulation the actors are forced to express their own goals and at the same time obtain an understanding of the other actors' goals, situation and preferences. However, it is according to Bresnen & Marshall (2000a) of importance not to disregard the logic of the traditional adversarial relationship of the client and contractor. If one of the actors, e.g. the contractor, is in a precarious position in a recession, that contractor might have to agree to common goals which are more beneficial to the client. This would be an example yielding, which according to Pruitt (1983) is when an actor has to yield their interests to the benefit of another actor's interest. Thus, this would put the contractor in an unwanted position throughout the project.

The common goals which the actors agreed upon does not necessarily have to be restricted to economic goals, but are often also concerning safety, quality, a pleasant working environment, no litigation, completion on time (Ng, et al., 2002). As stated, Nyström (2005) is of the opinion that common economic goals are impossible to stipulate, however other, non-economic, goals are perceived possible to draft. This is due to that the core individual interests' of the different actors are not contradictive in these matters. Looking at the interests of the different actors in the construction industry as fixed, may be valid given the prevailing culture. But as several authors claim (Ng, et al., 2002; Ingirige & Sexton, 2006; Bygballe, et al., 2010; Eriksson, et

al., 2008), that the attitude and the behaviour of the actors should change in order for partnering collaborations to work efficiently. Even though the change is seen a necessity, it might be hard to actually for actors to conform to the change in practice, as the contradictive goals of different actors are seen as logical (Bresnen, 2007). Ng, et al., (2002) found that this was especially common when clients were unwilling to commit to the project partnering relationship and conflicting organisational culture.

### 2.2.3 Incentives

Rhodin (2002) discuss the theory of individuals being rational and driven by a short-term vested interest in maximizing self-interest. Therefore, based on this perspective of people in general, she argues the importance of incentive solutions. Furthermore, Rhodin (2002) relates incentives to the natural state in construction which is that different actors depend on each other in order to create competitive products. The core of incentives is to have several parties that all gain by lowering cost or increase value to the project. Therefore it is not farfetched to understand why incentive based contracts rhymes well with the partnering concept since actors in early phases together try to reduce costs and increase costumer value. However, Nyström (2004) mentions that incentives not necessarily have to be cost related but could be incentives such as time, quality, cooperation, safety and so on.

In construction, according to Nyström (2004), there are in general three types of contracts used, which are fixed-price, cost-plus and cost-sharing contract. The cost-sharing contract could be placed in between fixed price and cost plus in relation to incentives. A deviation from the target cost is shared by a percentage factor between both client and contractor which is illustrated in Figure 1. According to Dewulf & Kadefors (2012) target cost contracts are common in projects where partnering is applied.

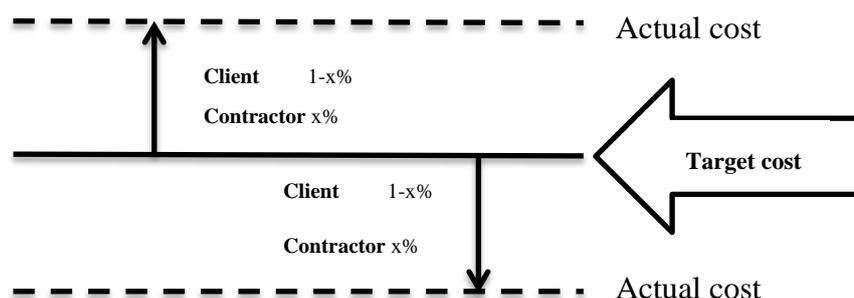


Figure 1: Distribution model for clients and contractors of shared profit or loss in cost reimbursement contracts (Modified from FIA, 2006).

According to Bresnen & Marshall (2000b) incentives in partnering projects and system formed to support the motivation must be carefully designed and perhaps monitored. However, Bresnen & Marshall (2000b) are clear to distinguish the difference between organisational and individual motivation and commitment, which do not necessarily correlate.

According to Dainty, et al. (2001), economic incentives affect the partnering arrangements; without economic incentives it will become more difficult to succeed with partnering arrangements. This is also supported by Miller, et al. (2002) exemplified by that relationship between subcontractor and contractor are generally of transactional nature, stressed by conflict and mistrust allowing the contractor to allocate risk on to the subcontractor. Furthermore, Miller, et al. (2002) argue that contractors, to a large extent, seek to reduce cost rather than focus on expertise and mutual cooperation which leave subcontractors less integrated in the early phase such as the design and planning stages. Consequently, leaving subcontractors out in early phases could lead to hampered innovation since in situations of conflict and mistrust subcontractors are more likely to focus on what they know, rather than trying something new (Miller et al., 2002). Furthermore, Packham, et al. (2003) suggest, that in order to improve the ability of innovation from subcontractors, they need to be procured with partnering and have some sort of incentives, if not the project could suffer unused flexibility.

According to a case study by Bayliss, et al. (2004), incentive based contracts is one of the most effective tool to achieve success in partnering projects. However, as Laan, et al. (2011) argues, it is not sufficient for project actors only to rely on an incentive structure to achieve the project goal. In order to develop cooperative relationships, the actors should give effort into reducing the remaining predispositions since individuals tend to import and implement working methods from learnt from design-build projects which could counteract partnering components such as openness and trust. Furthermore, Kadefors (2004) mention projects where the incentive contracts have not worked as intended. A possible explanation is given by Green & May (2005, p. 508) as:

*“Trust and a commitment to ‘measuring performance’ are in many respects strange bedfellows.”*

This quote refers to that contractors are obliged to trust client simultaneously their performance is evaluated from key performance indicators. The actors involved ended up in similar negotiations as in traditional projects, only this time, negotiations were about target cost adjustment (Kadefors, 2002). Different economic reward systems have hidden weaknesses in that too strong focus and too much faith on economic incentives, co-operation may be credited to self-interest rather than to an accommodating attitude towards the other actors.

#### **2.2.4 Relationship building activities**

According to Newell, et al. (2009), in knowledge management theory, there is a focus on knowledge creation, collaboration, interaction and teamwork where knowledge creation could be related to Nonaka & Takeuchi's (1995) view on knowledge. Nonaka & Takeuchi's (1995) perspective on knowledge creation emphasise social processes of dialogue and interaction and is referred to as socialisation. It is not farfetched to relate knowledge management theory (Nonaka & Takeuchi, 1995) with components in the partnering concept (Nyström, 2005). One practical issue which differ partnering

collaborations from projects without partnering are the higher amount of meetings or workshops Fernström (2007). Depending on the scope, workshops serve different purposes, for example a teambuilding workshop which often takes place at the start-up of projects and is monitored throughout the project. Moreover, teambuilding is a central tool in order to create trust and cooperation in partnering collaborations (Rhodin, 2002). Furthermore, Rhodin (2002) also argues that teambuilding activities serve to unite different actors who might have different perspectives and standpoints in order to create a shared vision. Support to these arguments can be observed in the concept of *Ba* (Nonaka, et al., 2000). *Ba* is referred to as the context where information can be transferred to knowledge. Hence, *Ba* is the space and time where a common ground is established, which might be what Rhodin (2002) hopes to create with teambuilding activities. However, as Svedberg (2000) mentions, team building is based on the assumption that belonging and group identity can deliberately be created and trained. Furthermore, Svedberg (2000) argues that teambuilding is used to increase the efficiency and motivation by interaction. However, Larson (1997) is sceptical whether collaboration, which is enforced through team-building activities, will last if participants are confronted with tougher problems. Larson's scepticism receives support by Bresnen & Marshall (2000a) who stress that not enough evidence point towards that collaboration synthetically can be engineered by predetermined activities. On the other hand, advocates of partnering often consider the workshops as a mean of resolving conflicts (Green & May, 2005). Even if the participants' of a partnering project supposedly has received performance improvements, it is difficult to ascribe with certainty the improvements to the partnering collaboration. Another difficulty, discussed by Rhodin (2002), regarding workshops is if not all participants are involved, it may be more difficult to create a shared vision amongst key stakeholders in the project.

One direct cost as a result of partnering are the workshops, both in time consumption and consultant costs (Kadefors, 2002). However, the cost of workshops could be seen as a redistribution of resources, in other words, invest more resources in the early stages will reduce resources used in the later stages. Furthermore, in general cost for design and planning are often higher in partnering collaborations compared to traditional projects. However, this could also be seen as a redistribution of resources due to an increased creativity which results in more ideas taken in consideration in the early stages (Kadefors, 2002).

### **2.2.5 Continuous and structured meetings**

Nyström (2005) claims that a shared view within partnering research is that goals and declarations should be monitored and followed up continuously in order to serve their purpose. The meetings are recommended to be carried out by the partnering participants and could also assist as a problem solving or improvement forum. Furthermore, Crowley & Karim (1995) expresses the importance of the partnering group having mandate to take decisions fast and thereby obtain a flexible organization. Moreover, Fernström (2007) mentions that in partnering collaborations,

there are a higher amount of meetings comparing to projects without partnering. With this being said, it could be of relevance to be aware of that every meeting is a cost in itself for the project, which stresses the importance of efficiency and structure of each meeting. However, Fernström (2007) argues that in strategic partnering collaborations, the relationship between the client and contractor eventually lead to a minimum need for meetings.

### **2.2.6 Facilitator**

The facilitators in partnering collaborations could be described as neutral discussion leaders, whose purpose is to create a forum with an atmosphere where all actors are heard and have their say (Nyström, 2005). Furthermore, the facilitator should balance and focus meetings and discussions in order to move the actors, as a group, forward throughout the project. In addition, the facilitator is often seen as important for conflict resolution if trained in the suitable soft skills (Green & May, 2005). Since not all actors have experience of partnering collaborations, the facilitator might also need to educate participants (Kadefors, 2002; Rhodin, 2002). However, educating the industry in partnering might be a necessity, but could it be a risk with allowing facilitators as consultants defining and educating the industry of what partnering is as an absolute truth? Even though the facilitators' role might differ depending on the project, several researchers argue that an independent external facilitator is most beneficial (Ng, et al., 2002; Rhodin, 2002; FIA, 2006).

### **2.2.7 Choosing working partners**

The Partnering concept relies to a larger extent than traditional construction projects on human relations, which makes it more important to choose the right persons for the project (Kadefors, 2002). It is considered important that the key persons are enthusiastic towards the partnering collaborations, of equal important is it to not involve inappropriate persons to key positions. Furthermore, Kadefors (2002) claims that if a critical number of individuals that have a positive attitude to the collaboration are assigned to the project, the project culture should be affected accordingly.

The contractor selection criterion in partnering projects is often based on the specific view of the client, rather than on lowest bid (Bresnen, 2010). In the selection process Bresnen (2010) identified that an effective altering of the contractor's identity takes place, which occurs through interviews with key staff of the partnering projects. In this process it becomes vital for the contractor to adapt to the clients expectations of the partnering collaboration. This indicates that it might not be as important of which personal traits the contractor possesses but rather the ability to adapt to an existing profile.

According to Ng, et al. (2002), the choice of not involving the main subcontractors into the partnering collaboration could be a possible pitfall. From interviewing contractors in partnering projects it was found that some contractors perceived that the inclusion of main subcontractors to be beneficial in reaching project goals. Moreover, Ng, et al. (2002) noted that the inclusion of consultants in the partnering

collaborations should result in a more efficient resolution of issues concerning technical specifications. Additionally, the inclusion of consultants should result in a better relationship between main contractor and consultants. Therefore, it is not only important which individual to include but also which actors. Notable, is that an earlier contractor involvement could as well help the contractor and consultants to establish a more effective relationship.

### **2.2.8 Predetermined dispute resolution method**

Conflicts can occur between individuals, groups or organisations with regards to objectives, priorities, requirements and finance. When entering a partnering project, there is no guarantee that there will not be any conflicts or disputes, even if a part of the purpose with partnering is to reduce conflicts by means of several components. In order to settle potential disputes, a predetermined resolution method is generally supported amongst researchers (Naoum, 2003). If a dispute goes as far as to court, the outcome is most likely one winner and one loser as a result of the dispute. Mohr & Spekman (1994) argues that this way of settling disputes is rather destructive which both parties would like to avoid to some extent. Furthermore, a more constructive way in settling disputes, is between the people where the problem arose, which often occur at an operational level (Bennett & Jayes, 1998). However, Nyström (2005) noticed that ranking of motives, in a study performed in Sweden, in avoiding conflicts are relatively low, even though it is mentioned as one of the key components in partnering. According to Kadefors (2002), one explanation to this result could be that, Swedish construction has had a low degree of conflicts compared to other countries.

According to a report by FIA (2006), when a group of individuals takes time to process disturbances, the group becomes more efficient, which eventually could lead to fewer conflicts. The predetermined conflict resolution might be designed differently depending on the project but generally has a structured path in which participants have to break through. However, could a predetermined conflict resolution be a tool in which participants fear to utilize? The predetermined conflict resolution might result in a sense of false security in that the participants only have a conflict if they use the conflict resolution. In a sense, the participants in the partnering arrangement creates a common definition of that a conflict is only a conflict if they have utilized the conflict resolution, which might be false and they settled conflicts face to face.

### **2.2.9 Openness**

One of the purposes of partnering in the construction industry is to achieve a more open and less hierarchical relationship (Alderman & Ivory, 2007). According to Kadefors (2004), traditional procurement practices encourage contractors to disclose information from clients. The reluctance of contractors to communicate flaws discovered in tendering documents is a consequence of competitive tendering which mainly focuses on price as it not considered beneficial to communicate such matters. When contractors are procured with competitive pricing the profit is usually low, which often results in an opportunistic behaviour where contractor reveal information

when it is considered to be most profitable (Rhodin, 2002). This lack of openness is according to Kadefors (2004) both damaging for the process of building trust and may result in increased construction costs. This is an effect of an implicit incentive built into the tendering system, therefore, tendering which focuses on other factors than on price be advantageous in regard to openness.

The implementation of open books is often a central theme in partnering projects as it facilitates open communication (Kadefors, 2002). The application of open books is however paradoxical in respect of trust (Nyström, 2005). One could argue that if trust exists in a relationship, there would be no need for using open books and it could as well be seen as a control mechanism which could counteract the construction of trust. Another possible approach is that open books would be vital when it comes to the initial building of trust as a sign of good faith.

Furthermore, Nyström (2005) argues that well-functioning partnering collaborations entail sharing of information between actors. Thereto, increased understanding of other actors' situation should promote more efficient negotiations. If a common ground for communication is created a reconceptualization of individual's local understanding can occur, thus promoting the sharing of knowledge in the group (Bresnen, 2010).

In a study by Dewulf & Kadefors (2012), indications were found of that open communication regarding the project risks enhances the performance of the collaboration. Furthermore, another aspect which enhanced the collaboration was that co-location of the projects actors point towards an enhanced development of trust and openness. By conducting interviews with project participants, Dewulf & Kadefors (2012) found that the participants believed that constant interaction led to a natural occurrence of openness.

## **2.3 Value**

Two ways to view upon when value is created are according to Wandahl (2005) either in the product or the process (See Figure 2). Examples of process values are good cooperation and communication and examples of product value are brick type, economy and architectural design. Wandahl (2005) states that partnering has a unilateral perspective to value which relates to the product. In the Swedish construction context, where no accepted common definition has emerged, it is problematic to categorise partnering collaborations to be either product or process oriented.

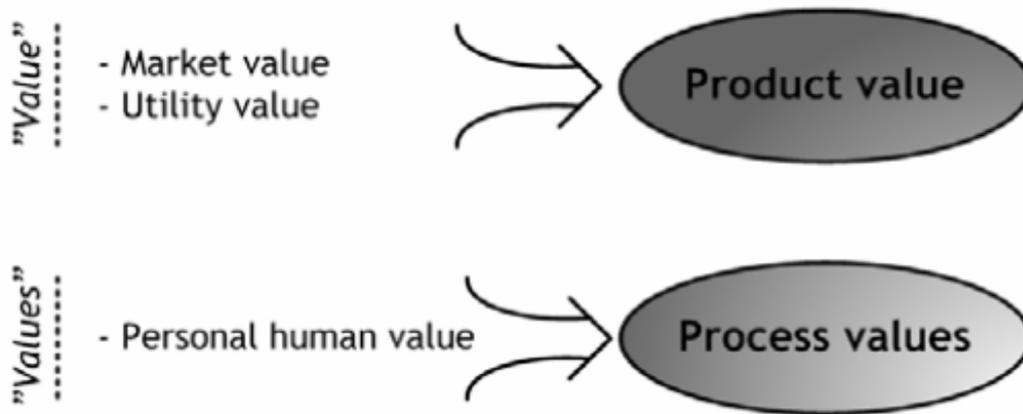


Figure 2: Examples of values linked to process and product values (Wandahl, 2005).

Although, looking at contemporary partnering literature, (Kadefors, 2004; Nyström, 2005; Alderman & Ivory, 2007; Bresnen, 2010) ascribed components of partnering often apply to human values rather than to market and utility values, e.g. trust, openness and mutual understanding. As a construction project is a process which results in a product, different actors have different opinions regarding the time and place of value creation (See Figure 3). In the study by Wandahl (2005), cooperations partners, such as contractor and consultants, were observed to prioritise process value over product value and construction clients and end-user product value over process values. Notable is that an actor seems to prioritise the categories of values which correlate to what phase of a construction project the actor mainly concerns are. To exemplify, a construction worker might not have any vested interest in the product and a contractor likewise but in addition the quality of the product could affect warranties. A construction client are in direct contact to the end-user and could be involved in the facilities management. The end-user probably live or work in the product or otherwise make use of it. Therefore function, quality and cost ought to be a main concern.

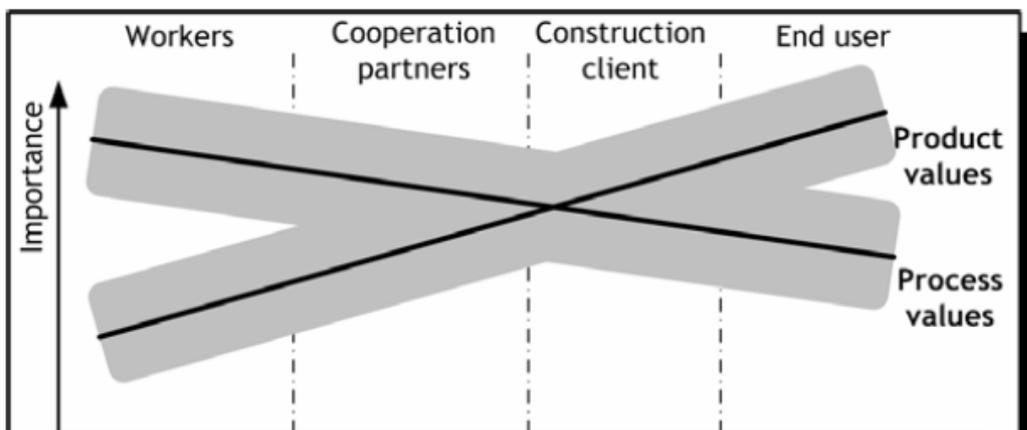


Figure 3: Illustration of how different actors consider the importance of process values respectively product value (Wandahl, 2005).

### 2.3.1 The nature of value

The meaning of value is, according to Josephson & Björkman (2011), highly contextual and depends on from whose perspective it is viewed. In this report, several different actors are interviewed and probably have their own perspective on what adds value for a project. Even though the concept of value has been widely discussed in construction literature, the concept has often been related to parameters such as cost, function, quality etc. Moreover, despite the development of definitions, equations and models a universal theory of value in construction has not yet materialised. Through a literature review, Salvatierra-Garrido & Pasquire (2011) describes different characteristics and perspective of value within academia. By doing so, Salvatierra-Garrido & Pasquire (2011) illustrate the complex nature of the value concept with five aspects; objective, subjective, relative, context dependent and dynamic.

The *objective* value perspective is linked to measurable qualities or physical product features (Salvatierra-Garrido & Pasquire, 2011). This perspective on value disregards the relationship between buildings and the people who will use them which could be problematic since this view is the dominated perspective in the industry today.

The *subjective* perspective is, in a sense, the most complex since everyone is able to contribute with an individual view of what value is or is not (Salvatierra-Garrido & Pasquire, 2011). Value is not seen as the creation of a product but the certain characteristics of the product related to an individual (Wandahl, 2005). The subjective perspective is most likely to differ from the objective perspective. This perspective has turned the scope of value to focus more on customer satisfaction (Salvatierra-Garrido & Pasquire, 2011). A connection between value and knowledge is noted by Nonaka, et al. (2000) as knowledge has a subjective side. Furthermore, the subjective side of knowledge adheres to terms such as commitment and belief, terms which Nonaka, et al. (2000) state is anchored in the individual's value system.

The concept of value is also *relative*, in other words, value is a comparative concept e.g. high quality buildings can only exist if there are low quality buildings. Therefore, creating value is not to create a product, but products with specific characteristics and qualities in relation to other products (Wandahl, 2005).

The *context dependent* perspective of value is when the value varies depending in which context it is being measured or perceived. Wandahl (2005, p. 65) describes the contextual perspective of value using an example:

*“If you need a stone for a road barrier, a big stone would have great value. On the other hand, if you need a stone to play ducks and drakes with, perhaps a small flat stone would be of value.”*

The perception of that value changes over time therefore not remaining constant is called *dynamic*. This view could be related to the how the value concept changes during the life cycle of projects (Salvatierra-Garrido & Pasquire, 2011).

## 3 Method

The structure of this chapter follows the same chronological order in which the study has been conducted. Therefore, the first section establishes the context of the study by providing a general understanding of the case company. The second part describes in what fashion the theory has been collected and analysed. The third part seeks to provide an understanding regarding the process of selecting the cases. The last part aims to enlighten as to why the study have conducted semi structured interviews and in which way.

### 3.1 The case company

Peab is one of Sweden's largest construction companies with approximately 15,000 employees in the Nordic region. The study covers four case projects at Peab with different geographical locations and with different organisations. What is in common, or at least should be in common, is that all projects have the same overall organisational vision and mission. Peab's vision, taken directly from their website ([www.peab.se](http://www.peab.se)), is divided into three parts:

- *Peab builds sustainable communities for the future*
- **Peab is the Nordic company for construction**
- *Peab draws skilled people*

The business concept builds on the following extract from the same website:

**“Peab is a construction and civil engineering company whose guiding principle is total quality at all stages of the construction process. Through a combination of innovative thinking and solid professional skills, we aim to make our clients' interests our own and thereby build at all times for the future”.**

The extract contains guidelines or focus areas for Peab, which renders it important in this study to be aware of the effect of an organisational culture. In an interview situation, answers given can be affected by the rhetoric in any company of which the interviewee belong.

### 3.2 Qualitative data analysis

The main differences between qualitative data analysis and quantitative data analysis are often thought of being that the quantitative method focus on measurement and qualitative does not (Bryman & Bell, 2011). This is only partly true, and perhaps more of a consequence of the epistemological and ontological discrepancies which separates the two methods of data analysis. Regarding the epistemological differentiation the qualitative method is based on interpretivism and the quantitative method is mainly based of positivism. In short, interpretivism is generally based on the conception that knowledge of a certain phenomenon is a social construction and on the other side of the spectra, positivism is based on that knowledge exist disconnected from the human mind as an entity (Weber, 2004).

With the view that the social realities within the frames of singular partnering projects constitute the reality that is interesting, no overall definition of what partnering ought to be, or what activities consist of, will be employed in this report. Consequently, emphasis will be put on the experiences and perceptions of the individuals whom engaged actively in the examined projects.

In the theoretical framework, the components from Nyström (2005) were adopted to frame the extent of partnering. Nyström's study is comprehensive as it identifies which components of partnering most frequently discussed in academia. In this study, each component is described separately as a base for further discussion as well as a foundation for creating a questionnaire. The partnering components are weighted in relation to the interviewees' perception of value. Furthermore, value was divided into process and product, according to Wandahl (2005) in order to identify patterns between components and value.

### **3.3 The case studies**

The report consists of studies on four case projects where Peab has been the main contractor. Bryman & Bell (2011) refers to this approach as a comparative design. This approach should entail for contrasting and deeper comparisons between interviewees' opinions than a single case would. On the other hand, investigating a single project would probably yield a deeper understanding of that project. This might be beneficial, when charting patterns which would not emerge if viewed upon too hastily. Although, it could be difficult to certainly distinguish if patterns identified in a single project are applicable in other projects or only a manifestation of a specific project culture. Therefore, four projects will be examined in order to identify whether the partnering components affect project outcome either positive or negative.

One reason for conducting multiple case studies is external validity, as described by Bryman & Bell (2011). The meaning of external validity refers to that a research result may be correctly generalised outside the specific research context. Looking at one partnering project, may render an identified pattern generalised past the specific context misleading. However, conducting case studies over several partnering projects could increase the frame of the context where the external validity is still valid. It could be important to bear in mind that the common denominator of all cases involves Peab as the main contractor, which to some extent reduce the external validity.

In order to probe which cases to include and exclude into the case studies, we attended a meeting with a team in Peab called "The partnering network". During this meeting, selection criteria were set in consensus with the attending participants. The geographical regions of the projects belonged to the same division as the participants' of the meeting since they could provide aid in setting up meetings with key persons in these regions. The time of completion of a project was not to be too long, meaning that key persons during the projects should still be employed by organisations which were actors during the project. After receiving information of the different projects six projects were selected. These were investigated further by conducting interviews with Peab's project managers in charge of the projects. After these interviews two of the

possible projects were deselected due to that the projects was not procured as partnering collaborations, meaning that the initial intent of the projects was not for the projects to be referred to as partnering collaborations. Furthermore, the contractual agreements resembled framework agreements more than strategic partnerships. The four other cases were chosen due to that all projects were procured as partnering as the common denominator at the same time the type of construction project were significantly different. Three of the projects that are situated in the Gothenburg area are a large scale hotel, a multifunctional arena and an apartment building. The fourth project is situated in Karlstad and is a nursing home for patients suffering from dementia. The reason why the projects were chosen even though there were few similarities was since patterns could be found which were connected to partnering rather than a certain type of project.

### **3.4 Interviews**

According to Trost (2005) the word structured can have two different meanings in the context of interviewing. One use of the word is referring to whether the questions have predetermined options of answer or whether the questions are open. With this use of the word the first alternative is structured and the other alternative is unstructured. Another use of the word is referring to that the interview is locked to a topic or not. In example, the interviews conducted in this report concerns the partnering collaboration in certain construction projects, therefore the interviews are structured. With regard to the two different interpretations of what the word structured refers to the interviews conducted in this report are in the first case semi-structured and with regard to the second interpretation, structured.

The semi-structured interview seems to be advantageous when conducting different case studies since to a large extent the interviews would follow the same structure (Bryman & Bell, 2011). In comparison to structured interviewing, is the answers received from a semi-structured interview not assumed to be an objective truth, but rather as a way to understand the contextual reality of the interviewee (Qu & Dumay, 2011).

For the purpose of the study, examples were seen as vital in order to connect the components with process value and product value. Therefore, the structure described in Table 3 was seen as the most favourable method to extract examples from the interviewees. The interviewees were given the opportunity to select time and place for the interviews. In most cases, the interviews were held in the interviewees' offices as it would be more convenient for the interviewees. The interviews were supposed to take one hour, but the actual time varied from between 50 to 90 minutes.

Step 1	Open ended questions regarding the interviewee's role in the project and the project in general.
Step 2	Questions according to the questionnaire see Appendix 1. The interviewee quantifies the components effect on the process and product value. Moreover, the interviewee was asked to exemplify and motivate the assigned score.
Step 3	Concluding questions were asked concerning possible improvements and learning outcomes.

*Table 3: Description of how the interviews were structured.*

In each case three actors of interest for the study were interviewed: client, user and contractor. The reasoning behind interviewing these actors is linked to the assumption that they have different perspective on what value is and how it is created. However, in the case of the Apartments there was no user representative available to interview. As a consequence, two representatives employed by Peab were interviewed as a complement. Another deviation from interview plan was made in the case of the Arena. The user representative was not considered to have been included substantially in the partnering collaboration, which led to difficulties in quantify the components. The interview at the Arena followed the same structure with the exception of the quantification of components.

The examples regarding the extent of components contribution to process and product value were analysed in order to find the essence of the examples. In other words, each example was ascribed with one word related to the content of the example as a categorisation which constituted the heading of the discussion. However, a possible implication when interviewing was that the time elapsed from the completion of two projects and the interviews was over one year. The time related issue could lead to an alteration of memories concerning the project and that value could change over time. Two projects were ongoing at the time of the interviews which could imply a different focus on value depending on which phase the project is in.

## 4 Findings and Analysis

The following chapter describe each case separately and starts with a short introduction regarding specific conditions of the project such as scope and key issues. The introduction is followed by sections of findings based on the component-oriented questions from the interviews. Table 4 provides an overview of each case which illustrates similarities and differences. The main similarity between the projects is that they all are procured as partnering and the main contractor in each case is Peab. The projects all vary in scope and budget with two public and two private clients.

Case	The Apartments	The Arena	The Hotel	The Nursing home
Type of contract	Design-build	Traditional	Design-build	Design-build
Contract sum (MSEK)	100	360	1000	90
Completion date	December 2015 (estimated)	January 2013	February 2015 (estimated)	June 2011
Type of client	Private	Public	Private	Public
Actors included in formal partnering	Client Contractor Consultants Subcontractors	Client Contractor Subcontractors	Client Contractor Few subcontractors Consultants	Client Contractor Main subcontractors
Incentive structure for contractor	Based on target cost	Based on target cost	Based on evaluation of construction process and target cost	No incentives
Interviewed actors	Client's project manager Contractor's project manager Contractor's design manager	Client's project manager User representative Contractor's project manager	Client's project manager Contractor's project manager User representative	Client's project manager Contractor's project manager User representative

*Table 4: Illustration of the comprehensive similarities and differences of each specific case.*

## 4.1 The Apartments

The apartment project, unlike the other projects in the study, is currently out for sale, therefore not finished. This causes some issues concerning the interview responses related to the study's research question of how process value affects product value since the project is in an early process stage. In contrast to the other project in this study, no end-users, in this case apartment owners are available to interview at this stage in the process. However, we argue that the client in this case could be seen as a user representative, since they build apartments in which their customers will live. Since apartments are up for sale and a certain percentage of the apartments need to be sold before construction can start, an exact construction start has not yet been decided, but the client expects to start building sometime 2013/2014 which would result in a completion 2015/16.

### 4.1.1 The process of selecting project organisation

In this case, two contractors referred to as design manager and project manager both employed by Peab which were interviewed both addressed several partnering specific related issues. Both reflected on how partnering in general affected their daily work. The project manager spoke about prolonged lead times in partnering collaborations, which in this case resulted in client requires the contractors knowledge much earlier compared to traditional projects. The project manager further developed the argument with that they, as contractors, do not receive enough compensation in the early stages. Since, in the early stages, the contractor shares their knowledge by informing the client what product is possible to build and how in order to meet the client's vision. The process described is, according to the project manager, very long, time consuming but not rewarding enough. With this argument, the project manager, argued that partnering collaborations should mostly be implemented on larger projects in order for the contractor to be profitable in relation to the large preparatory work which partnering entails.

Another issue related to partnering is that of contractors' organisation. In general, partnering procurements focus on organisations, but foremost, the individuals within the organisation which are evaluated in relation to factors such as experience, reference projects and such. The organisation presented by the contractor in tenders are fixed, which result in that individuals within the organisation cannot be replaced. The project manager explained with the following statement.

*“The client locks the contractor with a specific organisation that might start to build one year later, so partnering benefits the client plain and simple.”*

However, the client gave another perspective on this subject. The partnering procurement phase provides clients with the opportunity of choosing collaborators based on organisation, which result in certain requirements from the client. For example, clients need to clear with expectations and roles on organisations tendering the project. According to the client, contractors can reflect and try to meet expectations and goals much earlier which will help the process and hopefully the

product in the end. Furthermore, the client referred to early contractor involvement in partnering procurements as the initial start in creating mutual goals and understanding.

The design manager provided insights to an issue related to procuring in partnering, or more specific, when contractors procure subcontractors. In this case, the contractor procured subcontractors in partnering in order to see if they could manage the process. Furthermore, the contractor conducted interviews with all subcontractors who submitted tenders in order to create a perception of their collaboration skill. The design manager argued, that the process of procuring subcontractors with partnering is cumbersome and time consuming which usually results in using past experience to decide which subcontractors to interview. The design manager exemplified with the following narrative.

*“Imagine doing structured interviews with ten plumbing contractors, ten electrical contractors and so on, it is too time consuming. We [Client and Contractor] often go by past experience of subcontractors that worked well, and in the end we [Contractor] might end up with three subcontractors to interview.”*

What this possibly indicate, is even though the contractor believes that procuring subcontractors with partnering would enhance process value, it might be impracticable.

#### **4.1.2 Inclusion through incentives**

The client did not see incentive structure to be related to partnering. Whether to include incentives into contracts was seen as contextual, meaning that in some cases it would be favourable and in some not. The client was of the opinion that incentives should be based on risk sharing. In this case, target cost incentive was used by the simple reason that this was the first partnering project performed by the client's organisation and they needed experience to create knowledge concerning incentives in the organisation. Consequently, the client did not see incentive to have any substantial impact, an opinion which received support from the design manager who described the impact of incentives accordingly.

*“I think incentives are a bit overrated, I do not think it is really needed. We [Contractor] work with a cost reimbursement contract and have a safe percentage, then that small piece at the top [incentives] is of marginal importance.”*

In the statement above, the design manager referred to incentives from the perspective of Peab, as the company's part in the contract was large, the incentive sum became smaller in proportion to the contract sum. In this case, the design manager implements incentives for subcontractors as well. The reason was, according to the design manager, that the organisation needed to learn and cope with subcontractors incentives due to the lack of experience. On the other hand, the project manager considered an inclusion of subcontractors to affect the product value in a positive

manner. Therefore, the project manager believed that it should prove beneficial to include subcontractors from disciplines such as paintworks as end-users takes into account surface layers to a high degree. However, the design manager exemplified the problem of motivating painters to strive for quality.

*“The problem is that sub-contractors and workers rarely have any incentive to raise concerns. Take a painter for example, why should the painter go and talk to the carpenter and tell them that some screws are not screwed in far enough. Instead, the painter spackles over the screw, since it is faster and the painter have a chord unconnected. Then, in the final inspection, we get an inspection remark.”*

Furthermore, the design manager explained that someone needed to manage the subcontractors and familiarize themselves with how they report their finances. The administrative workload therefore increased significantly according to the design manager. The design manager problematized incentives further with the question: if the subcontractor has incentives, do the expected effects of incentives reach to the subcontractor craftsmen? The design manager believed that this would give the full effect of incentives. Furthermore, the design manager was convinced that in order to gain effect from partnering to the product value, the craftsmen has to be included.

### **4.1.3 Conflict resolution for achieving process and product value**

Both the client and the design manager did not ascribe predetermined conflict resolution to have a vast impact on neither process value nor product value. The client has experience from projects where predetermined conflict resolutions had not been drafted, but it did not matter. However, the client argued that only to discuss and mention conflict resolution methods will aid the process and foremost create a forum where individuals feel confident to highlight a problem that, if not brought up, could lead to conflicts. Furthermore, the client explained that the word conflict is associated negatively, but as long as the conflicts are constructive, it is a positive occurrence that hopefully can lead to a better product. The design manager agreed with the client to the extent that predetermined conflict resolution methods do not entail increased value. However, conflicts are seen as important and a part of everyday interaction, which often, if not always, is solved easily on site. These smaller, common conflicts were alleged to almost always be settled with satisfaction. Both the client and the design manager therefore assigned little value to the structured conflict resolution, but display informal conflict resolution to be beneficial and value adding both to process and product.

The project manager had a different view on how conflict resolution can be beneficial for the product value. By shifting focus from conflicts related to the contractual agreement between, for instance, contractor and client, the project manager identified the value related to conflicts of the end-user. The construction manager described how being in a partnering collaboration could be beneficial in securing customer satisfaction:

*“Customer Satisfaction Index [NKI] is easier to handle in partnering collaborations, as it becomes more convenient for the contractor and client to jointly draft a plan for payment and handling of customers. So... in a prior project we had a plan for claims from end-users and I hope to have in this project as well.”*

As the future apartment owners in this case are not Peab’s customers, Peab did not have a contractual agreement with this party, although, the importance of viewing upon the apartment owners as customers is highlighted nonetheless. What was interesting was that the project manager adheres to the subjectivity of product value. In projects such as the apartments the end-user, or customer, cannot be represented as a homogeneous group with a congruent definition of quality, what is aesthetically appealing, the worth of money etcetera. Consequently, the construction manager considers upcoming complaints to be the manifestation of customers’ unique expectations. However, the project manager explained that customer dissatisfaction entails a chance to increase the experienced product value more than if the customer would not have been dissatisfied at all.

## **4.2 The Arena**

In 2007, the municipality decided to build a 15,000 m<sup>2</sup> arena with both bathhouse and ice rink in one, which hereby will be referred to as the Arena. The design of the Arena was established through an architectural design competition issued by the public client. The contract was a traditional construction contract which resulted in that the client had already started the design with consultants before the contractor got involved. The detailed planning and calculations took about half a year to finish in collaboration with the client, contractor and subcontractors. Several technical drawings had to be revised since initial drawings would have resulted in a cost overrun by 70-60 million compared to the budget of 360 million SEK. To reduce the cost overrun, building methods and material changes were made in conversation between the client and contractor. The contract included incentives by target cost with ceiling price which the contractor applied to the subcontractors as well.

### **4.2.1 Product values through mutual understanding and trust**

The user mentioned how the inclusion of users’ knowledge at early stages of project influenced the product to a considerable extent at workshops. However, the influences were decoupled as the project went on. Furthermore, not all concerns or opinions were possible to satisfy, for example, the cooling system was objected early, by the user to the client or contractor. Other minor issues such as control functions and dehumidification techniques were issues where the user did not get entirely what they wanted. Moreover, the user argued the importance of balance when including users in early phases, since it is close to impossible to satisfy all users concerned.

One problem with the inclusion of all users is subjectivity. The user enlightened the difficulty with concretize subjective experiences such as “comfortable warmth” or “good sound” into actual requirements and documents. All functions wished for by

users have probably not been implemented. Some building demands were set too high, for example security in relation to what could be destroyed or stolen which became, according to the user, unnecessary and costly. What the user illustrated is how a decision, or possibly non-decision, made in the early phase can lower the product value through solutions with unnecessary high standards and costs.

On the other hand, the contractor gives an example of how a higher process value renders in a higher product value:

*“We had facades on the whole building which were very large and the architect wanted to have glass at the beginning. Which proved to be tremendously expensive and consequently we had to exclude the glass from our calculations. Still, we managed to collectively develop a facade that all parties were very satisfied with. We still got a little over budget but compared to the glass the new facade was very cheap, but the client still got an equally good facade, the end-user got lower maintenance cost for it and the architect were quite satisfied too.”*

This was seen by the contractor to be a good example of trust, as all actors involved in this decision, trusted each other's competence and will to deliver the best possible product within the set budget. The client was of the same opinion that trust has promoted a higher degree of product value as selected building materials has increased the quality as well as the function.

According to the contractor, all actors attained the product they strived for, which the user opposed to some extent. Furthermore, the contractor argued that the overall process was a more cumbersome experience than in traditional projects. Once again referring to the glass facade, the contractor explains that if this was a traditional contract the client could have persisted with the idea with the glass facade as it would have been procured with it included. In this case the actors had a discussion regarding the glass facade as well as similar problems throughout the project which rendered the process to be cumbersome.

#### **4.2.2 Utilizing the competence of actors**

Incentives were displayed as both value creating in the process as well as in the product. The contractor was therefore very positive towards monetary incentives, although implied that a mutual understanding governs how the involved actors relates to the incentives. The contractor was of the opinion that in order to reach win-win situations there has to be conjoined economic incentives between actors. The economic incentive connected to a buffer, which resulted in that when the buffer was filled there was no further need to cut cost.

The contractor gives an example of how full incentive outcome effected material choice in the project.

*“Since there was no more incentives to cut cost since the buffer was filled we were satisfied with our situation, we could then pick some more exclusive materials. Therefore, we were keen on delivering a better product and for*

*example we picked more exclusive glazed tiles on some places and a more exclusive reception. Such things could be altered along the project progress.”*

This quote is a good example of how the incentive structure motivates the contractor in delivering higher quality, thus increasing product value. In contrast to the motivation, it is still implied that the will to deliver product value is based on the fulfilment of the success criteria of the contractor, which in this case was linked to attaining the full incentive outcome. This observation is also identified by the client as an opportunity to raise the quality of the product. Simultaneously the incentive structure is seen as a risk in projects where the contractor experience difficulties in attaining the incentive outcome, as such scenario would jeopardise the quality of the product hence affect the product value negative.

The economic incentive was according to the contractor important since it gave the contractor the commitment to find smart solutions. In contrast to traditional projects the contractor as well as the client was of the opinion that there would be no motive to engage in discussion with the client regarding unnecessary costs.

The user as opposed to the contractor and client is doubtful whether the incentive agreement is beneficial for the product value or not. The user exemplified the doubt with the following statement in where the user refers to other projects where the user has been a client.

*“If the incentive is structured in such a way that the contractor makes more money, the cheaper they build, why shouldn't the contractor spend a lot of time trying to reduce the costs and therefore make more money... It puts incredible demands on us as clients and our knowledge to ensure that functions and quality are not affected”*

In this statement the user put emphasis on the importance of possessing the knowledge to navigate between obtaining the requested product and the different agendas of actors. Furthermore, the user links the choice of implementing partnering or not to their own competence as clients more than anything else. The user's organisation main purpose was to manage sporting facilities which resulted in a large accumulated competence in that specific area. All the accumulated competence was the reason to why the user did not feel that partnering adds no value for their projects. However, if a project concerns an area where the organisation does not have the same competence, partnering would be to consider. Since partnering, according to the user, allow input of other actors' knowledge to a larger extent than traditional projects.

### **4.2.3 On site socialisation**

Since the client and the contractor both were on site, a lot of emerging problems were solved informally, e.g. over a cup of coffee. Therefore, continuous and structured meetings were considered to add less value than informal ones according to the contractor. Furthermore, predetermined structured meetings are compared to a specification of requirements with counteracts the perceived benefit of informal meetings as a medium for problem solving. The client on the other hand was of the

opinion that structured meetings are very important, however the need and use of structured meetings are no different in partnering projects than in traditional projects. The only benefit concerning meetings was identified by both the contractor and the client to be informal meetings which in this case was enabled through that the client was situated most of the time on site. The client exemplified how informality simplifies the process accordingly:

*“To look in the rear view mirror, and go through decisions which I and the contractor [by name] made... there ought to be gaps. In some way you can sense when it works to make decision in such a way, like... “Let’s do that, order it”. In example, there was nothing written about an acoustic solution with a cost of half a million SEK”*

This is a good example of the informal meetings as a fast method for decision making built on trust. Although, the client also stated that it is under similar circumstances devastating decision are made.

Another important aspect of collaboration was according to the contractor considered to be openness which created much value for both the process and the product. The contractor was open from the start about their demands, such as a refusal to use the incentive part to increase the product quality. However, in the end there was a budget surplus which was used to increase the product value, such as sporting equipment for end-users.

According to the client the open culture was created much due to that the client was situated in the same offices as the contractor. Sharing the same offices aided and made it more or less impossible to not be open. How the office building benefited the open culture is exemplified, somewhat comical, by the client:

*“As I have understood it, they [The contractor] haven’t really had any secrets to me. It wasn’t possible because the site huts which we were located in had so thin walls... so you heard everything being said. There was this meeting which I wasn’t attending. “OK! Maybe we should go fetch the Client [Clients name] and tell him”. What was I to do? I couldn’t just sit there and say I heard everything... but I actually told them “I know exactly what you are going to tell me, because I heard it all.”*

This exemplification captures how the nature of the site created an open climate. Furthermore, the client explained that the client’s company, which is a municipality owned organisation, had secrets towards Peab which the client in this case did not have authority to disclose. The client thought it was disappointing that not all information could be revealed, but explains that the information probably would not have any impact on the collaboration.

## 4.3 The Hotel

The construction project, which was ongoing during the study, is divided into two main stages. The first stage was finalized in the summer of 2013, and was an extension of an existing housing body. The second stage is the construction of new building in close proximity of the old hotel as well as the first stage of the construction project. The new total project sum is estimated to around 1 billion SEK and was a cost plus fee contract with a target cost and a maximum price.

Complexity should be the determining factor whether to implement partnering or not, thus, the more conditions that are unknown in advance, the more difficult it is to calculate an accurate price for the project. At the Hotel, focus and emphasis have been put on the on-going activities, guests and minimise the effect on traffic around the hotel. These three focus areas generate a risk which is rather difficult for contractors to price which is one reason why partnering was chosen at the Hotel.

### 4.3.1 Involvement of actors

All of the interviewed actors, contractor, client and user, in the case emphasised the importance of extending the partnering collaboration beyond these three actors. The reason given was that to obtain a higher product value, the craftsmen should be involved.

The client explained that the work conducted by craftsmen on site is important for the quality and that if a culture of trust exists, an enjoyable working climate for all included in the project emerges. What the client was referring to is that craftsmen have a vital part in creating product value and that a trusting culture is a source of process value. The user believed that in order to obtain an increased product value there should be a good relationship established from user to craftsman. Furthermore, the user observed that building trust is a slow process but the process can be accelerated with interaction.

According to the client contractual goals conjoined with the goals stipulated in the Partnering Charter, which can be seen as a declaration of common goals, was of high relevance in creating a mutual understanding. The user on the other hand, was of the opinion that the most beneficial way to create mutual understanding is interaction over time and not by sending contracts and drawings. The client elaborated by stating that in general, the contractors have a focus on production, meaning that it should be easy and convenient to build, while the clients have more of a product focus and the production is subordinated product. Hence, obtaining a mutual understanding between the client and contractor is seen as a way to fulfilling goals and gain a joint focus. However, the client explained the hardship in succeeding to gain mutual understanding with all involved.

*“Here, at the hotel, the contractor’s manager is proficient in understanding the clients need at a higher level, but at supervisor level, it is more difficult.”*

In other words, the client felt that managers high in the hierarchy had a higher mutual understanding than those managers lower down, which means that there is room for improvement. An example of this was that the client wanted to complete a hotel reception before Christmas, but this created issues for the contractor's staff, as it interfered with production, supervisors and craftsmen was sceptical to the importance of this change. At a higher managerial level within the contractor's organisation the need was well understood, but the decision met friction with the operating staff. The example describes how a higher process value obtained would have increased the flexibility of the contractors operating staff.

According to the user, mutual understanding was perceived as important in order for the contractor to understand the specific demands of the ongoing activities of the user's business. The user gives an example of this understanding:

*“Partnering becomes more important when you are as integrated as we are. It is one thing to build a house on a field, were you can close off the area throw around dirt and keep doing so until you are finished. Here you work in an ongoing business.”*

According to the user, the problem was not to obtain a mutual understanding with the contractor, and perhaps not even the most important part at least not concerning product value. To secure an increased product value the partnering collaboration should, according to the user, extend to include subcontractors and even tier 3 subcontractors. Therefore, the user considered mutual understanding to be vital to achieve with the craftsmen. This opinion was supported by the contractor with the motivation that including subcontractors probably would have been favourable in this case. Furthermore, the contractor also argues that it could have been profitable to include consultants in the incentive structure, as the design phase became much more expensive than estimated due to cost of consultants.

### **4.3.2 Formality in the process**

Two sides of relationship building activities can be identified during the interview with the user, an informal relationship building as well as a formal one. As for the informal relationship building the user gave an example of the importance of showing enthusiasm in the everyday interaction on site. If the user shows interest in the work conducted by craftsmen, people are prone to feel proud over their work and therefore create a better product.

Informal meetings are seen as important but there seems to be a boundary between what is considered appropriate and not. For instance, the user sees it inappropriate to share the same office as the contractor. According to the user, it was of importance for both the contractor as well as for the client's organisation to sit in separate offices and be able to discuss solutions and different course of actions privately. This however raises the question whether an open climate actually permeates the case. As all three interviewees' claimed that openness was of vital importance in order to reach the set goals, it is peculiar that the user sees separate offices as a necessity. Separate offices

in order to maintain secrecy is at odds with absolute openness which is claimed to be achieved in this case.

At the same time the user stressed the importance of having a structure in how relationship building activities are executed. In this case all new individuals who was employed to participate in the project were to meet the client and the user. This first introduction meeting was seen by the user to be an important start of building a relationship and a first step to reach a mutual understanding. In addition to the introduction there were several activities such as theme coffee breaks, going to the cinema and barbeque parties. These planned activities were according to the user important in order for individuals involved in the project not to feel neglected.

According to the contractor there was a need for structured meetings, but at the same time there had to be some flexibility related to how often meetings were to be held. The contractor emphasised the importance of knowing when to have what meeting, since the need of different meetings changes during the project phases. The benefit of structured meeting was that all actors goes through what the project was about and to create a mutual framework for the project which was why the contractor found this component important. Continuous and structured meetings also worked as a tuning to assure that the project was on the correct path with aspect to time, cost and similar factors. In some sense, a meeting was one method to steer the process in the direction which will lead to the best product.

### **4.3.3 Incentives as a link between process and product value**

The hotel has utilized target cost, which, according to the client should work as motivation for the contractor. Furthermore, the client also felt it would be relevant to implement bonus systems related to key issues for the project, concerning time and the process. The function of the time bonus was straight forward in such that if the hotel was completed before the set date, the contractor received a bonus. However, evaluating the process is more complex, since the result was based on employee's opinions related to the soft parameters from the partnering chart. The facilitator manages the continuous evaluation via surveys based on the project organisation and hotel workers perception of the process. An average value from three to five results in a bonus to the contractor where the issues are connected to the objectives of partnering declaration. Utilizing a bonus on the process suggest that the client believes that process is important, and could also indicate that the client links process value to product value.

According to the user, incentives were perceived important in order to create motivation for the actors in the project. The user explained that in the hotel, consultants and subcontractors was not included in the incentive structure, but the user was convinced that it would have been beneficial. However, it was important to secure the expected quality since it can be economically advantageous for a contractor or subcontractor to find cheaper solutions at the expense of quality. To secure the quality the user should be clear when drafting documents which define the expected quality. These views are supported by the contractor in that economic incentives do

affect the contractors endeavour to find the most cost effective solutions; however, this is connected to mutual understanding as it was perceived important to understand which function and quality the client was expecting. Therefore, economic incentives without a mutual understanding could result in that a less expensive solution fails to meet the client's expectations. These opinions highlight the issues of incentives and how incentives can be counterproductive to its initial purpose.

#### **4.3.4 Choosing individuals not organisations**

Complexity was one of the main determining factors to why partnering was implemented in this project, another was the amount of unknown conditions which were difficult to calculate in advance. Project specific conditions for the hotel, such as scale, location and the problems associated with ongoing activities set high demands on the contractor's organisation according to the client. The importance of an organisation that the client could collaborate and build a relationship with was of such great importance that the client replaced the organisation. The reason for the organisational replacement was the result of the hotel project being shelved for a few years, while the client and contractor ran another project together. In the other project, the relationship between the client and contractor became damaged to the extent in which the client felt as it was necessary for this project to either replace the organisation wholly or change the organisation for the hotel. The client motivated the organisational change in the following way:

*“If you construct a barn on a field, you choose someone who is good in construction as there will be no need to talk to anyone. But in this case, people might need to go through the house and meet our customers and know which rules that applies when walking through the house.”*

The example describes that when building near ongoing business, the contractor have to be more sensible to surrounding factors such as the customers of the client. Furthermore, the client emphasizes the importance of choosing the right individuals for projects and which references the individuals in these organisations has. The importance of choosing the individuals for this project is further exemplified in that the client and user, after the collaboration difficulties, handpicked individuals from another hotel project the contractor was building. In conclusion, both the client and the user had the perception that choosing working partners was crucial for both the process and the product, to the degree in which they were prepared to replace the contractor if the relationship was not living up to what they required or expected.

#### **4.3.5 Process to product value**

To find a clear connection between process and product value related to specific components was according to the client no easy task.

*“Although there is a high level of trust in the process it is not sure that the product becomes good, that connection is difficult to make, although that's what we hope”*

The statement captures the vagueness of the component trust, which made it difficult for all three interviewees to exemplify the effect of trust. The contractor explained that the presence of trust was a result of that trust was focused on, in both the contract as well as in the partnering declaration and trust is considered to influence throughout the whole process. Thereto, trust was seen as important already in the stage of procuring the contractor. The contractor explained it accordingly:

*“It is a concern of them (the client) having faith in our knowledge, competence and organisations ability to deliver a product. But I do not believe trust has any vast effect on the product quality rather the process. But with a good process there are better conditions to create a good product.”*

Here, the contractor describes a direct relationship of the effect trust has on the process value and an indirect effect on the product value but trust is not believed to guarantee a better product. This view is shared by both the client and the user.

## **4.4 The Nursing home**

The nursing home was completed in 2011 and resulted in a modern, 5,150 m<sup>2</sup>, building adapted for people with dementia diagnosis. The building consists of 48 apartments with shared kitchens, meeting rooms, an administrative part of the clerical and staff areas. The ambition when designing the nursing home was to create a nourishing and modern building where the residents can move freely both on the inside and the outside. Main focus landed in the resident's environment and well-being, where freedom and comfort is important, which in the design phase emphasized utilising individuals past experience and knowledge of running nursing homes.

The planning process took about four years, and the actual construction was carried out with a partnering collaboration together with Peab as contractor. This meant that staff throughout the process could be involved and decide on various practical solutions which were one of the main goals, to create a user friendly nursing home. With all the concerned actors collaborating, the nursing home was developed with smart solutions for the user and workers such as adjustable bathroom, automatic light adjustment and adjustable shower units. Furthermore, since the nursing home houses patients suffering from dementia, solutions such as colour coded residents which will make it easier to recognise. In order to stimulate the patients, the outside was also relevant to make the best of, which resulted in a large courtyard with planting opportunities and possibility to celebrate midsummer or birthdays.

### **4.4.1 User involvement**

In order to identify the needs of the end-user, in this project patients suffering from dementia, a group consisting of nurses, dementia nurses, occupational therapists, physiotherapists and heads of units were assembled in order to create a building with the correct conditions for its purpose. In this process, the requirements specification was drafted, thus defining what product value was in this case. However, what the correct conditions are for the product is not a static process and may be changed as

conditions related to the project changed. With this argument, all actors interviewed mentioned the users' involvement as vital. Furthermore, the contractor argues, even though the architect had knowledge in drawing nursing homes, the users could on a more detailed level understand how certain features would affect the patients which utilize the nursing home. Moreover, one specific feature which affected both the process and product was the close relationship between the site manager and the user.

A large amount of time spent by the user's organisation in the project was perceived as extremely beneficial by all interviewees. According to the user, the large amount of time aided in securing the correct product for the future patients but also the collaboration as the craftsmen experienced a more enjoyable process compared to regular projects. Furthermore, the contractor argued that with a high involvement of the user, it was easier to meet expectations where there were uncertainties. Perhaps, it might not have been scheduled relationship building activities rather informal socialisation over the project which was more beneficial in increasing process and product value.

In comparison to design-build contracts, the user experiences that their input is not considered at all. On the other hand, in a partnering project, input from the user was perceived as both important and necessary. Meetings were also considered to enable the process of sharing knowledge. According to the user, interaction with the client on these meeting enabled for the transfer of knowledge. Therefore, the user considered socialisation over time to be important to create a mutual understanding, thus making the right choices for the patients and enhancing product value.

#### **4.4.2 Motivation and enthusiasm without incentives**

All of the interviewed actors in the case agree to that incentives, in general, are beneficial for neither the process nor the product. According to the contractor, incentives need to be handled with care, in order for the client not to question the motives of the contractor when implementing changes. The contractor believed that incentive outcomes should benefit the client more than the contractor. The contractor exemplifies with the following statement.

*“A client once wanted an incentive where the profit was split 50/50, I said no, and that we preferred an 80/20 in favour for the client. The reason for this is that it will be easier for us to implement changes if the client doesn't question our motives.”*

What the contractor indicated with this example was that a beneficial incentive for the client should increase trust for the contractor. Consequently, the contractor believed that incentives can create motivation, but it remains problematic to formulate incentives to motivate towards the benefit of the project. The client was of the opinion that the contractor should not need an additional incentive than the percentage of the total construction cost established in the contract. This was exemplified with a design-build contract where the contractor could choose a less expensive material with less

quality and consequently earn more profit. In this case, since there was no profit in lowering cost at the expense of quality there was no reason for mistrust in the project.

Although, the contractor might feel motivated without adding an incentive part, but it can still be difficult to motivate the craftsmen. The user described how the shape of the building in itself was a tool for the healthcare of the demented, which resulted in higher demands on the craftsmen. The user describes how information motivated the construction workers in the following way:

*“The walls was not drawn to be straight but to be curved, this was something the construction workers reacted on... distinctly. The construction workers motivated it ‘It is expensive, hard to build and it is just a corridor’. Such objections were something we were met by quite frequently during a period. Then we decided to set up a small training for the individuals; probably they had no idea what they are building for. It is all about knowing for whom you are building for. Then perhaps they will understand this in another way. [...] We informed about the sickness, what happens to a person who is sick and how the sickness progresses. What the needs are and how you function in different environments and so on. After this, not a single question arose regarding the choices we had made, but rather if the constructed solutions worked for us.”*

The user describes in this statement how the oppositions met by construction workers were turned to motivation and enthusiasm. The story is a good example of how mutual understanding can both improve the process value and shift construction workers focus on the process towards a product focus. Moreover, the user believed that by training the construction workers, they were included into the collaboration and probably felt that their contribution mattered for the patients. The user also described how construction workers of all ages confronted the user with curiosity regarding the disease.

#### **4.4.3 Informality as a way of harnessing knowledge**

The user described how a “grumpy” carpenter after an informative meeting got an understanding and enthusiasm for the product. When the carpenter understood and could relate to the needs of the future patients, the carpenter called the user with new ideas. One of such ideas was a combined frame and shelf, which was to hang on every patient’s door, tied to these combined frames and shelves was an expense of 1,500 SEK each. However, the carpenter designed an own version of the furniture from waste materials with a cost of about 150 SEK. The user deemed these to be of equally good function and quality. The example demonstrates how mutual understanding and enthusiasm can save expenses, hence yield the same quality and function to a lower cost. Interestingly, the carpenter had no economic incentive to find similar solutions, but the carpenter strived to find it anyway. Moreover, the examples illustrate how incentives can become obsolete if other factors, which motivate individuals and can be beneficial to trigger everyone involved in the project. The client exemplified motivation of craftsmen with the following statement.

*“The interesting or funny part is that we got the craftsmen feel involved in finding solutions as well. So when they stand on their ladder and screwing on something in the ceiling, at the time you walk around on site, can they ask questions and come with proposals. [...] The guys who stand there on the ladder with the tools have a lot of knowledge and are able to see alternatives which we could harness and we changed some things.”*

The client described how the involvement of craftsmen motivates people and lead to a more helpful climate on site. Furthermore, the contractor also mentions the need for a helpful climate with the following quote.

*“It comes down to getting all actors to realize that they need to be involved, even the guys on site must understand they need to help each other, otherwise it will be an ordinary project, which it should not be.”*

Consequently, the client argued, if individuals are willing to share knowledge, and at the same time a recipient is willing to consider it, new solutions may be found.

## 4.5 Quantification of process and product value

As far as it was considered possible, the interviewees were asked to quantify to what extent the partnering components were considered to have increased the value in the process and in the product, see Appendix 1. By quantifying the components in both the process and product in relation to the interviewees’ perspective on value, we believe to identify possible patterns in the four projects.

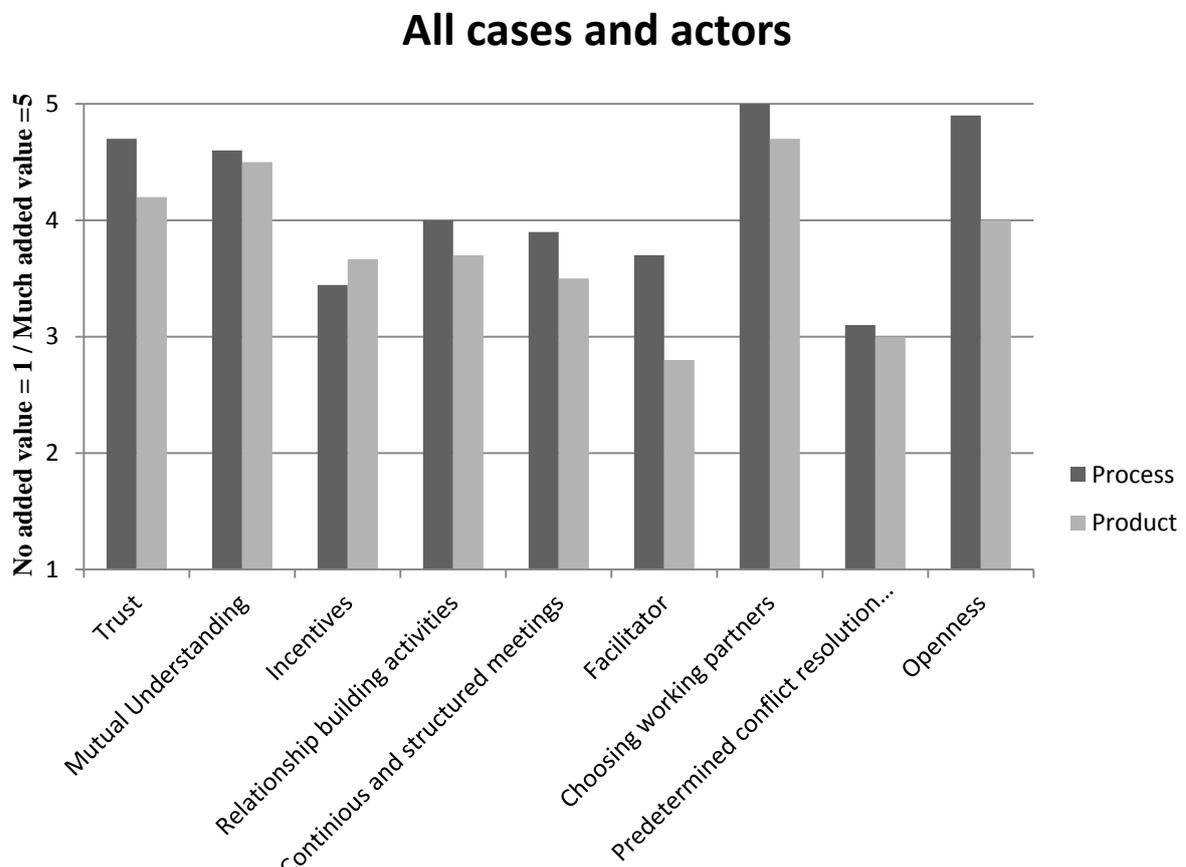


Table 5: The mean values of the compiled data collected from the four different case and the ten quantifications made from interviews. (1=No added value, 5=Much added value)

It can be observed in Table 5 that trust, mutual understanding, choosing working partners and openness have considered affect both the process and product the most. The components with the lowest effect are facilitator and predetermined conflict resolution.

Choosing working partners have received the highest value in both the process and the product of all components. What can be said is that the component is considered by the interviewees not to be limited to the selection of the main contractor. According to several interviewees' opinions, choosing working partners should extend to the project participants that are considered to affect the product value the most. Moreover, it is not as important to choose which organisations to include but rather which individuals.

All components have received higher process value than product value which indicates that the components in question are more likely to be connected with process value rather than product value. However, there is one exception, where the value of the product is superior to the process value which is incentives. In the interviews possible explanation is put forth as when the contractor has reached the maximum incentive outcome, is contractor induced changes to the project considered by other actors to be beneficial for the product.

All interviewees have participated to different extent in the projects; some have been involved throughout the entire project, others might only have been involved in the early stages. The inconsistency concerning involvement of actors has resulted in some interviewees not being able to respond to all questions from the interview substrate.

When individuals have quantified the components, a problematic issue was identified in the sense that what is perceived as "Very much" and "Not much" is highly subjective. In example, an interviewee could argue a component has a low effect on value, yet still quantify the component with a four or five which would indicate a high contribution of value.

## 5 Discussion

In order to illustrate the connection between partnering components and process and product value, a dynamic process of interaction towards product value is drafted with the constituents of *Inclusion and Involvement, Socialisation and Motivation*. During the analysis it was observed that the examples regarding the components could be categorised and divided to the constituents.

The word involvement often used in the interviews seems to be of importance in several, if not all cases. The word however, emerges to be more multifaceted than observed at first glance. Some of the interviewees used the word involve, synonym to the word include, meaning that the contractual structure surrounding the partnering collaboration was key in obtaining a higher process and product value. Examples of such structures were the need for monetary incentives and participation in workshops in order to create motivation for craftsmen, thus involving or including these parties. In the Arena case as well as the Nursing home, a more unstructured approach was deemed to be a vehicle for success. Informal socialisation and untraditional channels of communications point to increased enthusiasm and will to increase product value amongst craftsmen.

As can be observed in Table 5, some components were assigned a higher score than others. Trust and mutual understanding were two of four components which received high scores in Table 5 based on interviews and also in Table 1 based on the findings of Nyström (2005). In addition, the components choosing working partners and openness which received top scores in Table 5 but are the components least represented in literature, according to Nyström's (2005) study. The reason for the non-conformance in practice and academia is difficult to explain but could be a subject for further research. However, there were two more components which were distinguished in a different manner and these were facilitator and predetermined conflict resolution methods. These two components received the lowest scores in the interviews but are included in the middle segment of Nyström's (2005) study. Interestingly, the manner of how interviewees' perceived these two components was diverse. Some assigned low points since a direct benefit of the two components was not obvious. Other interviewees rewarded the components with high scores since they saw an indirect process value of the components. As a consequence facilitator and predetermined conflict resolution methods can be perceived as support functions which might be important for a partnering collaboration but fail to be included due to the specific purpose of the study.

### 5.1 Inclusion and involvement

In all projects, except the Apartments, the user, or user representative, were present in the project phase. In some sense, the definition of what product value was derived from the user's expectations of the new building. On the other hand, all other actors most likely had another definition of value and consequently these actors then had to interpret the expectations of the user. When looking at the nature of value, Salvatierra-

Garrido & Pasquire (2011) state that there are five aspects to take into consideration; objective, subjective, relative, context dependent and dynamic. Probably, an individual's view on value is a mixture of all five, but foremost it should be the subjective side which is topic for interpretation. It could also be argued that the dynamic side is the part which enables a mutual understanding to occur. As the perspective of value changes over time it should be beneficial in regard to mutual understanding to keep different actors involved in the project through a long period of time.

An example of the impact of user involvement can be observed in the Nursing home, where the user informed and educated the craftsmen regarding the design of the building as an important part of the patients' healthcare. Through sharing the user's knowledge of dementia the craftsmen felt involved in the process, according to the user. The user managed to create a purpose for craftsmen to care about the product value. Likewise, the user's involvement created a purpose for the user to care about the process values. This change of priorities can be observed in Figure 4 below. The figure illustrates how workers traditionally hold process value to be more important than product value. However, as observed in this case, an involved end-user, or in this case a user representative, could increase workers focus on product value. Likewise does the user representative, consider the process value to be increasingly important when involved in the process.

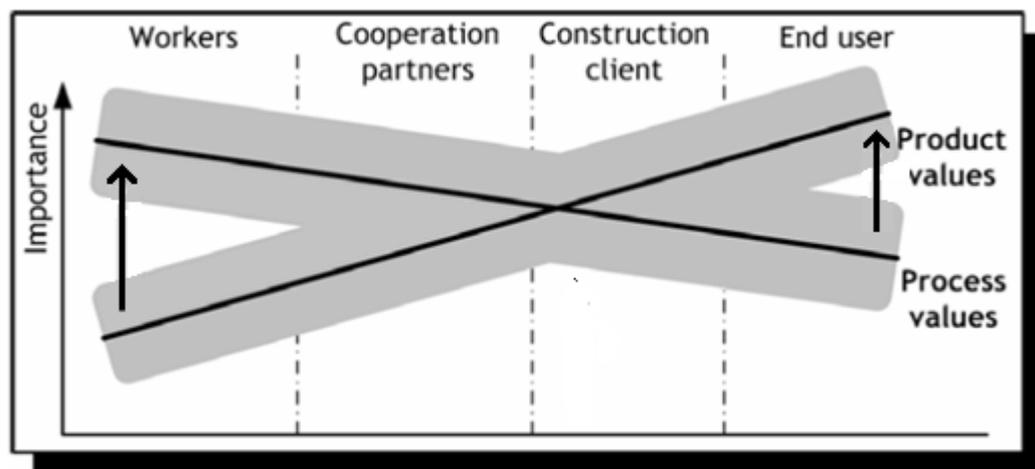


Figure 4: Illustration of how different actors consider the importance of process values respectively product value and how the focus can change (Modified from Wandahl, 2005).

It is important to highlight that the users in the case projects were user representatives whom in all cases represent an inhomogeneous group of end-user, except the Nursing home. The user in the Arena put emphasis on the difficulty in satisfying the needs of all end-users. In the Apartments, the participants' in the projects were unaware who the end-users will be. Therefore it becomes extensively difficult to meet the expectations of this group. Even if a user representative was available, the subjectivity

of the end-users interpreted by the user representative could render the user representative as an insufficient representative for the end-users.

In the Hotel, the contractor expressed how the choice not to include consultants in the incentive structure led to a more expensive design phase than the contractor had estimated. Not to involve consultants into partnering is something that Ng, et al. (2002) also noted to be unfavorable. In the Hotel, the consultants were formally included in the partnering collaboration, but not procured with the same economical conditions as the contractor and subcontractors. Why the contractor in this case believed that involvement of consultants could be favourable can be due to that the consultants are, to some extent, unaware of the construction process and that the contractor and consultants were not able share knowledge. This view aligns with that of Nyström (2005) who argues that in a well-functioning collaborations actors should be open in sharing information. Arguably, involving consultants into relationship building activities and in example incentive structures could provide a common ground where contractor and consultant could communicate (Bresnen, 2010).

Easier said than done, the solution to successful partnering projects with high process and product value is to include every actor more than in traditional projects. On the contrary, more involvement of actors does not guarantee that the collaboration would be any more efficient or yielding more value. In the four case studies, findings point towards that assumption, but in comparison to Josephson (2013) findings regarding the clients, in residential projects, were less satisfied with the contractors' ability to collaborate in partnering projects than in traditional projects. Other factors ought to be relevant for collaboration than the amount of time spent together, such as the desire, and incentive to meet demands.

## **5.2 Socialisation**

As explained by Nonaka, et al. (2000), the subjective side of knowledge is connected to individuals' value system. A rather obvious connection can be identified between terminologies used by Nonaka, et al. (2000) and Wandahl (2005), which refer to knowledge and value as subjective, tied to the individual value system and relies on personal human values. However, even though the subjective side of knowledge connects to the description of process value (See Figure 2), one should be careful in making this analogy. Individual's value system could be considered to be equally connected to product value as undoubtedly one brick type does not just possess technical properties but also appearance which contributes to more or less product value depending on different individuals' unique value system. To understand another person's definition of value then becomes a matter of interpretation of knowledge concerning expectations into specifications. Consequently, in this specific context, knowledge and value becomes synonym.

During the case studies, findings support socialisation as a medium for transferring the knowledge concerning expectations. Although, it is important to recognise that the transfer between individuals go both ways, or at least should. Looking at the component relationship building activities it is stated that knowledge creation can be

considered to occur during socialisation. Arguable is that what constitutes such activities does not necessarily has to be planned. Every social interaction between project participants could be considered as relationship building activities. Hence, more effort could be put on socialising and enable for *Ba* to occur (Nonaka, et al., 2000). To be put straightforward, a prolonged period of interaction between actors should be beneficial for mutual understanding in regards to process and product value, a statement which receives support by Nonaka, et al. (2000).

Looking at the Arena, which becomes an interesting case due to that the client shared the same office as the contractor and that the user was involved in the beginning but not in the end of the project phase. The client and contractor believed that they shared a mutual understanding, trusted each other and were open towards each other. This collaborative state was considered to have been reached due to the sharing of the common space during a long period of time. It could be argued that the co-location and socialisation itself provided the constituents of *Ba* (Nonaka, et al., 2000). The collaboration between the two can be described as close, but a possible downside of such a close collaboration could lead to exclusion of other actors. Meaning that a construct of a common reality might occur which becomes exclusive between the two and therefore might exclude other actors. Examples of excluded actors can be seen as the facilitator and to some extent the user, although, unclear is if the user's time in the project was due to that the user had no time to spare or a combination of exclusion and time constraints. Overall, the user was satisfied with the product, but there were a few details which did not quite fulfil the expectations. Considering the security level of the Arena, the demand was set too high which rendered in a more expensive product than was necessary according to the user. This can be seen as an example of what Wandahl (2005) refers to as the dynamic side of value, meaning that the specification drafted in the earlier stage was not seen as value adding when the building was complete.

Dewulf & Kadefors (2012) found that the co-locations of project actors enhanced the development of trust and openness much due to the constant interaction. This finding of Dewulf & Kadefors (2012) receives support in the Arena, where the client and contractor shared offices. Openness and trust was perceived to emerge to a greater extent than if the actors were not to be co-located. Examples of how the openness allowed for trust to emerge and in turn how trust resulted in product value are given by both the client and the contractor. However, it cannot be considered to be the actually co-location which creates the conditions for openness and trust in this case, but the extended and intense socialisation. It is not far-fetched to believe that the same effects can be reached without a co-location of actors. The same level of openness and trust could perhaps be reached with a prolonged time of interaction.

Another aspect of trust worth discussing is the downside of trust, meaning what Kadefors (2002) refers to as breach of trust which can become costly and devastating for the relationship. The client in the Arena agreed by stating that it is under trusting situation devastating decision are made. On the other hand, it can as easily be stated that when making a decisions, there is a probability that the decision is wrong. Although,

it is when trust becomes a substitute for a thorough investigation of options that the probability might be increased. However, there are indications in this case study that socialisation can aid in the construction of trust and increased collaboration. In extension it may provide actors with the desire to do right by the other actors.

The example regarding the interaction of the client and the contractor in the Arena can be seen as a process of how the co-location of the contractor fosters openness towards trust. The socialisation between the two actors is tightly connected to the component openness and trust adheres more to motivation. It is considered that culturally there is an amount of distrust between client and contractor as stated by Laan, et al (2011), but also calculus-based distrust (Kadefors, 2002) due to that much risk is carried by the client and that it can be advantageous for the contractor to act opportunistic (Laan, et al., 2011). However, it was observed in this study that openness was seen as a display of trust, and together with increased socialisation due to the open environment, trust is produced. Moreover, with an increased amount of trust in the relationship between the client and contractor, the desire to do right towards the project becomes unquestioned and decisions become more efficient.

### **5.3 Motivation**

Noticed in this study, is that incentives are used rather inconsistently by both people within the industry and literature, or perhaps, incentive is a word with many implications. Usually in the partnering context, incentives are used as a diverse economic motivator in addition to, for example, fixed wages. Another aspect worth mentioning is what Bresnen & Marshall (2000b) distinguish, that there is a difference between organisational and individual motivation and commitment, which do not necessarily correlate. Furthermore, incentives could be anything which motivates individuals or organisations to perform a task, which is why it is multifaceted and probably is why it is a subject of many opinions.

What drive or motivates human beings is highly individual, some might need economical motivation, and others might need to feel a strong sense of purpose in their daily work. Rhodin (2002) discusses theories of individuals being rational and driven by a short-term vested interest in maximising self-interest, which could be true to some extent, but categorising all individuals in the construction industry into one category would be rather naive. An example which contradicts the theories of individuals being driven by a short-term vested interest in maximizing self-interest is found at the Nursing home. The example of the grumpy craftsman in the Nursing home case is rather illustrative of what could be done with small means and that the specific craftsman was, not completely at least, motivated by economic incentives. The user and architect took a half day to talk with the carpenters about the patients and their disease which, according to the user, created an understanding amongst the carpenters. With the changing attitude, a commitment towards the patients and the project was developed which resulted in an increased product value through innovative solutions by the carpenters, according to the user. What this could indicate, is that it is possible to motivate craftsmen without financial incentives, since the

Nursing home did not utilize any individual economic incentives. However, this somewhat contradict Bayliss, et al. (2004) and Dainty's, et al. (2001) arguments, that incentive based contracts is one of the most effective tool to achieve success in partnering projects and without economic incentives, it will become more difficult to succeed with partnering.

Organisational incentives as a motivational tool are a matter of varying opinions by interviewees, both between cases and actors within the projects. In example, at the Arena, there seemed to be a mutual understanding between the client and contractor concerning the contractor's incentives. Perhaps more specific, the client understood what effect it would have on the project whether the contractor made profit or not. The client argued that if the contractor would receive full incentive outcomes, there would be less disputes, the contractor would focus on the project rather than finding solutions which would increase the contractor's incentive. This was the case at the Arena, where the client made sure that the contractor would receive full incentive outcome. Furthermore, when the contractor knew they gain full incentive outcome, it was easier for the client not to question the contractor's motives when the contractor wanted to implement changes. Questioning contractors' motives towards changes was a concern shared by the user and the reason to why the user was sceptical to whether incentives benefit the product at all. Throughout the interviews with clients in the cases, there were concerns that incentives could affect performance or quality negatively. However, is it possible that the expressed concern by clients and users is a reflection of an insecurity of their own competence?

Nyström (2005) discuss incentives as not necessarily being related to monetary incentives, but could be connected to other parameters. Implementing incentives related to the process is only seen at the Hotel, where bonus systems related to key issues for the project was implemented. The bonus system concerned both time and process, where the process bonus was evaluated based on parameters from the partnering charter. The client and users will to utilise bonus on the process could be viewed from two perspectives, either they believed there is a strong connection between process values and product values, or because they wanted a minimal effect on ongoing business at the Hotel. Regardless the reason, the Hotel do challenge this study's perspective on product value, since at the hotel, the ongoing activity is their product which make the process value and product value entwined. Therefore, this example show, that understanding what the product value is could improve the process value.

In conclusion, the different cases illustrate that incentive as a motivational tool should be monitored closely and carefully designed, which is supported by Bresnen & Marshall (2000b). The reason why incentives should not be used routinely is simple, organisations, actors, and individuals can have different motivation drivers, thus incentives should be reviewed before each project, and if incentives are considered to affect the process or product at all, connect the incentives with the product's best interest in mind.

## 6 Conclusion

This study seeks to further understand the core of partnering related to process and product value with a practice perspective. In order to identify the elements of partnering, a theoretical framework is established consisting of partnering and value related literature. Through examining four case projects and conducting interviews with clients, contractors and users in order to find practice based examples of how partnering affect construction projects.

1. Which of the elements of partnering discussed in literature are deemed to effect both process value and product value?
2. How is the linkage between the elements of partnering and process value and product value manifested?

### 6.1 Research question 1: Partnering elements deemed to affect process value and product value

What can be observed in this study is that the connection between the components included in partnering drafted by Nyström (2005) and the view of process and product value of Wandahl (2005) is not all clear. It proved difficult to actually exemplify to what extent several components has entailed an increased value, especially when it concerns the product value. A possible explanation is that the components are connected directly to process value and indirectly to product value. This explanation receives support in Table 5 where every component, except incentives, receives higher values in process value than in product value.

The following seven components is deemed to be connected to both process and product values by exemplification:

- Trust
- Mutual understanding
- Incentives
- Relationship building activities
- Continuous and structured meetings
- Choosing working partners
- Openness

But some components are perceived more difficult to connect to product value, but could be seen as support functions:

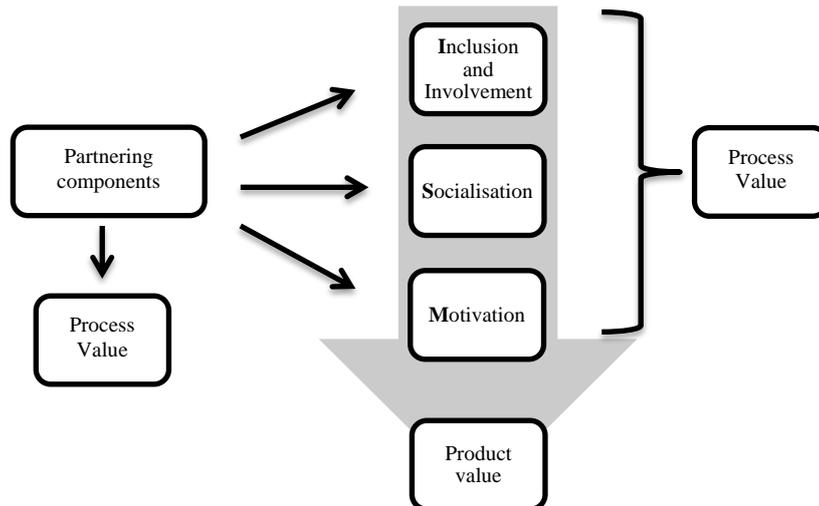
- Facilitator
- Predetermined conflict resolution method

It is important to highlight that facilitator and predetermined conflict resolution methods are not to be seen as unnecessary, rather fail to be included to the specific purpose of this study. With another purpose and another perspective on value, the two components might be displayed to provide more impact. In addition, the two

components could also be seen as necessary to provide the foundation in order to exercise the other seven components to full extent.

## 6.2 Research question 2: Linkage between the elements of partnering and process value and product value

In order to illustrate the linkage of the partnering components to process and product value, a dynamic process of interaction towards product value is drafted with the constituents of *Inclusion and Involvement*, *Socialisation* and *Motivation*.



*Figure 5: The figure shows how the part of the process value generated in the partnering collaborations can create product value.*

The figure consists of the relational factors Inclusion and Involvement, Socialisation and Motivation which can be considered to constitute the core values of partnering. However, questionably is whether this figure correlates more with successful projects, disregarding the label of the collaboration, than exclusively partnering projects. This is a statement which in some sense questions the use and the need of the components. Nevertheless, in the observed projects the partnering components are considered to have been beneficial in obtaining a higher process value and product value. This indicates that if partnering is adapted, which has been seen in the case projects, to the context of the specific project, increased value can be acquired.

## 6.3 Further research

An interesting area of research can be observed in the comparison between Table 1 and Table 5. Looking at Table 1, it is noticed that the component “Choosing working partners” and to some extent “Openness” is represented to a lesser extent than the other components. On the other hand, an examination of Table 5, which is constructed from the interviews conducted in this study, the same components are perceived to have a high impact on process and product value. Therefore, to further study these two components effect on the outcome of partnering collaborations, can be an

interesting subject for further research. Moreover, these two components would be interesting to observe in projects not labelled as partnering projects as well.

Another area for research is the issue regarding involvement of actors. In this study it is considered to be beneficial to extend the collaboration by involving additional actors into partnering projects. The effect of involving actors such as consultants, subcontractors and construction workers would be interesting to further examine with a value perspective. Additionally, a question which arise concerning which the shape, or characteristics, this increased involvement would take.

A problematic issue which has been highlighted during interviews, but fail to connect to this study's purpose, is the impact of selecting project partners. With a procurement process focus it would have been interesting to investigate underlying reasons for choosing some actors and disregarding others in partnering projects.

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# Appendix 1

Rank the components from 1-5, of how you perceive the components to add value to the project.

1. No value

5. Much value

- If you consider the component to not have been included or used in the project.

<b>Components</b>	<b>Status</b>	<b>Process</b>	<b>Product</b>
<b>Trust</b>			
<b>Mutual Understanding</b>			
<b>Incentives</b>			
<b>Relationship building activities</b>			
<b>Continuous and structured meetings</b>			
<b>Facilitator</b>			
<b>Choosing working partners</b>			
<b>Predetermined conflict resolution method</b>			
<b>Openness</b>			