Juha Haimala

SUPPLIER'S POSITION IN PROJECT MARKETING NETWORKS

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ABSTRACT

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The present study explores relationships between project marketers and their customers in project marketing context. The purpose of the study is to increase the understanding on supplier's position in project marketing networks.

Project marketing is representing a high volume in the international business, and the industrial network approach and the project marketing research cannot fully explain a supplier's position in project marketing networks. Increased knowledge on project networks can also contribute to industrial marketing research more generally.

Data for the present study was collected firstly during the pilot case study from project buyers in the paper and the steel industry in interviews. Secondly an entire project marketing case concerning a steel industry case was used as a data source. The data included interviews, correspondence between the supplier and the buyer, and project documents. The data of the pilot case was analysed with contents analysis, and in the case a deeper analysis based on the developed Stage Dimension framework was used.

Supplier's position in project marketing networks is a hierarchical and dynamic concept including a supplier's position on the highest level. The dimensions of the position concept are the intermediate level, and the dimensions are based on the underlying components. Supplier's position is composed from four organization related dimensions, and two individual actor related dimensions. The composition of the supplier's position varies during the project marketing process, and consequently the relative importance of the dimensions is changing over the process. Supplier's position in project marketing networks is shaped by incremental and radical changes. Radical changes are initiated by critical events.

The study contributes to the research of industrial networks and project marketing. The theoretical contribution of the study is threefold: firstly it proposes a structure of the position concept in project marketing networks, secondly it proposes the Position Stage Dimension Component (PSDC) model for the development of supplier's position during the project marketing process, and thirdly the study widens the critical event concept to cover the project marketing process both on the organizational and individual level. In addition to the theoretical contributions there are several managerial implications for planning and implementing marketing strategies in the project context.

Keywords: position, network position, projects, project marketing
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I believe that it is justified in asking, why would someone want to start a five year project in order to receive a doctorate degree? In my case the answer is twofold, or even threefold. First of all, the daily activities involved in practical project marketing and especially the sometimes very bitter and painstaking lessons learned, initiated a need to find explanations. Otherwise trying to be part of the project marketing environment would fall short. The second reason for undertaking this doctorate was to simply prove to myself that I could do it. We can call that the Finnish element that is also sometimes called as "sisu". The third reason was related to balancing my state of mind. The thinking processes involved during the five years provided me with an excellent way for forgetting the daily problems related to the challenges at work.

My experience in practical project marketing turned out to be the most challenging part of the project. Everybody seemed to have a different idea about how the experience should be utilized. All agreed that the experience was an advantage, but there was no consensus about how to use it in the research. Now it is up to the reader to assess whether the utilization of the experience has been successful or not.

This kind of research when undertaken by a part-time student (or part-time worker) would not be possible without the help and support of numerous people. One thing I was envious about, with regards my colleagues in academic world was the endless possibility they have to share views and discuss problems and challenges with other researchers. Therefore, I would like to sincerely thank my supervisor Professor Risto Salminen for the time and energy he spent in discussions concerning the study. I have never asked him if there were times when he regretted accepting to supervise me, but I assume there were. I would also like to thank Professors Henrikki Tikkanen and Kim Wikström for their valuable comments as pre-examiners of my thesis. Mr. Nicholas Kirkwood deserves thanks for improving the quality of the language of the report within a very short space of time. There was also a wide array of people showing interest in my research project, and who encouraged me to complete it.

There is one team that deserves the most sincere thanks: my beloved family. Taru, my wife, was able to control my working pace in a very skilful way. When my head was steaming from too much work, it was relaxing to hear her say "It's time to take a break." And when there was a tight deadline for completing a piece of work, support was always available. My two daughters, Anna and Maija, became accustomed to their father being in

“the writing mood” every now and then, and their words of comfort “we are sure that you will get it soon done” were very motivational. There was, however, one member of the family that did not share my enthusiasm for the research: Veeti, my black and white Border Collie. It was impossible for him to understand why I wasted so much of our valuable time writing. There were so many tracks to be found and people to be traced in the woods.

There is time for everything, and now, after completing this thesis, it is time for me to enjoy other areas of life. New challenges will certainly appear, but I will look at them from another perspective, due to this very educational period of my life.

Vihti - 31 August, 2008

Juha Haimala

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1 INTRODUCTION

1.1 Researched phenomenon and background to research

In long and complex project marketing processes it is often difficult to know how customers actually view suppliers in the web of connected actors who are all related to either existing or future projects. Such a web can also be called a project network, and it can be comprised of multiple suppliers, customers, customers of customers, consultants, and authorities, just to mention a few. Project networks are like other business networks, but only on a temporary basis, as they exist only as long as a project lasts (Dubois and Gadde 2002). It is common that a project marketing process can go on for years, with a lot of changes taking place in the particular environment, in which the actors of such a scene act. Suppliers try to improve or maintain their position in the network in order to be a preferred supplier. In reality though, this may be difficult, as it is not known what is important to the customers when they are making comparisons between suppliers, especially when taking into account the time perspective: Do the customers' priorities remain the same, or do they change over the course of the process? Being a preferred supplier is vital, with it being equal to being the preferred business partner, as actual business opportunities only exist for a limited number of suppliers, with only one of them eventually securing the contract for a given project. Often, as will be presented in the empirical part of the study, a novel technology is applied in a project to solve a customer's problem.

This research has been triggered by experiences in practical project marketing fields. The researcher has worked in a small automation company, the focal company, which has been marketing projects in different industries for 20 years. The researcher has a pure engineering background, and at that time, when he attended university, engineers tended to study only courses, which concerned the hard facts of technology. Subjects like marketing or finance, or those even slightly related to running a business, sounded too far removed from the world of engineering to receive any focus. However, in the later stages of the researcher's career the business world, in which marketing and sales together with other non-engineering matters are of top priority, has become prominent.

In 2003 the researcher, or actually at that time the export manager of the focal company,

was returning home from a final meeting with a paper mill in Austria. The meeting was with regards to a new automatic system for the handling of paper rolls. Business was blooming for the focal company, which had just delivered the largest automatic paper roll storage system in the world to Italy, and felt confident that success could follow in any project. However, the case turned out to be a total disaster for the focal company. Not only did it loose the Austrian project, but when taking a closer look at what happened during the marketing and sales process, it can be seen that in actual fact there never was a project for the focal company to pursue. A local competitor, which already had a long-standing relationship with the customer, was favoured above all other suppliers. The other suppliers were involved, to a lesser or greater degree, as the customer's internal purchasing procedures required that more than one supplier should be involved. Another reason for having multiple suppliers tendering for the project seemed to be due to the need for application specific information, which the local company did not have, as they had never built a system like the one needed in the project.

The focal company had heavily relied on its recent success in Italy, and tried to gather the same supplier network for the Austrian case, and had even hired a very experienced German speaking project manager in advance to assist in the last negotiations. However, after all of its efforts it seemed that the focal company had miscalculated its position during the whole process of the competition to acquire the project contract. The circumstances of the Austrian case dwelled on the researcher's mind for a long time after the actual events. The burning question was, how do buyers actually assess the suppliers in such a discontinuing, uncertain, and complex project marketing context (Mandjak and Veres 1998), in which both single actors and supply networks compete for a customer's preference. What actually is the position of a supplier? How is it formed during the project marketing process? Whose position should we actually be talking about? And who makes the final decisions for what in most cases a group of decision makers would be involved?

One can describe projects as temporary networks (Dubois and Gadde 2000) comprising actors, activities in which tasks and skills are coordinated and established both within individual firms and between them in various inter-firm networks (Whitney 2006). Organisational research uses a concept project based firm (see e.g. Whitney 2006), which refers to the fact that an entire company has been structured around distinct projects in which companies or individuals with different skills are brought together to develop and supply products and services sometimes based on singularity. Relationships between actors are either intentionally built, or they develop due to interactions in the project context. Projects as

network follow much of the elements suggested in the network approach (see e.g. Håkansson and Snehota 1995). Project networks reflect the complexity of projects (see e.g. Madjak and Veres 1998), and network positions of actors are difficult to predict or define, even after 20 years in the business. Actors take actions so as to attain a more favourable position, but often the actions resemble shadowboxing, as the elements of the position in project marketing context are not known. So how can a marketer assess what the main factors are that form the positions of a supplier competing for business? Is it the organisational level factors that compose the positions, such as competitive advantages or core competences (Prahalad and Hamel 1990), or is a supplier's position the consequence of the cumulative nature of the use of resources to establish, maintain and develop exchange relationships (Johanson and Mattsson 1992, 211) as argued in the network literature, or is it the social or personal contacts made that contribute to the success of the marketer (Skaates and Tikkanen 2003, 506; Cova, Mazet and Salle 1996, 650)? All business interactions take place between individuals, but what actually is the meaning of the personal contacts in the temporary network appearing in project business? Personal contacts and interactions result in relationships between individuals, but is it possible that the position of a large organisation or even a supply network is greatly influenced by personal relationships, or does it sometimes even depend on individual actors?

Existing literature provides some partial explanations to the problem but does not explain it thoroughly. This was the reason for the researcher starting the long and winding road to finding out about the positioning of suppliers by project buyers. The literature related to this research includes industrial network approach literature (INA or IMP literature)[1], but naturally also project marketing and general business literature. The research also touches upon literature on personal relationships in business (see e.g. Skaates and Tikkanen 2003; Cova Mazet and Salle 1996; Björkman and Kock1995), customer perceptions of service businesses (Edvarsson and Strandvik 2000; Holmlund 1997; Holmlund 1996; Holmlund and Strandvik 1999), and purchasing literature concerning supplier selection (see e.g. Möller and Laaksonen 1986; Wilson 1994; Min 1994; Yussef and Zairi 1996).

We can conclude that the perspective of the present study is INA-based. It might have been justified to utilise, for example, resource based view (RBV) literature[2] and transaction

[1] The IMP (Industrial Marketing and Purchasing) Group was formed in 1976 by researchers from five European countries. The Group has carried out a number of studies into business relationships and the wider networks of which they are a part.

[2] The resource based view of a firm (RBV) is the strategic management theory of the firm, which regards a firm as a collection of resources, skills and capabilities (see e.g. Penrose 1959, Barney 1991, Foss and

cost analysis[3] (TCA) because a "*project can be regarded as a complex transaction covering a discrete package of products, services and other actions designed specifically to create capital assets for the buyer over a certain period of time*" (Cova, Mazet and Salle 1994, 30). The researcher decided to use the industrial network approach due to its wider coverage of the elements of the project business environment, such as interactions and relationships. In addition to this approach the perspective of the study was expanded to include literature on project marketing, personal relationships and customer perceptions in business.

1.2 Research problem, purpose and the objective of the research

This study explores relationships between project marketers and their customers in the project business and project marketing context, and its purpose is to increase understanding of customers' positioning of suppliers in the field of project marketing, and more generally in the project business. The position of a supplier from a project buyer's perspective measures how preferred a supplier is as a business partner compared with other suppliers. While positioning the project suppliers the project buyer arranges the suppliers in his mind in order of preference. The present study *only focuses on the parts of the project marketing process and network up to the placement of an order and the signing of a contract for a project*. Hence, the remaining parts of the project marketing process are not studied. Where earlier events or projects have had an influence on the case being studied, those factors are looked at. Such elements might concern, for example, an actor in a project marketing network who has built a relationship with the buyer through some earlier project. What takes place in the project after selecting a supplier is not studied, even though it may be very significant from the perspective of any following projects. Hence, the focus of the present study is limited to a clearly separable part of the entire process. Earlier research on changes in business networks indicates that there are two types of change processes in business relationships: incremental changes and radical changes. Radical changes bring about a significant change in a relationship, for example, putting an end to it or producing a sudden improvement in it

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Robertson 2000).

[3] Transaction cost analysis (TCA) is a theory which tries to explain the optimal boundaries of a firm by the transaction costs or economic costs of co-ordinating economic activities (see e.g. Coase 1988, Williamson 1975).

(Easton 1992; Håkansson and Snehota 1995; Halinen, Salmi and Havila 1999). In the present study *the focus is on radical changes*. Incremental changes are looked at from the outcome perspective, and the account of them is limited to describing the changes between the different stages of the project marketing process. Radical changes are covered in more detail and the account of them describes events initiating radical changes (critical events) and the factors they influence (dimensions of position and components of dimensions). The present study focuses on a novel solution to a problem (c.f. Robinson, Faris and Wind 1967) in a situation where there are uncertainties related to multiple factors both on the buyer's and supplier's side (c.f. Cova, Ghauri and Salle 2002, 23-25; Xu, Bouver and Smith 2005, 49-50).

The objective of the research is to develop a model explaining the dimensions of a supplier's network position within a temporary project network during the phases of the project marketing process. The objective shall be met by answering the research questions concerning the governing dimensions of a supplier's network position during the project marketing process and changes in temporary project network, and specifically how the project buyers perceive them. The degree of structuredness of the research problem influences the research design and research methods, which on the other hand have influence on the research questions (see e.g. Yin 1994; Ghauri, Gronhaug and Kristianslund 1995). A structured problem is better understood than an unstructured problem. The research problem in the present study is neither fully unstructured nor fully structured. There is already research on network position, but the results do not describe the reality of network positions in the project marketing context. The current research is not able to visualise the concept of network position in detail, as the dimensions of the network position concept in literature are not fully applicable, or they are simply contradictory. Current literature (c.f. Johansson and Mattsson 1985; Jansson 1989; Mattsson and Johansson 1992; Henders 1992; Turnbull, Ford and Cunningham 1996; Andersson et al. 1998; Aastrup 2002; Cova, Ghauri and Salle 2002; Gustafsson 2002) defines a number of dimensions for the network position concept (e.g. identity, role, importance, strength of relationship, access, expectations, reputation, functional position, and relational dimension) and assumes that the dimensions remain the same and the concept can be operationalised during the whole project marketing process based on the same dimensions. Due to the rather simplistic and unstructured knowledge regarding the network position concept in the project marketing context, and the fact that the researcher is interested in developing a theory regarding network position in the project marketing context, an explorative study developing propositions seems logical (Ghauri, Gronhaug and Kristianslund

1995).

Research questions indicate gaps in the scope or certainty or knowledge, and to be able to answer one the researcher must be able to answer the following questions: what is the problem, and how should he/she as the researcher proceed to solve the problem (Ghauri, Gronhaug and Kristianslund 1995, 11). Following the argumentation presented in Chapter 2 (Pilot Case Study) and in Chapter 3 (Literature Review), the first research question logically is:

1. How is the supplier's network position composed in the project marketing network during the project marketing process up to and until contract placement?

The underlying purpose of a study like this is to strive for a holistic view of the phenomenon by taking either the supplier's perspective or the buyer's perspective. A supplier may be striving, for example, to attain a certain position in the marketing process. As aforementioned at the beginning of the study, this whole study started due to the supplier's need to know why the buyer does not perceive the supplier in the way the supplier would expect or would want. Therefore, this study can only be based on the buyer's perspective, as otherwise we would not be increasing knowledge on the phenomenon of network position in the project marketing context. Hence, from the marketing point of view the researcher has chosen to study the buyer's perspective of the network position of suppliers in the project marketing context.

In the relevant literature the basic assumption regarding business relationships is that they are some kind of continuous changing process, or development, which can take any direction (c.f. Van de Ven 1992; Möller and Wilson 1995; Halinen 1997). Taking into account the temporary and process nature of projects and project networks (Dubois and Gadde 2002), it is justified in assuming that the importance of individual dimensions of the phenomenon of network position do not remain constant during the entire project marketing process. Logically, if the dimensions of network position are not constant, the following research question indicates another gap in the relevant knowledge:

2. How does the composition of the supplier's position in a project marketing network change between the stages of the project marketing process?

Following the logic of formulating and asking questions while doing research (see e.g. Strauss and Corbin 1990), it seems obvious that in case there are changes taking place in the phenomenon and in the context in which the phenomenon occurs, the researcher should be interested in finding out or explaining the matter expressed in research question 3:

3. What kinds of events shape the supplier's position in the project marketing network?

There is a hierarchical relationship between the objective of the study and the research questions. This relationship is illustrated in Table 1.

Table 1. The hierarchy of research questions based on the objective of the study.

Objective of the study	To develop a model explaining the dimensions of a supplier's network position within a temporary project network during the phases of the project marketing process
Research question 1	How is the supplier's network position composed in the project marketing network during the project marketing process up to and until contract placement?
Research question 2	How does the composition of the supplier's position in a project marketing network change between the stages of the project marketing process?
Research question 3	What kinds of events shape the supplier's position in the project marketing network?

The research design is influenced by the hierarchy of the research questions. The three questions are linked with each other in such a way that they have to be addressed in a specific order starting with research question number 1, defining the dimensions of the network position concept in the project marketing context. Subsequently, once differences are found between the dimensions of network position during different phases of the project marketing process, the differences have to be reported. And as a consequence, the driving forces behind any changes are of interest, as is stated in research question number 3.

In this section, Subchapter 1.2, the research problem and the research gap in knowledge were introduced, and answering the research questions was argued to be the means by which to solve the research problem. The research gap will be discussed more in Subchapter 1.3, which sums up existing research and knowledge on network position.

1.3 Justification for the research

In business and marketing studies position has been used in multiple ways. Positioning of a product suggests that positioning is something that is done in the minds of the customer (see e.g. Pride and Ferrell 1985, 193; Ries and Trout 2000; Kotler 2000; Darling 2001). Competition oriented positioning can either be based on measuring market share (see e.g. Henderson 1984; Ansoff and McDonnel 1990) or based on strategies for competition mainly from the brand perspective (Porter 1990, 34; Sjöström 1996, 32). A supplier can also apply a phase oriented positioning strategy in which positioning changes over time (see e.g. McKenna (1985; 1988; 1989; 1991). Positioning can also be relationship oriented, being based on how individual actors in the network are related to each other (see e.g. Johanson and Mattsson 1985; Johanson and Mattsson 2002). The latter, the relationship oriented perspective, is applied in the present study.

The earlier research concerning actors' positions in business networks falls short of explaining how the suppliers' positions are constructed from the project buyers' perspective. Earlier studies by Johanson and Mattsson (1985), Mattsson and Johanson (1992) and Henders (1992) introduced the basis of the concept based on the dimensions of an actor's role and identity in the network, and strength of relationships with other actors in the network. Johanson and Mattsson (1985) included the micro and macro position in their concept, in which micro refers to links between individual units and macro to an organisation's links to aggregated levels in the network (Wynstra 1994). Johanson and Mattsson (1992) further included in the position concept the link between resources and relationship development. Henders (1992) discussed the fitness of the actors to industrial systems in multiple roles. The basis of the position concept by Johanson and Mattsson (1985), Mattsson and Johanson (1992), and Henders (1992) has been applied in recent studies as well (cf. Hallen and Lundberg 2004). Earlier research on the subject is valuable, as it has enabled further developments. However, it does not seem to model the reality in the project marketing context accurately enough, as for example the project specific solution is not taken into account and the complexity of position cannot be modelled with so few dimensions. The whole network approach was initiated due to the correlation flaw between models and reality (see e.g. Ford et al. 2003). The network position concept proposed in the earlier studies (Johanson and Mattsson 1985; Mattsson and Johanson 1992, Henders 1992) is partly applicable in the project marketing context, as the dimensions of strength of relationships and identity of

suppliers can be determined, but there are more dimensions involved than originally reported. On the other hand, the dimensions of the role of actors and the importance in project marketing are unclear in the work of earlier researchers (see e.g. Johanson and Mattsson 1985; Henders 1992) and validity in the project marketing context should be verified. Role refers to activities by the actor, and can be linked directly to the project in question. A supplier can have a role in the business or industry, and consequently role can also refer to a supplier's identity. A supplier can e.g. have a role of front row developer of new innovations in the industry. The meaning of the importance dimension of network position in the network position concept is controversial, and even the existing literature seems to interpret it either as business volume or market share (see e.g. Henders 1992), or the actor's ability to preserve or destroy the stability of the network (Hallen and Lundberg 2004). The earlier research concerning position of actors in networks (Johanson and Mattsson 1985; Johansson and Mattsson 1992; Henders 1992) while applied to the project marketing context ignores one of the corner stones of project business, namely the solution to the problem aspect. A project does nothing more than provides a solution to a customer's specific problem, and no matter how important an actor (a supplier) is in the traditional sense, if the actor cannot solve the customer's problem, the supplier's position is marginal. Another problem for applying the traditional concept of network position in project marketing regards the personal relationships. The earlier research on the network position concept does not discuss relationships between the individuals in the network.

Anderson et al. (1998) widened the breadth of meaning of the position concept to include dynamism of relationships in business networks. Anderson et al. (ibid) suggest that dynamics in business networks can be explored by their position and role framework in which position represents stability, and role a change process. Hence, the role dimension mentioned by Anderson et al. (1998) has a different meaning to that proposed by earlier research (e.g. Johanson and Mattsson 1985; Henders 1992; Hallen Lundberg 2004). Aastrup (2002) redefined the network position concept for a specific industry, transportation, and in his definition an actor's position can have dimensions, such as dissensus/consensus of relationships, network logic and the actor's dependency in relationships. Even though the expansions to the position concept were interesting and valuable, they did not provide a means by which to understand the position concept in the project business context. There were no explanations provided for the dimensions of network position, and the solution to a problem aspect was not covered.

Cova, Ghauri and Salle (2002) have proposed variants of network position, with the aim to take into account the specific features of the project context. They suggested that functional and relation aspects should be included in the position concept. Functional position represents the solution specific elements, and relational position includes personal level relations between individual actors in a project. Cova, Ghauri and Salle (ibid) argue that relational position concerns the earliest stages of a project, and sometimes even the time, before an actual project exists. Personal ties which have been formed can therefore be argued to be an important factor in attaining a favourable position. The relational position proposed (ibid) has not been explained in detail, and its presence during the entire project marketing process has not been described. Personal relationships in business have been researched earlier (e.g. Granovetter 1992; Mainela 2007; Witkowski and Thibodeau 1999), but findings regarding the influence of personal relationships on network position are scarce in the literature. In project marketing literature personal level relationships are regarded as important, but the relationship between network position and relationships has not been researched. Instead, research papers have mainly concentrated on the general aspects of the social relationships, such as trust and commitment (Gustaffsson 2002; Blomqvist 1997; Håkansson and Snehota 1995, 32), the importance of which cannot be underestimated. Gustaffsson (2002) conducted a wide-ranging and interesting study on the project business and elements of trust in the supplier and customer relationship. However, the scope of his study was the entire project process, with the project stages up to and until the contract placement only forming a minor part of the study, with the main focus being on the implementation of projects.

It is justified in concluding that although the network position concept has already been researched earlier, the dimensions of the position concept have more or less been taken as given ever since the first research was undertaken. Even though there have been a number of attempts to expand understanding of the phenomenon (e.g. Aastrup 2002; Cova, Ghauri and Salle 2002), the current understanding is scattered and partial. None of the earlier suggestions alone can explain the formation of a supplier's position in temporary project networks, in which joint construction of demand is common, when a supplier tries to make the customer's demand his/her own and construct it together with the client in the course of interaction between them (Cova and Crespin-Mazet 1996, 350). We can also conclude that personal relationships and trust as isolated phenomena have been researched. However, the meaning behind those elements concerning how suppliers are positioned from a buyer's perspective remains to be explored in detail. It can be argued that there exists a gap in the current

knowledge.

Why is it then important that knowledge on project marketing and the project business is increased? Project operations are said to be one of the dominating modes of international business (Skaates, Tikkanen and Lindblom 2002; Hajdikhani 1996), and in this respect it is an essential element in industrial marketing, and projects in different forms represent a major proportion of international trade and business activities (Cova, Ghauri and Salle 2002, 4). It has been argued that one half of export from Finland and Sweden is projects (see e.g. http://www.swedishtrade.se/; Artto et al. 1998). However, even if projects are close to the volume mentioned, the marketing of projects is almost totally ignored in project business conference papers and journals, representing less than 1% of all papers (see e.g. Themistocleous and Wearne 2000; Zobel and Wearne 2000). This means that temporary networks are involved in a great number of economic actions, and respectively a great number of economic actions take place under circumstances, which are not necessarily fully understood. Deeper understanding of the project marketing context benefits specifically the research of projects, managerial practises, and more widely, the understanding of temporary or dynamic and short-term networks, and their positions in them are both central in the network approach and also in business activities in the project business. Owusu (2003, 51) point outs that short-term episodes and interactions are the basic analytical unit of INA, which form the analytical bases of longer-term relationships. Relationships are argued to be the key ingredient in industrial marketing, and it is the individual actors who interact in the relationships. Hence, all new findings should benefit from understanding the relationships in the industrial marketing context, especially as the industrial network approach tends to emphasise the importance of longer relationships (c.f. Håkansson and Snehota 1995, Möller and Wilson 1995). Respectively, increased understanding of shorter or new relationships would contribute to the scientific discussion conducted within the industrial network literature, as relationships are one of its central elements. Generally speaking, project marketing literature is so limited that there is room for new findings.

This section, Subchapter 1.3, has outlined the justification for this study concerning network position in the project marketing context. Subchapter 1.4 will introduce how the research problem will be solved and more specifically, what kind of research strategy the researcher will use.

1.4 Introduction to research strategy and process

This section introduces the academic research approach applied and describes the research strategy chosen. The selection of the academic research approach was influenced by multiple factors: 1) the research problem, 2) the researcher's personal experiences, and 3) the audiences the researcher seeks to address (see e.g. Baker 2001; Creswell 2003, 23). Easton (1995, 414) proposes a research choice framework, which includes two major components: hierarchy of decisions required to carry out a research project, and basic factors influencing the choices including axiology, ontology, epistemology, context, and constraints. The axiological[4] background, or the value and goal of carrying out this research, can simply be explained by the need to understand something that the researcher has been part of for a long time: the project marketing environment and the important concept of network position within it.

No interpretation of the project marketing network can be made independently of human sensations, perceptions, information processing, feeling and actions (Peter 1992, 74). Hence, the reality of the project marketing network, and the positions of suppliers within it, is an interpretation of the truth, and consequently follows a relativist perspective to ontology, in which reality is relative to situation and time (Tikkanen 1996, 32). We are not looking at one great and only truth through a window, like realists would do (Perry, Riege and Brown 1999). The fundamental assumption of the realist position is that there is reality out there waiting to be discovered (Easton 2000, 207). But, the discovery has to be based on interpretation.

The present research is based on a single case study approach. A case study approach was chosen due to its applicability to studying industrial networks (Easton 2000), as it allows theory building (Bonoma 1985, 206), and it is useful in studies concerning complex and real situations including social systems (Christensen and Hansen 1987; Pihlanto 1994, 371). While selecting the case, the main criterion is that the phenomenon has to be found to be as evident as possible (Yin 1994; Silverman 2004). The selected case was found to be suitable and interesting, as the phenomenon was found evident and strong, access to multiple data sources was possible, and it was possible to perform data collection soon after the project. The case selected was an automation project in the UK steel industry. One of the world's biggest steel manufacturers invested in its UK production unit in order to be able to meet the challenges set by its competitors in a very dynamic industry. The steel industry is witnessing extensive re-

[4] Axiology means the study of values: the study of the nature, types, and governing criteria of values and value judgments (see e.g. http://www.learning-theories.com/definitions).

organisation, in which mergers and acquisitions take place frequently, and companies are looking for efficiency and economies of scale. The UK mill decided to improve its competitiveness by investing in a fully automated distribution centre, and the application was claimed to be the first of its kind in the world. The marketing process of the automated system is explored and analysed in the present study. The network of the case comprises a limited number of suppliers, actors representing several activities in the mill but also external actors, such as competing suppliers, suppliers' partners, customers, and actors performing outsourced activities of the mill. The case follows the project marketing process from the first contacts between the mill and the suppliers until the final selection of the supplier of the project and contract placement with the chosen supplier. The interest is to explore the development of the position of the case company, a Finnish supplier of automated material handling systems, in a project network during the marketing process from the mill's perspective. The researcher worked in the case company as the person responsible for marketing and sales activities in the project.

The research process of the present study is illustrated in Figure 1. The research design is sequential, in which theory and empirical studies alternate to proceed with the study.

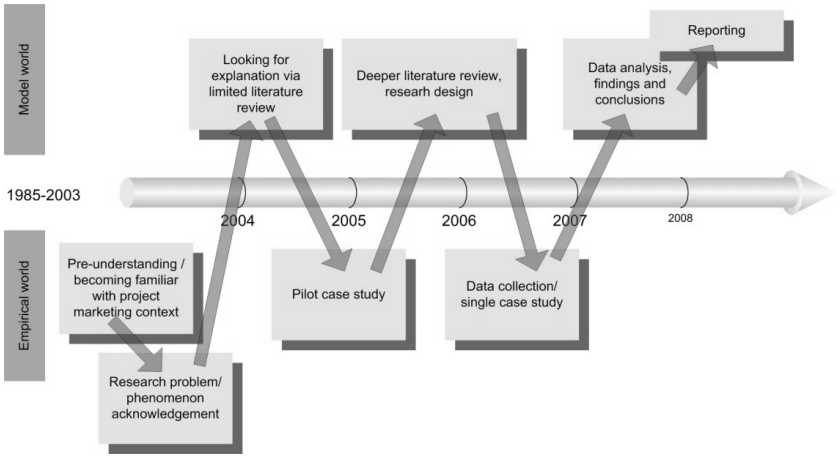

Figure 1. Research process.

The applied research design can be regarded as abductive reasoning (Dubois and Gadde 2002; Mason 1996, 142; Miles and Huberman 1994), but it has also been called iterative grounded theory (Orton 1997). The main characteristic of this approach is a continuous movement between the empirical and theoretical worlds. In this process, abduction starts with empirical observation, which then leads the researcher to hypothesise and the theory is

improved upon through new observations. During this process, the research issues and the analytical framework are successively reoriented when they are confronted with the empirical world (Dubois and Gadde 2002, 554), and the researcher aims at an improved understanding of both data and theory during the process (Andersen 2001, 170). The building of theory from case study research has been regarded as an iterative process (Eisenhardt (1989, 546; Wilson 1987). This study researches network positions during the project marketing process. Processual studies should apply terms of cycles of deduction and induction (Pettigrew 1997, 343), which in other words refers to abductive reasoning (Dubois and Gadde 2002).

Abductive reasoning is a process, in which theoretical framework, empirical fieldwork, and case analysis evolve simultaneously, and it is particularly useful for development of new theories.

The researcher's accumulation of pre-understanding commenced in 1985 when he moved to marketing and sales, starting with industrial robot applications, but since 1988 in the marketing of automated system projects for material handling. The industries involved mainly concern the steel and paper industries. One milestone was a contract for the world's largest automated paper roll distribution system in 2000. But after returning from a very unsuccessful customer meeting in 2003, which against all expectations had ended as a complete catastrophe from the business perspective, the researcher wanted to find an explanation for the events that had occurred. The question of how customers position suppliers in their minds demanded an answer.

Explanations to the question were searched for in the relevant literature in late 2003 and at the beginning of 2004, but a rather scattered and limited literature review brought about no concrete explanation of how customers position suppliers when projects are marketed. In summer 2005 a pilot case study was conducted in the steel and paper industries. But, results from the pilot case, instead of explaining the problem, actually created a number of additional questions. The network position concept in the literature did not seem to match with the findings of the pilot case study. The context, in which the original problem existed, and in which the researcher operated, seemed to be much more complex than expected, and it seemed typical that finding even a vague answer to a question generated multiple new questions.

In 2005 and 2006 the researcher dived back to the literature, but this time a wider approach was applied. However, the existing research did not seem to explain the phenomenon and the original question regarding how project buyers position suppliers in the

project marketing context remained unexplained. A case study concerning a project related to applying novel technology in the steel industry was conducted. Data was collected from multiple sources. In November 2006 decision makers in a UK steel mill automation project were interviewed. The project and its supplier had been decided on during the early part of 2006, but the actual marketing process was active from August 2004 until January 2006, and a lot of written data was accumulated. The data included project specifications, minutes of meetings, emails, technical and commercial clarifications, and also the diaries of the UK representative of the organisation of the researcher. Analysis of the data was conducted concurrently in 2007 along with the conclusions and the reporting. The final report, the doctoral thesis, was written during the first half of 2008.

1.5 Structure of the study

Chapter 1 is an introduction to the research topic. It presents the phenomenon being researched: the network position of suppliers in a project network. The chapter also defines the purpose and objectives of the study, subsequent research questions and the justification for the study. Following this, a brief summary of the research process is presented, and finally the structure of the study is explained.

In Chapter 2 the pilot case study is presented. The objectives of the pilot case study were to indicate relevant areas to be reviewed in the literature review and also to increase pre-understanding of the phenomenon and the existing research. The selection and characteristics of the pilot case companies are explained and after that the procedures used and results achieved are presented. Finally, the conclusions about the pilot case are made, and the implications for the following stages in the research process are presented.

Chapter 3 is a literature review of selected areas of literature, with the areas of interest being guided by the pilot case study. The literature reviewed includes INA literature and specifically position related research, project marketing literature, personal relationships literature, supplier selection literature, and literature on change processes in networks and business relationships. A research framework derived from the pilot case study and literature review is presented.

In Chapter 4 the research design is presented. It describes the research perspective and the research model, and subsequent selections made. Case study as a methodological choice is presented. Quality of research is discussed and criteria for high quality research are defined, and an explanation on applying the criteria to the study is given. The selection criteria of the

case study are presented, and the data collection and analysis is described.

Chapter 5 is the empirical part of the study and presents the project marketing environment, the project network and project marketing process. Thereafter, the description, analysis and the results for each stage of the project marketing process are given. Each process stage section ends with a conclusion concerning the relevant stage. For each process stage the governing dimensions of the position are reported with the underlying components. Also, the sources of changes to the position are named, and the affected components and dimensions identified.

Chapter 6 draws conclusions on the case findings. The conclusions are presented in three sub-chapters, which represent the three research questions posed in the introductory chapter of the study. The first sub-chapter focuses on the dimensions and components of the supplier's position in the project marketing network. The second sub-chapter describes the differences in the position composition during the marketing process. While the third sub-chapter presents critical events which are able to start a change process resulting in influences on components, dimensions, and finally on the supplier's position. The results of the study are then presented, with the study having both theoretical and managerial implications. The theoretical implications are derived from the conclusions of the study, which in turn are based on the results. Following this, the managerial implications are discussed, and finally further research topics are proposed.

2 PILOT CASE STUDY

The researcher must have a decent pre-understanding before entering reviewing literature on network position or positioning generally (see e.g. Salminen 1997, 7). The first literature review, however, covering mainly network approach literature and literature concerning position and positioning in marketing and strategy, did not bring about any significant break-through into understanding how a supplier's position is formed in project marketing networks. Hence, a pilot case study was conducted to find out about relevant areas of research and to capture the features of a phenomenon, and the findings in turn could be used to focus the subsequent literature review. Pilot case studies may also reveal inadequacies in the initial design, or may help to articulate it (Eisenhardt 1989, 539; Yin 1994, 52; Perry 1998, 790). Another usage of the pilot case study was to find out the suitability of the initial research design in mind for increasing the understanding on the phenomenon of interest, for investigating emergent themes and for taking advantage of special opportunities, which may be present in a given situation (Eisenhardt 1989, 539).

The working definition of a supplier's position in a project marketing network is *"preference as business partner from project buyer's perspective"*.

2.1 Objectives of the pilot case study

The *first objective* of the pilot case study was to guide the literature review to relevant areas. The *second objective* was to investigate how the view of the network position based on the INA and project marketing literature would model the supplier's position in the project marketing context. The *third objective* was to make sure that the pilot case study acted as a learning opportunity for the researcher into the scientific world, and to help him to refine the data collection plans with respect to both the content of the data and the procedures to be followed (Yin 1994, 74-75). The third objective was especially important for the researcher personally, due to his lack of research experience. It was vital that he became familiar with the procedures and varying requirements in data collection and data analysis.

2.2 Pilot case companies

2.2.1 Criteria for pilot case companies

Yin (1994, 31) suggests that cases should be selected in the same way a laboratory investigator selects the topic of a new experiment. The phenomenon being studied should be found in that laboratory as visible as possible, or one could instead use a deviant case approach (c.f. Silverman 2005, 215-219). The following aspects were taken into account while selecting the case companies.

The phenomenon under study is the network positions of suppliers in the project marketing environment. The laboratory should include a network of actors, and preferably multiple suppliers, i.e. competitors, which the customers position in their minds. Projects, as aforementioned earlier in the introduction, can be regarded as temporary networks (Dubois and Gadde 2000) comprising actors and activities in which tasks and skills are coordinated and established both within individual firms and between them in various inter-firm networks (Whitney 2006). Hence, the *first criterion* for case selection is that a temporary project network exists.

A project concerns capital investments, not commodities, and data collection in the pilot case should also concern such processes. Therefore, the *second criterion* is that capital investments must be involved.

Capital investment projects should be major for the organisations purchasing them, as in such cases it can be assumed that decision-making is performed as carefully as possible with many factors being taken into account. Major capital investment in this case means a significant investment in the company or business unit, and the significance can either be with regards to the size of the project or its importance to the buyer's business. Based on the significance of the project, industries with continuing processes are interesting due to high demands for projects. The significance of the project should also prohibit selecting suppliers purely according to personal motives. The *third criterion* is that the project is significant for the buyers.

The researcher has worked for the past number of years in the steel and paper industries, and has accumulated personal contacts that can provide easier access to information and companies than for others. Hence, the *fourth criterion* is that there exists access to companies.

As the researcher had been previously involved in the projects, he should be capable of

roughly estimating whether the data was usable in the first place. The *fifth criterion* is the personal involvement in the projects. Personal involvement may also create problems, if ethical matters are not properly taken into account, when the researcher's role is twofold (Creswell 2003, 184-185). On the whole, the advantages gained from personal involvement compared with the risks due to the researcher's dual role, were seen to be greater, with Ghauri, Gronhaug and Kristianlund (1995, 65) emphasising the interviewer's position in in-depth interviews, claiming that "*the interviewer should have a complete understanding of the research problem, its purpose and what information we are looking for*".

2.2.2 Selected case companies and informants

A summary on the selection of the case companies (informants) based on the criteria defined in the previous chapter is presented in Table 2.

Table 2. Summary on criteria fulfilment in case company selection in the pilot case study.

Case company/criterion	Temporary project network exists	Capital investments	Significance to buyers	Access to company	Personal involvement	Informants
Pilot 1	Yes	Yes 7 M€	Very high	Easy	Very high	3
Pilot 2	Yes	Yes	Very high	Easy	High	1
Pilot 3	Yes	Yes 2 M€	Very high	Easy	Very high	1
Pilot 4	To some extent	Yes 40 M€	Very high	Easy	Moderate	1

Case company Pilot 1 operates in the steel industry, and produces 500,000 tons of stainless steel products per year, and is located in the Netherlands. The manufacturing process of Pilot 1 is based on 24 hour production and is today fully automated. The project of Pilot 1 was a rather long process and the project network varied depending on the phase of the process. The number of suppliers competing for the project varied between 2 to 8, and the degree of complexity of the network can be argued to be high. The investment was a capital investment and it was defined in the company strategy. The project is significant to the buyer, as almost all its customer deliveries are handled by the project. Access to the company was easy, as the researcher was responsible for marketing and sales activities of the focal company for the project of the Dutch company, and he knew personally the mill manager and the project management. The focal company (researcher's organisation) delivered the project to the company in 2005 and 2006. Pilot 1 uses mainly external project organisations, and depending on the project, the composition varies. They have internal members in the

organisation, but they represent a clear minority. Typically, a project organisation including a buying centre has 5-10 persons. Informants at Pilot 1 included the managing director of the mill (marked P1-1), the project manager of the major development project of the mill (P1-2), and the project manager of a central part in the development program (P1-3).

Case company Pilot 2 operates in the paper industry and produces 800,000 tons of board and paper per year. The mill is located in Finland. There have been a number of project prospects in the mill in which the focal company has been involved during the past 15 years, but none of them came to fruition for the focal company. Due to the purchasing rules of the company, a project network consisting of a number of competing suppliers exists. All of the projects, which the project team is working on, are capital investments, and they are significant regarding the business of the mill. All investment proposals have to go through a multi-step evaluation process, first on the mill level, and if found feasible, on subsequent levels up to and until the global corporation level. The access to the company was easy, with the researcher being personally involved in the latest project prospects. Pilot 2 has a project organisation of its own for implementation of projects. They have also had external members in the organisation during the early phases of projects, when different solutions are analysed. Typically, project organisation includes a buying centre comprising 10-15 persons. The interviewed informant from Pilot 2 (marked P2) was an experienced professional project manager of capital investment projects in the mill.

Case company Pilot 3 is a board mill located in Finland producing 250,000 tons of board and paper per year. There was a project network included in the process, and the number of suppliers competing for the project was 3. The project was a capital investment and it was part of a larger programme aiming at increasing the production capacity and competitiveness of the mill. The project was significant to the mill, as it was a vital part of the new capacity built. The access to the company was easy. The researcher was responsible for the marketing and sales in the focal company for the project, and the focal company delivered the project to the mill in 2005 and 2006. Pilot 3 had a project organisation of its own during the implementation of the project, and depending on the project, the composition varies. They have also had external members in the organisation during the early phases of the project, when different solutions were analysed. Typically, project organisation includes a buying centre comprising 5-10 persons. The informant at Pilot 3 (marked P3) was a project manager of the development project, and also had vast experience in the mill and projects.

Case company Pilot 4 is globally the second largest company in the converting

business, and is based in Finland. There have been a number of project networks involved in the business represented by the focal company, but after first projects delivered by the focal company, their solutions have become widely applied globally in the company. In that sense, the competition in the project network has to some extent disappeared. All the projects delivered by the focal company have been capital investments, and they have been part of strategic moves by Pilot 4. The projects are significant in the production process of Pilot 4, and they could also be regarded as strategic investments. The researcher has only been involved personally in some of the projects delivered by the focal company, but is aware of all of them. Pilot 4 has a project organisation of its own, and depending on the project, the composition varies. Typically project organisation includes a buying centre comprising 5-10 persons. The informant at Pilot 4 (marked P4) had worked with large investment project responsibilities in different countries,

Table 2 illustrates that the criteria set for the case companies in Subchapter 2.2.1 could be met rather well. The data was collected from both the steel and paper industries, but the type of industry is not expected to have a significant influence on the findings, as both of the industries share similarities: continuous production processes, high availability requirements, and in-house experience in capital investment projects. Another discrepancy between the companies can be found in the type of relationship the case companies have with the focal company: three of them have had earlier business with the focal company, but one has not. This factor is also not expected to have significant influence on the findings, as the interviews conducted inquired about the positioning of suppliers on a general level and not with regards a specific project.

The next subchapter briefly describes the case companies and their businesses, and the informants of the study are introduced.

2.3 Implementation and analysis of the pilot case study

In keeping with the purpose of the pilot case study the following questions were focused on (see Appendix 1 for details):

- How are suppliers positioned, and what dimensions is the positioning based on?
- How are suppliers compared and selected?
- How do partnerships between suppliers influence their position?
- How do personal relationships between the supplier's and the buyer's personnel

have an influence on the supplier's position?

2.3.1 Data collection

Data was collected through interviews, which according to Yin (1994, 80) provide numerous advantages, such as them being insightful and allowing the possibility to focus directly on the case study topic. Interviews were semi-structured (see e.g. Creswell 2003, 188; Yin 1994, 85) and followed the frame shown in Appendix 1. They were recorded and transcribed. Both the interviewing and the transcribing were conducted by the researcher. Of the six interviews, the interviews with Pilot 1 were carried out face-to-face in Holland, and they were conducted in English on June 30, 2005. The interviews with Pilots 2-4 were performed by telephone and they were conducted in Finnish between July 4 and July 6, 2005. Details on the dates, duration of interviews, and the durations of the transcriptions are presented in Appendix 1.

2.3.2 Analysis of interview data and findings

2.3.2.1 Analysis

Transcriptions of the interviews were imported to AtlasTi CAQDAS (computer assisted qualitative data analysis software) and stored there. AtlasTi was used to assist in the analysis (coding) of the textual data. The software was not necessary for the amount of data in the pilot case study, but it provided a means by which to develop and test a single database for the subsequent steps in the research process, which would include more data.

In the pilot case study the method used was content analysis (c.f. Ricoeur 1981; Talseth et al. 1997) based on an interpretative analysis of the underlying meaning by means of the circular process of understanding. Interpretation of the text is a dialectic process, moving from understanding to explanation and from explanation to comprehension. The interpretation process starts by reading the text several times, in order to gain a sense of the whole, thus gaining a preliminary understanding of the phenomenon under investigation and its context, and discerning the essential features of the text. The statements that correspond to a specific theme are identified and transformed into meaningful units and then coded into themes and sub-themes (Ricoeur 1981; Talseth et al. 1997). The data analysis involves interpretation of the meanings from the researched phenomenon perspective, the network position of suppliers in the project marketing network. The final phase of the analysis is an interpretation of the text as a whole, the main interpretation, where the understanding gained from the story is

merged to form a new comprehensive understanding, that is, re-contextualisation (Severinson 2003, 60). While using qualitative content analysis the researcher should attempt to be as objective as possible, while recognising that all research, especially textual analysis, reflects the researcher's prior knowledge and expectations and, hence, is quite subjective. The goal is to be flexible and at the same time systematic. The result of a qualitative content analysis is an inclusive representation of patterns found in a corpus (Thompson 2001, 162).

Coding of the interview data was a process in which coded passages represented identifiable customer perceptions of suppliers: in organisation, in persons, in ways of working, in ties with other companies, in interaction, and so forth. Coding followed open coding (Straus and Corbin 1990, 61). In case an existing code fitted a new passage or word, it was applied, but otherwise a new descriptive code was added and a new theme created. After the first coding, another coding session was conducted, and themes (coded passages) were compared and evaluated in order to be able to merge themes and create more general and more representative themes. After the open coding another coding process was conducted in which connections were made between themes and sub-themes. This coding process was akin to what Strauss and Gorbin (1990, 97) call axial coding.

2.3.2.2 Results of the pilot case study

The findings of the pilot case study are presented in Table 3, and they are discussed in detail following it. The contents analysis of the data resulted in themes and sub-themes, of which themes represent dimensions of network position, which are in turn composed from components. A dimension is a synonym of a theme and a component is a synonym of a sub-theme in the present study.

Table 3. Summary on pilot case study findings, themes identified in interviews.

Main themes, dimensions of network position	**Sub-themes, components of dimensions**	**Explanation**
Supplier's experience	Industry specific experience Problem specific experience References	Known in industry Similar problems solved Demonstrate earlier success
Relationship	Relationship history Investment in relationship	Earlier projects with supplier Customer seen as important
Solution excellence	Solution to problem Solution implementation	Technically, economically Risk of failure to implement
Trust in supplier's people	Professional skills Cooperation skills	 Refers to implementation
Supplier's identity	Reputation Financial stability Experience	 Generally known
Events		Events shaping supplier's position

The findings of the pilot case study concerned themes representing dimensions of informants' perception of suppliers' position in the project marketing network. Themes or dimensions, which are the outcome of the axial coding, comprise components representing the outcome of open coding. The dimensions of the supplier's position in project marketing networks represented different forms of experience required from the suppliers, for example, elements of relationships between the suppliers and the buyer, aspects concerning the solution to the buyer's problem proposed by the suppliers, and a multi-faceted perspective to trust in suppliers by customers. One theme found in all of the interviews was related to incidents capable of shifting the supplier's position in the project network. Below, the results of the analysis of the interviews are discussed.

Dimension: Supplier's experience

When buyers start looking for sources of solutions to their problems they first of all look for those with experience on multiple levels. All of the informants were expecting the suppliers to be experienced. That is the ultimate pre-requisite for project suppliers to be taken seriously. A potential supplier must have industry specific knowledge and background in order to be even considered as a potential supplier of a project.

Even though there was some indication of a degree of openness to look for new innovations, even from other industries or applications, the attitude towards being a pioneer was somewhat hollow. Some of the informants were interested in new ideas, and this kind of open-minded solution finding was an option for them, mainly during the early phases of the process, when the objectives of the possible project were not necessarily clear. This openness seemed, however, to divide the informants into two groups. Steel industry informants leaned more towards new ideas than the paper industry informants. Experience alone, however, in the industry or in similar applications, is not enough for a supplier to become a potential supplier of a project. The informants require success, and this success can be proven through references, especially through reference visits, whereby the suppliers can demonstrate their capabilities, experience and earlier success. And as soon as there is a list of suppliers' references, they are compared, and the suppliers are positioned based on them.

The underlying theme experience reflects the uncertainty related to the suppliers, and can be argued to have two sub-themes or components: firstly, an *industry specific component* and secondly, a *solution specific component*.

Dimension: Relationship

Theme relationship turned out to be rather complicated and diversified, resulting in not only perspectives concerning the buyer's expectations, but also historical aspects. A project buyer lives in the moment, but would like to receive support from the past. Therefore, it seemed logical to split the relationship dimension into two components: *relationship history* and *investment in relationship*. They, respectively, represent the support seeking and current moment aspects.

Component: *Relationship history*

An already existing relationship between the supplier and the buyer has two perspectives. The two may be familiar with each other even though there is no transactional relationship in the past, but the most remarkable influences are seen, when the two parties have worked together in a project. The influences can be twofold, either positive or negative, depending on success in earlier projects. The buyer looks for stronger and longer relationships with suppliers as they view it as being important that a supplier knows the sites and the buyer's procedures and ways of working in projects. The buyer has a certain confidence in the supplier's capabilities, and can to some extent rely on there being a positive outcome of the project. In contrast, with regards to an opposite case, which has resulted in unsolvable problems, or possibly left the buyer alone with the problems, reflects on the relationship between the parties. This kind of episode makes it hard for a supplier to be considered a potential supplier.

Component: *Investment in relationship*

The customers expect to see and feel that they are important to suppliers, which seems understandable, as they are considering an investment, which may be critical in their activity chain. Signals, which demonstrate customer orientation and commitment and the importance of the customer to suppliers, can be as simple as reacting quickly to requests. Customers start assessing suppliers from the very first time they meet. The buyers evaluate what might be expected if a supplier were to deliver a project. The relationship aspect is also looked at from the personal level to see if and how cooperation between the individuals could work.

The uncertainties related to the project and supplier do not actually illustrate the whole truth, as it is people who make the project a success or a failure. The informants referred to

the quality of work during the proposal phase of the project. The commitment and customer orientation, and investment in the relationship, are shown to the buyers through not only the quality of presentation materials and proposals, but also by providing information and reacting to requests quickly. From the supplier's perspective investment in a relationship can mean giving priority to it at the cost of others.

Dimension: Solution excellence

Even though from the earlier part of this subchapter it is possible to get the impression that there is no room for innovations in projects, and that only ideas already used successfully are good enough, there still exists some interest in finding new solutions. The buyers expect to receive proposals that are at once both creative and yet proven solutions, which will allow the buyers to remain in their comfort zones.

All proposals regarding solutions will sooner or later address the issue of costs. It would be an illusion to think that a superb solution automatically positions a supplier as the preferred one. The cost of a project is of great importance, and is one of the ways that buyers judge the excellence of a solution.

Dimension: Trust in people

During interactions at the time of the marketing of a project there exists the personification phenomenon. The project proposed by a supplier, and the supplier himself, are in the buyer's eyes one and the same.

The question of whether one can rely on the skills and other elements of the supplier's personnel is reflected heavily in the interviews by the informants. They look for confirmation that they are dealing with a counterpart, who is able to manage the project and can cooperate fruitfully with the buyer's organisation in the project network. It is surprising how early the buyer's perception may be actually formed, and there were several indications made by the informants that their first impressions tend to remain. Those moments or interactions when a supplier's marketer can create a positive impression for the building of a relationship may come both a short or long time before the final decision is actually made. One feature of the personalisation process is the role of the sales manager versus that of the project manager, who will be responsible for the project after the contract is won. The buyers expect that the future project manager will participate in the negotiations, and that the buyer will have the opportunity to evaluate the skills and the person in advance.

Dimension: Supplier's identity

Another theme, which became obvious in the interviews, is the financial stability of the suppliers. The informants spoke about a calculated risk, when the financial status of a supplier is not reliable enough in their eyes. The basic problem with the financial state of the supplier can be understood, when the time perspective of a project is taken into account. Any major investment projects may extend over a number of decades, and the buyers try to avoid the risk that they will be solely responsible for the project in the future. A capital investment ties the customer to the chosen solution, technology and sometimes also to rather tight guidelines, which may influence the customer's business activities for years.

Suppliers have an identity, which according to the pilot case informants has a lot to do with not only their economical trustworthiness or *financial stability* but also *reputation*. Identity is not easy to interpret from the interviews, as *experience* or reputation as an experienced and successful supplier with industry specific references could also be interpreted as elements of identity. In this study, however, experience and references had such a central position in the informants' cognition that *experience* constitutes a component of identity. *Financial stability* or trustworthiness was regarded as an opposite to risk.

This study is not supposed to be based on a statistical analysis of the data, but Table 4 presents the number of codes for each theme. The sub-themes are included in themes, as the purpose of the table is to indicate the focus between different themes. A complete coding list is presented in Appendix 4.

Table 4. Code distribution between themes in the pilot case study

Dimension	Number of coded passages in data
Solution excellence	28
Trust in people	26
Relationship	21
Experience	30
Identity	10

Theme: Incidents influencing supplier perception

The informants indicated that in addition to the themed factors influencing how the suppliers are perceived, there are also incidents taking place during the marketing process, which may have either a negative or positive impact on the perception of the buyers. The incidents or events can be such that a supplier or its marketer may not even realise that

something critical has happened.

The interactions between the suppliers and the buyer provide a lot of opportunities for the parties to shape their opinions of the other party. The buyer is continuously evaluating the cooperation capability of the supplier's personnel and they pay attention to both negative and positive signals. In the worst case scenario, the buyer may consider the whole supplier network, based on a single member in it. Being able to work in a team, as part of the project network, is essential.

Supplier networks provide the marketers a challenge, as disagreement between the parties aiming at winning a project is a serious negative signal. A single event may give the buyer the impression that the relationship between the networking parties is not working correctly. The role of a person representing a marginal part may be emphasised, especially in the case of negative signals.

Events capable of changing buyers' perception seem mostly to take place during interactions between suppliers and buyers. There are, however, other opportunities to shape the positions rapidly, but interactions provide such situations easily. Table 5 illustrates how events capable of changing supplier perception by customers are situated in the pilot case data.

Table 5. Incidents able to change supplier's perceived position.

Theme: Type of incident	**Number of coded passages in data**	**Examples**	
		Positive	**Negative**
Incidents inside supplier network	5	-Trust between partners	-Disagreement or dispute between partners -Criticism of other members
Incidents in interactions between supplier and buyer	33	-Commitment to cooperation -Behaviour of individual marketer -Supplier's strategic choices	
Incidents related to supplier's way of working	6	-Commitment to work for a common goal -Attitude to work	

Most of the incidents took place during interactions between the buyer and the supplier. The interaction based incidents can be categorised into three main themes, which all can be either negative or positive. The first interaction related incident theme is commitment to cooperation composed of sub-themes like adapting to buyer's situation and problem, cooperating innovatively and in a customer oriented way, and being able to work as a part of a team. The second interaction related sub-theme involved behaviour of a single marketer, and specifically, how convincingly the individual is marketing and communicating with the buyer.

This sub-theme comprises also the marketer's capability to build bonds with individuals of the buyer's company, and how the buyer's staff perceives the marketer as a person and his/her efforts to work for the good of the project. The third interaction related sub-theme regards the strategic choices of the supplier, namely the priority of the relationship. The supplier has to choose how resources and efforts are allocated between relationships and projects. Hence, the response time to interaction requests and manning on the supplier's side depend on how strategically important the buyer or the business, and the buyer's business is to the supplier.

One group of incidents capable of shaping the supplier's position involved the partnerships. A supply network can have either negative or positive influence on the buyer's perception of the supplier, and incidents indicating disagreements or disputes between the partners were serious negative signals. On the other hand, trust shown between the partners can improve the position of the supplier network in the eyes of the buyer.

The third group of incidents capable of changing the position of the supplier was related to the supplier's ways of working. Incidents, which either confirm or disconfirm a true commitment to work toward a common goal, can be important regarding the forming of the supplier's position. A commitment to work toward a common goal can also be derived from the supplier's strategy, but it is separated into a sub-theme of its own. In the same way, the supplier's attitude to work could be shown through either a personal approach by individuals of the supplier's staff, a strategic decision by the supplier, or through a company culture approach.

2.4 Conclusions of the pilot case study

This sub-chapter begins with an assessment of whether the objectives of the pilot case study were fulfilled. Following this, conclusions about the results are drawn, and finally the implications of the pilot case study on the next steps of the research process are presented.

2.4.1 Fulfilment of objectives of the objectives of the pilot case study

The first objective of the pilot case study was to indicate the path for the following steps, to guide the literature review to relevant areas. One imminent conclusion that can be drawn from the pilot case study findings is that network position as a concept is very complex, and it seems justified to argue that project marketing context may even increase the degree of complexity. Due to the complexity of the phenomenon being studied, the network

position of suppliers in project marketing, guidelines for the next steps are manifold. It can be argued that the first objective of the pilot case study was rather well fulfilled, as the pilot case study indicated how the complexity of the phenomenon being studied should be taken into account in the next steps of the research process, the literature review and the research design. The implications are discussed in detail in Subchapter 2.4.3.

The second objective of the pilot case study was to increase understanding of how the view of the network position based on the INA and project marketing literature gained in the preliminary literature review, which is not reported in this study, models the dimensions of the supplier's position. INA literature (e.g. Johanson and Mattson 1985; Henders 1992) argues that network position comprises dimensions of relationship strength, role, importance and identity, and on the other hand project marketing literature (e.g. Cova, Ghauri and Salle 2002) adds functional position and relational positions as the dimensions of the position. The pilot case study brought out new perspectives on the phenomenon being studied, and it can be concluded that the INA and project marketing based literature cannot fully explain the network position concept in the project marketing context, and we can argue that the second objective set for the pilot case study was also well met. Subchapter 2.4.2 discusses the differences between the pilot case study results and the INA and project marketing literature's views of the network position.

The third objective of the pilot case study was for the researcher to use it as a learning opportunity with regards to the academic world, and to help the researcher to refine the data collection plans with respect to both the content of the data and the procedures to be followed (Yin 1994, 74). The third objective was especially important for the researcher personally, due to his lack of research experience. Becoming familiar with the procedures and varying requirements in data collection and data analysis seemed of vital importance. The learning opportunity, in the format of the pilot case study, worked well and provided a great number of experiences and ideas to improve the following empirical study, and in this respect the third objective of the pilot study was fulfilled.

It can be concluded that the three objectives set for the pilot case study were fulfilled: a road map by which to continue the study was drawn, a lot of new questions arose and the new questions regarding the differences between existing studies and the pilot study give impetus to work further, and the researcher received a lesson on how to conduct empirical studies.

2.4.2 Conclusions on the results

The *first conclusion* on the results of the pilot study is that the working definition on supplier's network position *"preference from buyer's perspective as business partner"* is valid and applicable further in the study. The *second conclusion* is that network position is a much more complicated phenomenon including more dimensions, than for example INA or project marketing literature indicates. It is not possible to fully capture the phenomenon in the project environment by using e.g. INA dimensioning (e.g. Johanson and Mattsson 1985; Henders 1992) based on the four dimensions of role, identity, strength of relationship and importance. None of the dimensions take into account one of essential elements brought up by the informants of the pilot study, namely the solution to the buyer's problem. Project marketing literature has the functional position as one of the two key elements, but it is presented in a general level in the literature (c.f. Cova, Ghauri and Salle 2002), and the pilot study brought up a broader dimension than project marketing literature. Another perspective poorly represented in the INA position concept is experience. Identity of the supplier may include aspects of experience, but the governing interpretation of identity, however, how attractive the supplier as an exchange partner is seen by other actors in the network (Anderson, Håkansson and Johanson 2002, 217), does not mention experience as a component of identity. Especially, references are the main instrument by which to convince the buyer of the supplier's experience (c.f. Salminen and Möller 2006; Salminen 1997). Relationships are important in the INA concept of network position but personal relationships, which in the pilot study were in the central position, are not reported in the literature. Project marketing also has relationships in a central position, and relationships include also personal level relationships, but personal relationships are said to be important only during the early stages (Cova, Ghauri and Salle 2002). The pilot study, on the other hand, pointed out the importance of personal relationships during the entire project marketing process.

The *third conclusion* is that project marketing is a process and includes different periods (stages, phases), and it is obvious that the network position of suppliers is not composed in the same way during the process. The governing dimensions of the network position concept can vary between the periods.

The *fourth conclusion* is that events might occur during any of the phases that are capable of changing the supplier's network position.

The *fifth conclusion* is that individual representatives of the supplier are as influential a

factor in the formation of the supplier's network position as the supplier's organisation.

The *sixth conclusion* is that content analysis is not necessarily able to capture to an adequate depth the phenomenon under study. Content analysis was able to provide themes and sub-themes in the pilot study, but it seems doubtful that contents analysis could result in a deep enough understanding of the phenomenon. Especially, relations between different elements requires deeper analysis.

The *seventh conclusion* is that selecting a rather general research design in the pilot study was justifiable, but a very complex phenomenon like suppliers' network positions in the project marketing context requires a much deeper research design. The empirical part of the study should be based on a single project approach, which should be researched with the maximum number of available details in order to capture the phenomenon under study and the the dynamic nature of the position concept. A single project provides such an amount of data that involving multiple projects results in not being able to control analysis of the data.

2.4.3 Implications for the next steps of the study

Based on the results and experiences of the pilot study, there are several implications for the following steps of the study and these concern both theoretical aspects and empirical parts of the study.

2.4.3.1 Implications for the literature review

Firstly there are implications for the literature review. It is obvious that relevant INA literature and project marketing literature has to be re-reviewed rigorously and the match between the empirical and theoretical worlds can be re-assessed after the actual empirical part of the study. In addition to reviewing papers, focusing on network position subjects like relationship and interaction are interesting from the perspective of this study. As personal relationships seemed to have a significant role in the project marketing process and in the network positions of the suppliers, relevant literature has to be reviewed as well. The network position of a supplier is related to the degree of preference from the buyer's perspective as to whether to take the supplier as a business partner, and in this respect there are studies concerning supplier selection, and that literature may provide more insight into the research problem. The whole network position seemed to be rather unstable, and there were numerous indications of changes taking place in the position. Hence, another area to be reviewed is literature concerning changes in relationships and events capable of changing the relationship

between the supplier and the buyer. Table 6 presents a summary of the guidelines for conducting a literature review.

Table 6. Areas for literature review, reference to pilot case study, and objective in the literature review.

Area	**Examples of literature**	**Reference to pilot study**	**Objective in literature review**
INA literature on network position	Johanson and Mattsson 1985; Mattsson and Johansson 1992; Henders 1992; Andersson et al. 1998; Hallen and Lundberg 2004	Miss-match between pilot study findings and network position in INA literature	Deepen understanding of network position
INA literature on relationship	Halinen, Havila and Salmi 1999; Ford et al. 2003	Relationship history and development	Widen understanding with relationship development
Project marketing literature	Jansson 1989; Cova, Salle and Vincent 2000; Cova, Ghauri and Salle 2002; Gustafsson 2002	Miss-match between pilot study findings and position in project marketing literature	Deepen understanding of supplier positions in project marketing
Supplier selection literature	Wilson 1994; Min 1994; Yussef and Zairi 1996	Preferred business partner	Widen understanding of criteria, selection process and selectors
Critical events literature	Flanagan 1954; Holmlund and Strandvik 1999; Edvardsson and Strandvik 2000	Capability to shape network positions	Integrate change process with network position development
Personal relationships literature	Hallen 1992; Håkansson and Snehota 1995; Holmlund 1997; Halinen and Salmi 2001	Importance of personal relationships	Integrate influence of personal relationship with network position development

In addition to implications for the literature review, the pilot study had implications also for the research design of the future steps of the study, and these implications are discussed next.

2.4.3.2 Implications for research design

According to the findings of the pilot case study, the project marketing process seems to be rather complex and includes so many turns and events that capturing them in-depth requires focusing on a single project or project marketing process.

Collecting data, when the informants do not speak their mother tongue, is rather easy during the transcription process, but at the same time due to the language skills of the informants, the narratives were rather simplistic. It would most certainly be more fruitful, if the informants spoke their own language (see e.g. Wright, Lane and Beamis 1988). The interview technique is important, as some interesting statements would not have been

mentioned, if the informants were not encouraged to continue discussion after hesitating about whether they should speak about something or not (c.f. Britten 1995).

In the pilot study the data analysis was based on content analysis, in which the purpose is to condense data into certain categories (Kapborg and Berterö 2003). Applying elements from the grounded theory approach could provide the necessary depth when compared with content analysis, as the grounded theory is for theory building, and would give the research process the rigor necessary to build a good theory, would help the analyst to break through the biases possible during the research process, and provide grounding, density and sensitivity for developing rich and explanatory theory (Straus and Gorbin 1990).

3 LITERATURE REVIEW

3.1 Project marketing research

3.1.1 Introduction of the project business and project marketing

Successful marketing in the project business requires that a project-based firm can identify, and effectively manage interdependencies between portfolios including customer relationships, network relationships, sales and delivery projects and offering development. The major challenge lies in allocating resources between the portfolios and portfolio management tasks (Tikkanen, Artto and Kujala 2007, 202).

Projects in different forms and shapes represent a major proportion of international trade and business activities ranging from subcontracting to turnkey projects with management or offset contracts (Cova, Ghauri and Salle 2002). The D-U-C model (Mandják and Veres 1998) emphasises the special features of project marketing compared with other business-to-business marketing situations. The model names three key features of project marketing, which are: 1) the discontinuity of demand for projects, 2) the uniqueness of each project, and 3) the complexity of each individual project.

The first determinant of the DUC-model is discontinuity of demand. Projects cannot, however, be regarded as isolated events, even if there are no activities between projects, as relationships are built on earlier interactions, and therefore former projects can have influence on the subsequent ones. The inactive or sleeping relationships between projects can take a significant period of time (Hajdikhani 1996, 322). If we assume that a project marketer is involved in the life cycle of the asset while marketing a project, and that he is also successful in marketing, he will also build a system that results in a paper mill project to the following time scale presented in Table 7.

Table 7. Time scale of a paper mill asset system.

Phase	Duration	Comments
Acquisition phase	3-4 years[5]	Including conceptual design, preliminary design, detail design and development, production and/or construction
Utilisation phase	10-15 years[6]	Including utilisation and support, retirement and disposition

If a project marketer is involved only in the supplying of new asset systems, the sleeping

[5] Source: From a paper mill project of the focal company in the Far East.

[6] Source:http://www.metso.com/corporation/ir_eng.nsf/WebWID/WTB-070313-2256F-6F3AF/$File/Metso_SR2006_fin.pdf (last accessed 24.7.2007).

period in the worst case scenario could be as long as 10 years, as is presented in Table 7, provided that the customer wants to replace the system.

Uniqueness is the second determinant of the DUC-model, which has been argued to derive from the realisation that projects require a specific mobilisation of own resources from those of the network partner companies(Mandjak and Veres 1998, 479; Melassi and Tukel 1996). No project will be exactly the same (Turner and Müller 2003, 1). Mandjak and Veres (1998, 481) that it is the interest of both the contractor and the buyer to reduce uniqueness as much as possible.

On the one hand, the uniqueness aspect can be accepted as stated in the model, as it is true that no two projects can be identical, even if the buyer and seller remain the same. For example, when paper machines are supplied to the same customer who is operating in two different countries, technically, the environment can be totally different in the two locations, as can be the cultural, political and social differences (Owusu and Welch 2007, 149; Andersen and Kumar 2006; Welch 2005, 291; Caru, Cova and Pace 2004, 540; Björkman and Kock 1995, 521). On the other hand, companies differentiate themselves by their core competences and skills (Hamel and Prahalad 1990). If a company is a word-class producer of paper machines, it should not be difficult for it to build the same kind of machine for two different countries and environments. The differences between the two destinations of the machines should not create too high an obstacle for the project to be realised, as the basic technology should be the same in both cases. Uniqueness may be a major issue, if the project comprises a product that is the first of its kind or involves the novel application of an earlier project.

The third dimension of the DUC-model is the complexity of the project. The dimensions of complexity can comprise e.g. the following elements (Mandjak and Veres 1998, 482; Cova and Hoskins 1997, 547):

- Multi-organisational buying centre with a large number of members
- Composition of skills and resources from within both the buyer's and contractor's network of external partners
- Broad circle of stakeholder, often including non-economical informants
- Multi-language and multi-culture nature and differences
- Transaction of high value (project cost is high), need for financial engineering
- Long period of contracting and realisation
- Risk due to buyer and destination country
- Perceived risk of the buying centre

- Operating direct and indirect system of relationships, establishing network position

The transaction value is not an obvious dimension, and it cannot actually be measured with an absolute scale. High value in project marketing literature (see e.g. Cova, Ghauri and Salle 2002) usually refers to a project in a monetary scale of an underground system, such as a motorway or something similar. The value of such a project is high, but on a national level or with regards the budget of a city, this kind of project represents only a fraction of the total. A more justified method of defining the value dimension would be to operationalise the importance of the project compared with the annual sales of the contractor or e.g. what percentage of the buyer's production is handled or produced with the object of the project. From the buyer's perspective the value of a project is high if the object of the project (e.g. a system) can jeopardise the business of the buyer, even if the monetary value of the project is low, and from the buyer's perspective it is regarded as a risk as there is uncertainty about the object of the transaction (Cova, Ghauri and Salle 2002). Thus instead of only speaking about an absolute transaction value, one should evaluate the relative transaction value for both of the parties. Based on the previous argumentation, this type of operationalisation of the value dimension draws a parallel between the value and risk dimensions.

Mandjak and Veres (1998, 486) claim that the importance of the dimensions of the DUC model varies during different phases of the marketing process, and therefore the marketer of the project needs to have different marketing behaviour during different phases. This need to adapt the marketing behaviour is an additional component of the complexity dimension of project marketing. Characteristics of the project business influence project marketing and there uncertainties, both on the marketer's and customer's side (Cova, Ghauri and Salle 2002, 23-25; Xu, Bouver and Smith 2005, 49-50). A project purchasing situation from the buyer's perspective is characterised by a high level of risk and uncertainty, as in reality there is only the seller's promise to deliver something in the future, which may only exist on paper, but typically involves high cost and complexity (Welch et al. 1996, 580). Management of uncertainties and related risks is a crucial element of project management (Perminova, Gustaffsson and Wikström 2007). Project-based collaboration may create vulnerability to behavioural uncertainty (i.e., one party taking advantage of the other) since the arrangements are short-term in nature (Xu, Bouver and Smith 2005, 49-50).

3.2.3 Project as a process

3.2.3.1 Processes and marketing

There are many definitions for a process in the academic literature. A process can be seen to explain a causal relationship, or it is a category of concepts referring to activities of individuals or organisations. A process can also be a sequence of events that describes how things change over time and according to context (Van de Ven 1992, 169; Pettigrew 1997, 338).

Marketing is by nature a social process (Hunt 1991, 6; Kotler 2000, 8; Tikkanen 1996; Anderson 1983; Peter 1992; Tybout and Zaltman 1974, 357). It is well founded to conclude that marketing is part of social reality and consequently a dynamic process. If marketing generally is a process, then time limited and tightly focused project marketing must also be a process, and it should be researched as such.

One could ask, what is the objective and purpose of analysing processes? Pettigrew (1997) proposes that the "*purpose can be captured by the word how, but in fact most process studies are preoccupied with describing, analysing and explaining the what, why and how of some sequence of individual and collective action"*. In the present study the key is to analyse the project marketing process in the light of suppliers' positions in the project marketing network and to explain how the positions develop and what causes the developments.

3.2.3.3 Different process models for project marketing

Projects are tied to the time dimension, and in this respect comply with e.g. Pettigrew's (1997) aforementioned definition. Turner and Müller (2003, 1) summarise that the nature of a project is transient, as it has a beginning and an end. This can be criticised though, as although it may be justified to argue that some parts of the project start and end, from the supplier's perspective it is not that clear cut (see e.g. Subchapter 3.2.1). The relationship between the supplier and the buyer may continue after the project has been "completed", and there may even be ongoing economical transactions after completion.

It is, however, obvious that projects are related to time (Mandjak and Veres 1998, 484), with all projects having a planned time of completion. Cova, Mazet and Salle (1994, 30) define a project "*as a complex transaction covering a discrete package of products, services and other actions designed specifically to create capital assets for the buyer over a certain period of time*". Accordingly, we can define *project marketing as an activity conducted to market complex transactions covering a discrete package of products, services and other*

actions designed specifically to create capital assets for the buyer over a certain period of time.

It is also common that the schedule of a single project is tied with an overall schedule covering much wider operations than the single project. A paper producer, for example, may plan to penetrate and operate on a new market, and this requires building new production capacity for the target country. The master schedule orchestrates all of the sub-schedules related to the total project. Accordingly, the marketing actions, the project marketing, have to be tied to the time lines of the project, and be time dependent. Therefore, project marketing is a process.

The project marketing process comprises different phases covering both the selling and the implementation of the project. One of the simplistic approaches to modelling the project marketing process is presented in Table 8, which is based on practical project marketing experiences, and makes the process sound rather simple and straightforward.

Table 8. Phases of project marketing actions according to Holstius (1987, 50).

Phase no.	Description
1	Identification of investment idea
2	Development of investment alternatives
3	Suggestion for investment realisation (offer)
4	Investment decision (agreement)

The project selling actions are followed by phases of interactive realisation of the investment project, such as management of the project, planning phase, production phase, procurement, construction and installation. This realisation part of the project business can be regarded as the project management part in the chain of actions.

Cova et al. (2002) and Cova and Salle (2007) have developed a general marketing configuration for project-to-order suppliers. The configuration is shown in Figure 4. The original model ended at the completion of the project, which in the current business environment is not normally applicable, as the buyers expect to have support available after the practical realisation of the project has been completed. Nowadays, support is often provided during the entire lifetime of the delivered project resulting in a chain of business activities spanning over a period of up to 20 to 30 years. The support aspect is also emphasised in marketing, as it is a common competitive advantage of suppliers. Several large companies, as buying organisations, will not even consider a supplier not having a permanent

support arrangement close to them, the buyer. Some companies working in the project business have focused on the support and after sales functions, and a majority of their current business may stem from this.

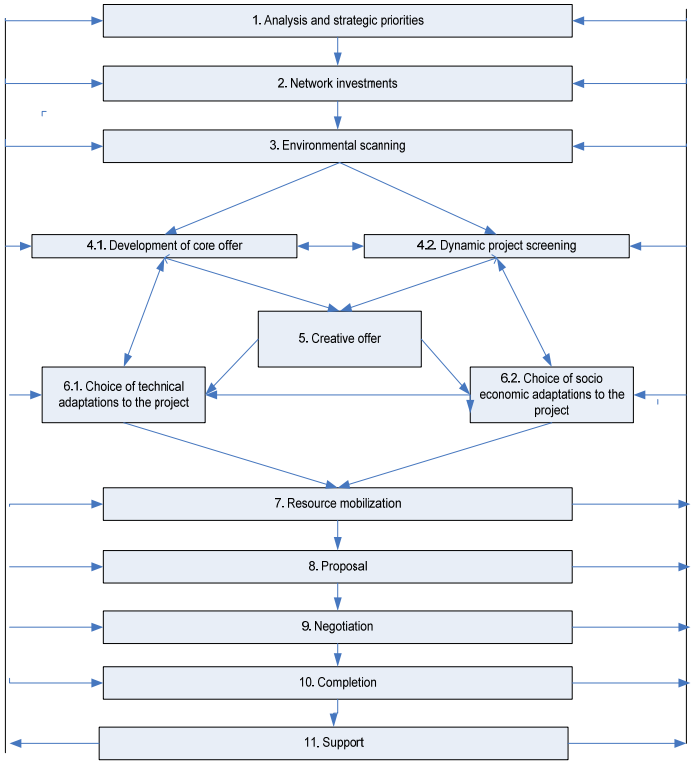

Figure 2. Project marketing process with support activity (item 11) added (Cova et al. 2002).

The after sales provided, easily provides a means by which to maintain the relationship, even though no major transactions take place.

The model by Cova et al. (Figure 2) is split into two phases: 1) pre-project phase 1-5 (or independent of a given project) and, 2) a project specific phase 5-10. Phase 11, the support or services phase, is not included in the original model, but it should be an integral part of it. The pre-project stages are important, as during them, maintaining and receiving information necessary to build relationships with potential customers or cooperation partners, is the key activity (Skaates and Tikkanen 2003, 506; Mandjak and Veres 1998, 484). What is not really emphasised in the model above is the complicity and multiplicity related to developing the offer. It is quite common that steps 4-6 may span over a number of years.

Cova, Salle and Vincent (2000, 555) have presented a project marketing process, which

comprises the following phases: milieu positioning, project network positioning, buying network positioning, pre-bid analysis, bidding, negotiation, and at the end the contract. Milieu positioning refers to the time when there is not yet any project, and milieu consists of the management of a firm's relationships with a local network of business and non-business actors, who actually form the milieu (Cova, Mazet and Salle 1996). A project network is a narrower structure than a milieu, and is presented in more detail in Subchapter 3.2.4. A buying network comprises the decision makers, and they decide which supplier will secure the contract phase. Buying network is presented in more details in Subchapter 3.2.4.3. During the pre-bid analysis the supplier makes an assessment as to whether the project is interesting and if their position is conductive to securing the contract. The supplier also has to decide whether to invest in the project. This phase has also been called screening.

Tikkanen, Kujala and Artto (2007) have proposed a portfolio framework for project marketers. The framework includes four managerial portfolios, and they are related to marketing tasks in the business strategy of the firm. The four managerial portfolios are marketer's customer relationship portfolio, delivery project and service portfolio, R&D project portfolio, and supplier network relationship portfolio. Figure 3 presents the proposed framework.

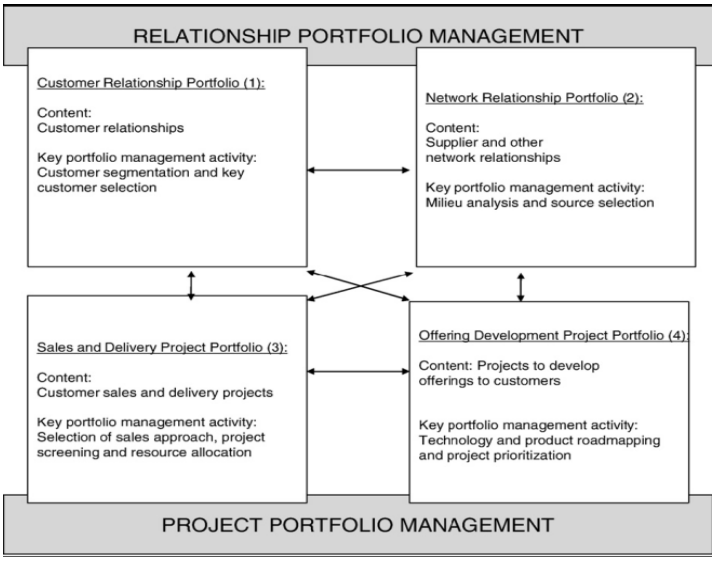

Figure 3. The marketing strategy of a project-based firm: The Four Portfolios Framework (Tikkanen, Kujala and Artto 2007).

The proposed framework conceptualises the marketing strategy of a project-based firm,

and takes the form of four managerial portfolios. Each portfolio is characterised by its content and the most central portfolio management activities. The four portfolios are the firm's (1) customer relationship portfolio, (2) network relationship portfolio, (3) sales and delivery project portfolio, and (4) offering development project portfolio. Managerial tasks in portfolios (1) and (2) consist of relationship management, whereas portfolios (3) and (4) consist of project management tasks. Thus, the two tasks of relationship portfolio management and project portfolio management are essentially interlinked in the framework, which emphasises the importance of the concerted management of customer relationships, relevant network relationships, and product development. Portfolios (1), (2) and (4) can be considered as more general (i.e. found in any firm also outside the area of project business), where as portfolio (3) brings in the viewpoint of the project-based firm.

Mandjak and Veres (1998) have proposed a model of project marketing, in which three significant phases can be distinguished: pre-realisation, realisation and post-realisation. The model takes into account that the process of project marketing is embedded in the relationship between the contractor and the buyer. Owusu (2003) has proposed a process model, in which there are two phases covering the time before the implementation phase of the project. Implementation is followed by operational and post-process phases.

The International Network for Project Marketing and Systems Selling (INPM) sees project marketing as a broader term, which always implicitly includes project management but not necessarily vice versa (Skaates and Tikkanen 2003, 504). The reasoning behind the perspective is that management of the business relationships between the actors of the project network is important before, during and after the delivery process. The arguments given by INPM sound true and valid especially in the case of a continued business relationship between the seller and the buyer. Mandjak and Veres (1998) also argue that the entire process of project marketing can be considered as a process embedded in the system of relationships between contractor and buyer. Also much of the unofficial communication (so called word of mouth) concerning customer satisfaction in the supplier’s products or services in question is important for new business opportunities, not only with the same buyer but also with regards to new customers (Money 2004; Tanner 1996). For projects concerning capital equipment, reference visits provide an important, but also a risky channel for prospective customers to gain perceptions about the supplier and their products (Salminen 2001). Table 9 sums up the variety of project marketing models.

Table 9. Models of project marketing.

Author(s)	**Project marketing phases**	**Project realisation phases + post project phases**	**Remarks**
Holstius 1987	Identification of investment idea Development of investment alternatives Suggestion for investment realisation Investment decision	None	Pure project marketing process approach
Cova and Holstius 1993	Identification of requirements Feasibility study Research/selection of suppliers for advice Definition of specifications and compilation of terms and conditions Setting up bidding list Invitation to tender Information exchange Reception and analysis of suppliers' proposals Selection of suppliers and setting up shortlist Negotiation on all points Reception of new proposals Analysis of new proposals Negotiation on all points Final evaluation Selection of supplier Contract		Buyer's perspective, pure project marketing process approach
Cova, Salle and Vincent 2000	Milieu positioning Project network positioning Buying network positioning Pre-bid analysis (screening) Bidding Negotiation Contract		Pure project marketing process approach
Cova, Ghauri and Salle 2002a	Identification of a need Pre-feasibility study Identification of potential sellers/buyers Tender/offer invitations Negotiations	Planning and design Implementation works Test running Handing over	Authors use the name project components
Mandjak and Veres 1998	Pre-realisation	Realisation Post-realisation	Includes also after completion period
Cova, Ghauri and Salle 2002b	Independent of any project Analysis and strategic priorities Network investments Environmental scanning Development of core offer + dynamic project screening Project specific Creative offer Choice of technical and socio-economic adaptations Resource mobilisation	Completion	

	Proposal Negotiation		
Owusu 2003	Pre-project phase Project negotiation phase	Project implementation phase Operational phase Post-project phase	Includes also after completion period
Tikkanen, Artto and Kujala 2006	Portfolio approach: customer relationships p., network relationships p., sales and delivery project p., offering development p.		Contents model

In this study, models proposed by Cova, Ghauri and Salle 2002a and Cova and Holstius 1993 have the most potential to be used, as their division of the phases that come before supplier selection provide a more nuanced division between the different sub-phases of the process. The focus is put on the time period that stretches from the very beginning of the marketing process until the supplier selection/contract, and consequently it is assumed that finer division of these phases will provide more findings on the research problem. Cova and Holstius (1993) have taken the buyer's perspective in detailing the buying process. This model, with the phases shown in table below, has a certain analogy with the Cova, Ghauri and Salle (2002a) model, which uses the supplier perspective. Table 10 outlines the phases of the selected process model in the present study. Changes to the model of Cova and Holstius (1993) include compressing the negotiation stages into one stage, as it is not possible to predict how many stages there will actually will.

Table 10. Selected process model for the present study (adapted from Cova and Holstius 1993).

Phase n:o	**Cova and Holstius 1993 (Buyer perspective)**	**Comments**
1	Identification of requirements	
2	Feasibility study	
3	Research/selection of suppliers for advice	
4	Definition of specifications and compilation of terms and conditions	
5	Setting up bidding list	
6	Invitation to tender	
7	Information exchange	
8	Reception and analysis of suppliers' proposals	Initial proposals
9	Short-listing of suppliers	
10	Negotiation	Includes multiple rounds of proposals and analysing and negotiating them
11	Final evaluation	
12	Selection of supplier	
13	Contract	

Not necessarily all of the phases exist in one project, or the phases may be inseparable or strongly overlapping, and as a consequence of that, it is not possible to distinguish them properly. Even if, as above aforementioned, that a finer division of stages may provide more findings, it may also create problems or challenges for correctly assigning the data to particular stages.

3.2.4 Project as a network

In this subchapter the network structure of projects is discussed. In most projects there is a network present, or in actual fact there may be several networks existing within one project network. First and foremost the whole project based business is a network with suppliers and their sub-suppliers, buyers with related stakeholders, consultants, authorities, and in some cases even non-business actors, such as political stakeholders. Therefore, a project can be a very complex structure of actors.

3.2.4.1 Project supplied by a network of suppliers

It is normal in project marketing that one company alone cannot provide the entire scope needed to develop a solution for a customer's problem. Thus, resources and capabilities of multiple actors are merged to develop the required offering, and in this way a group of suppliers function as a cohesive unit (Mattsson 1980).

The structure of a project network can also be viewed from the perspective of the roles of the actors, looking at what each actor in the project is supplying and their roles. Cova, Ghauri and Salle (2002, 4-9) have proposed a typology from the supplier's perspective, which depends on the scope of the supply. Even if the typology of project types presented in Table 11 is based on the supplier's role, the other aspect, the buyer's role and responsibilities, are important. The more responsibility the buyer has with regards the suppliers, the more important it is that there are no uncertainties regarding the supplier.

Table 11. Project type typology by Cova, Ghauri and Salle (2002).

Project type	**Explanation**	**Relationships between Buyer and suppliers**
Subcontracting	One main contractor is selling a project to a buyer. Main contractor buys parts of the project from subcontractors.	Main contractor acts as the one and only seller towards a buyer.
Partial projects	Suppliers supply parts of the project directly to a buyer.	All suppliers have a relationship with the buyer.
Package deals	A package deal is considered to include a solution to a buyer's	Supplier has relationships with multiple buyers.

	problem, a complete system/components, equipment plus the know-how to handle the same In some cases it may also include a service contract for a number of years.	
Turnkey projects	Turnkey projects involve delivery of a complete plant, factory or institution. In this case, the main contractor is responsible for marketing, negotiations and setting up of the project.	Turnkey supplier acts as the contact for both building the project but after completion of it as well.
Turnkey plus projects	Turnkey projects are being combined with other activities and these activities range from the project's inception to its completion.	Like in turnkey projects.

Figures 4-6 present the typology of the project types adapted to the business of the focal company. The figures present the project network structure in a rather simplistic way.

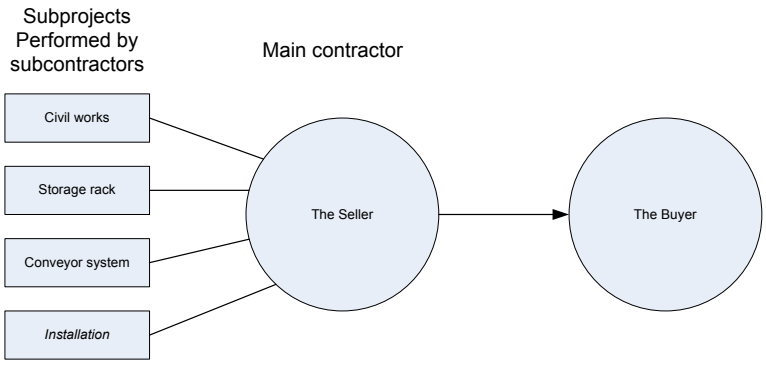

Figure 4. Main contractor and subcontractors (adapted from Cova et al. 2002, 5).

In a project like the one illustrated in Figure 5, one main contractor is selling the project to a buyer. It is normal that the main contractor cannot cover the full-range of products or services to supply the project, and the main contractor has to buy part of them from third parties, which are sub-contractors to the main contractor. The main contractor is responsible for its sub-contractors and their scope of supply to the buyer, and often the main contractor is free to select the sub-contractors.

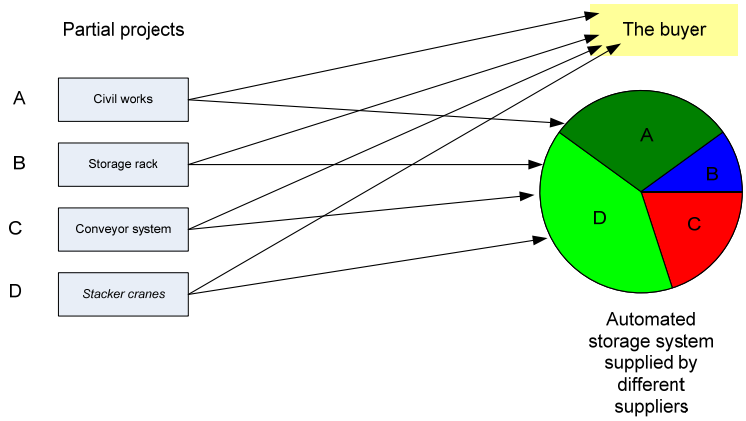

Figure 5. Partial projects (adapted from Cova et al. 2002, 5).

In a partial type project the buyer purchases parts of the project from suppliers. The buyer manages the project comprising the parts purchased from the suppliers. Each supplier is responsible only for own scope of supply, even though some adaptations may be needed in order to make the parts function as a system.

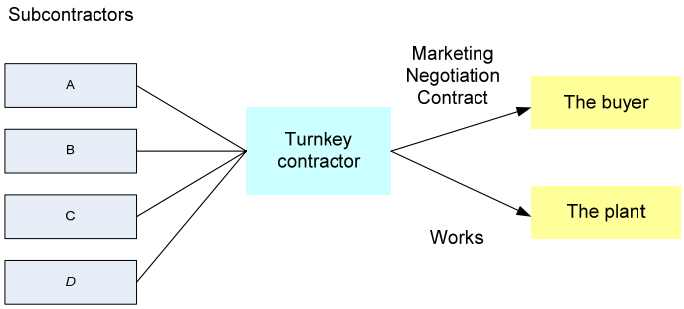

Figure 6. Turnkey project (Cova et al. 2002).

Turnkey projects are very similar to main contractor type projects, but in turnkeys the supplier has to deliver a project, which is ready for operation. Thus, a turnkey project concerns delivery, which is more complete than in the other types of projects. A turnkey project can be complemented e.g. with services or with financial instruments, and those types of projects are called turnkey plus projects. The percent of turnkey plus type projects is increasing.

3.2.4.2 Project network features

It is justified to consider a project as a specific temporary network (Hellgren and Stjernberg 1995; Dubois and Gadde 2000; Lundin and Steinthórsson 2003). Meyerson, Weick

and Kramer (1996, 167-171) consider temporary groups as an organisational form having a finite life span, a shared and clear goal, and success that depends on a tight and coordinated coupling of activity with the organisation being assembled by a contractor.

INPM argues that the environment of project marketing-related relationships has a socially constructed nature, due to the complexity of relationships (Skaates and Tikkanen 2003, 506; Cova, Mazet and Salle 1996, 650). Cova, Mazet and Salle (1996) have proposed the "mileu" concept, which was intended to transfer project marketing from the purely economic level to the socio-economic level, and it is also argued that it demonstrates that project marketing, to a certain extent, consists of the management of a firm's relationships with a local network of business and non-business actors, who actually form the milieu. The milieu concept emphasises that the project marketing environment is complex in nature with it having a socio-spatial configuration, which is said to include four elements: a territory, a network of heterogeneous actors related to each other on the territory, a representation constructed and shared by these actors, and a set of rules and norms (the law of the milieu) regulating the interactions between these actors.

Thus the milieu is a network with some of its own "law's" in which economic, social, cultural, institutional and multiple other rules and behaviour models exist. The actors acting in the milieu are aware of the "laws", but whenever they see it as being possible, they try to change the rules. Cova et al. (1996, 655) argue that "the concept of milieu thus favours the construction of the notion of economic space of relationship". The economic space is considered as a space of functional, hierarchical, cooperative relationships developed in a geographical space. In the local space the milieu supports the network of relationships oriented towards the construction of specific competences and their nurturing through social and collective processes. The milieu acts as a microcosm in which network forces are at play but are reinforced and empowered by spatial and cultural proximity.

3.2.4.3 Buying centre

In the previous subchapters we have learned that one of the determinants of project environment is complexity (Mandjak and Veres 1998, 482; Cova and Hoskins 1997, 547), and the whole project can be considered a network (Dubois and Gadde 2000; Hellgren and Stjernberg 1995). Suppliers are networked (Mattson 1980), but one element in industrial and project buying is that instead of a single actor making decisions, there is a buying centre, which is actually a buying network (Cova, Salle and Vincent 2000; Cova, Ghauri and Salle 2002, 29). Johnston and Bonoma (1981) have defined a buying centre as "all those members

of an organisation, who become involved in the buying process for a particular product or service". There are, however, indications that in some organisations the decision making process is in the hands of one person and in those organisations the practises are different from joint procedures. Single "hands decision making" is governed mainly by risk avoidance objectives (Patton 1997), which does not necessarily differ from normal project practises that are full of risks (Cova, Ghauri and Salle 2002, 37-38).

The buying network can in some cases be fragmented across several organisations, and therefore it is very difficult to predict project development and characteristics and to mobilise internal competences due to the discontinuity and uniqueness of the projects (Cova, Ghauri and Salle 2002, 29). Suppliers encounter also the challenge that decisions regarding capital equipment involve persons on several levels of authority (Woodside, Liukko and Vuori 1999).

Owusu and Welch (2007, 148) argue that the term buying network is not only applicable to direct supplier selection, as the network is involved at various stages of the buying process. The network refers to relationship connections that have an influence on the buying decisions of the project in question, and the relationships may be either new ones or long-term relationships, which have been involved in other projects.

Intra-organisational buying can have different members depending on the complexity of the product being marketed and eventually purchased. A member can come from e.g. purchasing, manufacturing, or engineering (Jennings and Plank 1995, 417). In the case of a buying network, the structure may also have external members, other organisations specialised e.g. in certain fields of engineering (Cova, Salle and Vincent 2000, 556).

In project buying what is specific is that decision making concerning who will supply the project is only one episode in a process (Cova and Crespin-Mazet 1996, 348), and the buying process continues, until the project has been delivered (Owusu and Welch 2007, 149). There are many interactions between the supplier and the buyer, with them taking place both during the phases of the project before the buying decision has been made as well as in the implementation phase (Owusu 2003). A project may have many interactions especially during the early phases of it, when the supplier has not yet been selected, or it may take a constructivist approach and the offer is entirely constructed during the interactions between the parties. In some cases the supplier may not exactly know what the project will be. The supplier creates the offer according to the course of the interaction (Cova and Crespin-Mazet 1996, 352).

3.3 Position

Within the industrial network approach, considerable attention has been given to the concept of position (Wynstra 1994). Studies in the INA research tradition have mainly focused on the dynamic aspects of industrial systems, especially on interactions, investments and flows, such as power and dependence in business relationships and in business networks, complex products or projects and consequently broad personal contacts between firms. Relationships are considered to be connected, or interdependent in the sense that what happens in one relationship has a bearing on other relationships in the network (Holmlund 1996, 20; Holmlund 1997, 60).

3.3.1 Position as one of the central concepts in INA-literature

The concept of network position has varied in the network literature since the introduction of the network approach in the 80s (see e.g. Johanson and Mattsson 1985, Johanson and Mattsson 1992, Henders 1992, Wynstra 1994; Anderson et al. 1998, Aastrup 2002). Each actor in a network is engaged in many relationships with other actors, and these relationships define the position of the actor in the network (Halinen and Törnroos 1998, 190). Thus, the current position of companies is the outcome of their relationships and the offerings that have been developed, marketed and purchased within them (Håkansson and Ford 2002, 136; Ford et al. 2003, 27).

Aastrup (2002) argued that position as a structural concept for understanding actors' abilities to act in industrial networks includes the structures of dependency and the structures of consensus and consistency based on the actors' network logics and their control of resources and capabilities.

Henders (1992, 53) discusses also the different ways of focusing on another dimension of network position, time. She has found two major methods of using the time dimension: snapshots of actors in networks and their positions. Snapshots describe the positions of the actors frozen in time. The other major procedure is to use position as a tool in the study of the process.

The nature of network positions can be characterised in many ways. Investment to positions can itself be seen as the basic task of marketing (Turnbull et al. 1996, 47). Positions can be seen as partially controlled, intangible market assets (Forsgren 1995, 22) that can determine a firm's ability to compete (Duysters et al. 1999, 183). Each position is unique and

perceived differently by the various actors in the network (Håkansson and Snehota 1989, 196; Salmi 1996, 42; Gadde, Huemer and Håkansson 2003, 362). A position has both a stable and dynamic character (Anderson et al. 1998, 168), and it is difficult to separate an actor's position and its role (Anderson et al. 1998, 171; Nikkanen 2003). The position is determined by the number of exchange relationships that the actor is engaged in (Johanson and Mattsson 1992, 211; Ford et al., 2002, 7), and actually the position is a consequence of the cumulative nature of the use of resources to establish, maintain and develop exchange relationships (Johanson and Mattsson 1992, 211).

A position can also be regarded as the location of power that influences the network, and the power can be based on economic base, technology, expertise, trust, and legitimacy (Thorelli 1986, 40). Since the position captures the overall perception of a firm's attractiveness as an exchange partner within its network context (Huemer 2003, 4), it can be regarded as a central concept for the present study.

Turnbull, Ford and Cunningham (1996, 12) regard network position as a description of a company's portfolio of relationships and the rights and obligations that go with it. Network position is both an outcome of past relationship strategy and a resource for future strategy. Relationships, rights and obligations are the result of the resources, which the company initially brought to the network, the experience it has gained, and investments it has made in its relationships. A supplier can systemically change its position by combining existing relationships in new ways or by building new relationships (Ford et al. 2003). One method that companies utilise today to enhance their network positions is the forming of strategic partnerships. They propose a threefold categorisation for the position concept including access, reputation and expectations (Turnbull, Ford and Cunningham 1996, 12).

The ways to use the network position are manifold. First of all, the position makes it possible to acquire resources through exchange with other parties in the context (Håkansson and Snehota 1989, 194), but from a wider perspective it also gives access to mobilise and combine critical resources and processes, promoting innovation and productivity in the network and also within the company (Snehota and Tunisi 2003, 19). The position provides the ability to develop further relationships in the network (Turnbull, Ford and Cunningham 1996, 48).

There seems to be a common view in INA that the positions of actors in a network are outcomes of past interactions and relationships (Halinen and Törnroos 1998, 190; Ford et al. 2003, 27; Håkansson and Ford 2002, 136). In this respect, it can clearly be seen that we have

to approach the position construct from the perspective of relationships.

The first aspect of networking relates to the first network paradox "*A company's relationships are the basis of its current operations and developments, but those relationships also restrict that development*" (Ford et al., 2002). Håkansson and Snehota (1995, 25) argue that "Relationship is a mutually oriented interaction between two reciprocally committed parties" and Forsgren (1995, 23) argues that "an inter-firm relationship is a mutual orientation of two firms towards each other". Ford et al. (2003, 38) argue that managing relationships, which concerns how the parties in relationships (actors) behave towards each other, is the critical task of the business and the complexity of that management task reflects the complexity of the relationships themselves (see e.g. Håkansson and Snehota 1995, 7-8) and the resulting network structure. Trust is regarded as a critical factor in long-term relationships such as strategic partnerships, and Hadjikhani and Håkansson (1996, 445) have crystallised it by stating: "*Actor bonds include two related facets; one has to do with the identities of the actors and other with the existence of mutual trust between them*" and continue by saying "*trust is a critical dimension but also a quite complicated one*". The previous arguments have pinpointed the importance of trust in longer relationships, but from a project marketing perspective a logical question would be: What is the meaning of trust in new or short-term relationships? One could argue that it is even more important taking into account the circumstances. According to Laage-Hellman (1997) actor bonds are particularly important to horizontal relationships (relationships between suppliers), since there is usually no exchange of products, which produce activity links and resource ties.

The substance function of a relationship has three aspects: actor bonds, activity links and resource ties (Ford et al. 2003, 39). Actors in the network are connected with actor bonds, which also influence how the actors perceive each other and how they form their identities in relation to others. Bonds are established in interaction, and in many cases between individuals, and are said to reflect the interaction process in which becoming aware of and learning about each other takes place (Håkansson and Snehota 1995, 27; Ford et al. 2003, 39). Time is an essential element in the development of bonds, as they are often based on trust, which is built gradually between the actors (Axelsson and Easton 1992, 197; Forsgren 1995, 24; Ford et al. 2003, 40). The bonds which develop between the actors during the interactions of the relationship can have different natures and structures and the following types have been reported by researchers (see e.g. Salmi 1995, 27): economic (e.g. credit agreements or terms of payment), legal (e.g. long-term contracts), technical (e.g. common technology, product or

process adjustments), cognitive (e.g. knowledge about the counterpart), social (e.g. mutual confidence and personal preferences), planning (e.g. logistic coordination) and time (e.g. future common actions).

Even though strong bonds seem to be necessary and preferred under e.g. position change circumstances like stated by Håkansson and Snehota (1995, 267-268), Eriksson et al. (2000) have found that the usefulness of weaker bonds can increase with the need for knowledge in ongoing strongly bonded relationships as weaker bonds supply more novel knowledge that can be used in non-routine decision situations. Thus weak bonds are important sources of knowledge for firms, when they face change, or need to innovate.

Relationships can be considered as valuable resources as resource ties can enhance the company's own resource base and should be managed (Håkansson and Snehota 1995, 190-191). Within the networks relationships do not exist independent of each other, they are said to be inter-connected, as a given relationship does not only effect itself and the two actors involved. A relationship may also have an effect on other relationships. The effect has been called indirect, secondary or network function of relationships (Ritter 2000, 318; Laage-Hellman 1997, 24-25; Håkansson and Snehota 1995, 24-25; Johansson and Mattsson 1992).

Johanson and Mattsson (1985) defined that the concept network position comprises four dimensions referring to a firm in the network (see also Henders 1992; Hallen and Lundberg 2004; Anderson, Håkansson, Johanson 2002; Håkansson and Snehota 1995). The dimensions are: the identity of connected firms, the role of the firm in the network, the importance of the firm in the network, and the strength of inter-firm relationships.

The identity of an actor in a network is derived from its attractiveness as an exchange partner and therefore its network position, and it sets the stage for the firm's opportunities or constraints, and has consequences on its possibilities to act. Bonner, Kim and Cavusgil (2005) have argued that identity can be viewed as an important strategic capability that enhances the value of a firm's relational assets. Identity is *the individual characteristics by which something is recognised or known*, but in the position context it means to capture the perceived attractiveness (or unattractiveness) of a firm as an exchange partner due to its unique set of connected relations with other firms, links to their activities, and ties with their resources. It refers to how firms see themselves in the network and how they are seen by other network actors (Anderson, Håkansson and Johanson 2002, 217). Identity conveys a certain competence, as it is based on each actor's perceived capability to perform certain activities, and it has certain power content, due to it being based on the particular resources each actor

possesses (Henders 1992).

Role according to Henders (1992, 90) can be applied in multiple ways. Role is said to be connected to importance. Sociologists define role as a typified response to a typified expectation. Henders' own definition of role as being "an activity of the firm in the network" (see also Hallen and Lundberg 2004, 8) is on the whole consistent with the network approach (activities, actors, resources). The importance of an actor in a network is a measure of the extent to which it can initiate change in the network (Henders 1992, 91), or preserve or destroy stability. Henders (ibid) has also proposed that it represents the percentage of required resources for the network held by the actor, and respectively the greater adjustment is required to replace the actor's resources by other actors.

According to Henders (1992, 96-97), the strength of relationships in a network can be tied to the importance of volume and also to the age of the relationship. Hallen and Lundberg (2004) also used ordinal scales for the development of relationships between actors.

Turnbull, Ford and Cunningham (1996, 13) propose three dimensions for the position concept: access to resources of other network members, reputation, and expectations. Reputation is a function of other network members' experience and trust in that new offerings will have a certain quality. Reputation includes a company's ability to exercise leadership, or to influence the decision making of other network members based on their supposed expertise. In the services and consumer marketing literature reputation has been argued to be used as a cue in assessing companies' quality of goods and services (Bailey 2005, 286). The expectations may be that e.g. a company will effectively set prices for others, or not take advantages of the weaknesses of others, or will set higher ethical standards than others. Table 12 sums up different views of the network position concept and their central dimensions.

Table 12. Different views of the network position concept and their central dimensions.

Authors	**Elements of the concept**	**Dimensions**	**Description**
Johanson and Mattsson 1985	Micro position Macro position	Identity, role, importance, strength of relationships	Micro: link between individual actors Macro: actor in relation to network
Mattsson and Johanson 1992	Limited position Extended position	Identity, role, importance, strength of relationships Function in the production systems (qualitative) relative importance of the resources controlled by the actor (quantitative)	Consequence of the cumulative nature of the use of resources to establish, maintain and develop exchange relationships

Henders 1992	Multidimensional	Role, importance, strength of relationships	How an actor fits into an industrial system in multiple roles
Turnbull, Ford and Cunningham 1996	Portfolio of relationships, obligation, rights	Access, reputation, expectations	Network position is both an outcome of past relationship strategy and a resource for future strategy
Anderson et al. 1998	Position, static element Roles, dynamic element	Expectations (position) Actor's intensions (role)	Different roles change the positions of an actor and are thus inseparable concepts
Aastrup 2002	Acting base of an actor	Dissensus /consensus of relationships Network logics Dependency in relationships	Sensitising concept: base for acting in network structures (thus enabling and constraining future practices)

From the perspective of the present study it can be concluded that INA models network position based on four main dimensions: identity, role, importance, and strength of relationships. Other dimensions, like access, reputation, or expectations can be integrated to the main dimensions. Access is related to resources, which are part of role dimension. Expectations and reputation are related to identity, which reflects the actor's attractiveness as an exchange partner. The four main dimensions shall be used in synthesis of the framework for the empirical part.

3.3.4 Position in project marketing literature

In addition to the position concept in the network literature, project marketing literature provides some additional perspectives on the concept. Position is argued to include both a relational and a functional position in the project marketing context (Jansson 1989; Cova, Ghauri and Salle 2002, 36-37).

The functional position translates the role and the power (see also Thorelli 1986) that an organisation exerts (i.e. the capacity to influence other actors in the market seen as a network). Translated in terms of available resources, the more resources a company has (technological, relational, financial, human), either directly or through its relations with other actors, the stronger the company's position is. The functional position therefore represents the capacity to elaborate differentiated solutions, on a global level, for the market and, on a specific level, for the customer's project (Cova, Ghauri and Salle 2002, 37; Cova, Salle and Vincent 2000, 556). Gustafsson (2002, 414) adds to the functional perspective of the marketer by saying that "the impression that the [selected][7]supplier is the one most capable and willing to deliver a functioning product" is dominant. This impression is partly based on the direct

[7] Author's addition

experience during the purchase phase as well as on references (Salminen 1997; Salminen 2001; Salminen and Möller 2006). In this context the capability is reflected in the ability to manufacture, deliver and install and continuously maintain the organisation needed to achieve a functioning project. Gustafssson (2002, 182) points out the power of reputation, which can partly be gained due to official reference visits but also due to the implementation phase and its successfulness.

The relational position is the result of 'relational investments' during earlier phases of the project marketing process, which include contacts with actors in the milieu, with informants from the customer's buying decision centre who are involved in the project, contacts not directly related to the project, but in some cases also contacts involved in other projects (ibid) in order to develop a good network position (Cova, Salle and Vincent 2000, 555). Cova, Salle and Vincent (2000, 556) use relational position almost as a synonym of network position.

Gustafsson (2002, 177-182) while researching a data base comprising of over 300 projects, concluded that in that data 40% of the informants used primarily *price* as the basis of supplier comparison. There were, however, buyers who instead of focusing only on price, also focused on the object of the project from the materialistic and immaterial perspectives. Material characteristics, such as quality, availability and running costs were important, when the different suppliers were compared. Equally important were the immaterial aspects, like the supplier’s ability to supply the project on time. A new element, when compared with other views on position, was a more forward-looking strategy, in which a supplier was assessed based on their resources to support the customer after delivery. The buyers also evaluated the supplier’s will and capability to take the overall responsibility of the project on a turnkey basis.

The buyers also pay attention to how a supplier handles customers, and especially, how they can meet the needs of the customer and whether their opinions are listened to and taken into account. This reflects how important the customer feels and thinks being a customer of a supplier. Still another aspect according to Gustafsson (ibid) is the supplier’s reputation and the earlier experiences of the supplier. The experiences are further divided into own experiences, reputation and references. Table 13 sums up the different views on the position concept in project marketing literature.

Table 13. Different views on position concept in project marketing literature and central dimensions used.

Authors	**Elements of concept**	**Dimensions**	**Description**
Jansson 1989; Cova, Ghauri and Salle 2002	Solution to the problem, relationships to project network	Functional position: Capacity to elaborate differentiated solutions Relational position: Strength and quality and coverage of relationships to project network actors	Capability to solve buyer's problem and build relationships with other actors in the project network
Gustafsson 2002	Solution to problem and its implementation, suppliers trustworthiness	Performance (cost and other perspectives), role, identity of supplier, commitment	Capability to supply current project and willingness to engage in a long-term relationship with the buyer

The functional dimension clearly brings a new element to the discussion regarding position, as it takes into account one of the fundamental features of projects, the solution to customers' problems. Cost and performance are part of the solution, the functional dimension. Relational dimension and commitment can be regarded as part of the relationship building between the parties. Hence, the project marketing research adds the functional dimension to the INA perspective on positions.

3.4 Role of personal relationships in business relationships

Hallen (1992) has distinguished three levels of business networks. The first level includes the inter-firm relationships, which directly concern the business deals and the phrase task-oriented is used. The second and third level structures are either organisation-centred infrastructural networks or person-centred infrastructural networks. Infrastructural networks can grow either around a company's business activities (organisational-centred infrastructural networks), or around specific individuals in their capacity both as professional businessmen and as private persons (person-centred infrastructural networks) structures are generated. Development of personal relations is usually seen as an outcome of business exchange (Halinen and Salmi 2001, 4). Jansson (1989, 260) has emphasised the importance of repeated social contacts as a means of creating trust in a supplier and the solution proposed by the supplier, as the marketing of projects can be seen as the selling of ideas. The projects do not exist in concrete form until they have been delivered and installed.

Bonds arise in a relationship between two companies as they direct a certain amount of attention and interest towards each other, and they become mutually committed, which is equivalent to giving and being given some priority. Giving priority is closely interwoven with a building up of identity. Actor bonds have an effect on what the parties know about each other and what they can exchange. Identities in relation to each other, as well as to third parties might change. Every act or counteract in a relationship is based on an assumed identity by the counterpart, and that reflects on the actors' bonds. There are different clues to the assumed identity of a company; some stem from the direct past interaction experience, others from what is known, or believed to be known about the counterparts. The process of shaping identities in a relationship is close to that of learning. There is always a margin for beliefs and trust that at the end become essential for the commitment. The development of trust is a social process typical for relationship development. Neither the beliefs nor trust are dependent solely on the direct interaction experience, but may be due to other clues, such as third parties among others (Håkansson and Snehota 1995, 32). Holmlund (1997, 109) argues that actor bonds are closely related to social aspects.

When focusing on business relationships we have abstracted organisations into a notion of a collective actor, and this creates a challenge. Several individuals are usually involved in carrying out the activities that add up to a business relationship between two companies (Håkansson and Snehota 1995, 34). Håkansson and Snehota (1995, 38) argue that those involved pursue goals that are not identical and the interaction is subject to perceptual and other behavioural limits of the individuals involved. Individuals interact on the basis of their perceptions, they acquire their personal identity and position towards others as they learn and develop in conjunction. Any large company consists of several units, such as departments, business units, and divisions. The magnitude of the challenge increases in cases where e.g. the selling party is a supplier network. The number of individuals involved increases dramatically. Håkansson and Snehota (ibid) conclude that relationships are influenced by who is defined as the 'actor'. In certain situations it is thus clear that a company must be seen as a multi-actor, such as a network, while in others it can be considered as a single actor. Wikström and Storholm (1997) emphasise the importance of the buyer's perception in the project business.

Holmlund (1997, 78) analysed the complexity of the collective actor composed of individuals by concluding that relationships exist between firms, but there are few sources of information on the company level, with the exception of, for example, contracts, shared

norms and structured procedures. Therefore, other sources have to be used, and people working in a particular firm commonly constitute these sources. Representatives of a firm, who occupy different functions may be interviewed and observed in the process of generating information on that particular firm. However, an interesting issue in studies on firms and their relationships, which arises from the use of individuals as information providers, is how one or several individuals working in a firm represent it. Thus, how may perceptions of several individuals in a firm be aggregated and transformed to represent the firm's perception? Can a concept such as 'the perception of the firm' be constructed at all? What does 'the buyer's perception' really mean, when the buying firm is represented by several individual actors, who have identical, similar, overlapping, complementary but also opposite perceptions? A researcher has to ask, that if there is a perception, whose perception is it? Håkansson and Snehota (995, 32) argue that interpersonal relationships in their organisations do not sum up in a simple linear way. Holmlund (ibid) especially crystallises the problem by arguing:

"*If the people's perceptions are identical or complementary then it may not be difficult to aggregate their views by summarising them. On the other hand, when views differ and collide, it may be more difficult to aggregate the perceptions. However, it may be assumed that the perception of the person who has the power to make vital decisions in the firm outweighs the perceptions of others when there are differing views. The power to make critical decisions may arise from, for example, ownership, knowledge or authority, which are vital in the sense that they concern strategic aspects such as major investments in the relationship or termination of it*".

In order to succeed in business-to-business markets, selling firms must possess an understanding of the buying behaviour of customer firms. However, such an understanding may be difficult to achieve, as organisational buying behaviour is often a multi-phase, multi-person, multi-departmental, and multi-objective process. This dynamic and intricate process frequently presents sellers with a complex set of issues and situational factors that directly or indirectly influence on the behaviour of the buying firm (Johnston and Lewin 1996, 1). In Subchapter 3.2.4.2 which discusses buying networks the subject of decision making was briefly touched upon. It was mentioned that one significant element in industrial and project buying is that instead of a single actor making decisions there is a buying centre (Robinson, Faris and Wind 1967), which is actually a buying network (Cova, Salle and Vincent 2000; Cova, Ghauri and Salle 2002, 29). Johnston and Bonoma (1981) have defined a buying centre as "all those members of an organisation, who become involved in the buying process for a

particular product or service". In literature another phrase is used for buying centres, decision-making unit (DMU), which might describe the activity better than a buying centre. From the perspective of the present study the interesting question asked earlier in the introduction was: Whose perception is the one that counts?

Möller and Laaksonen (1986, 168) have suggested that contextual and situational factors (e.g. buy-class, product type, importance, complexity, uncertainty) influence the composition and interaction of a DMU. Daves, Patterson and Lee (1996) found that in a high tech DMU study concerning 302 companies the size of the DMU ranged from l to 9 persons, the degree of lateral involvement ranged from l to 8 departments and the degree of vertical involvement ranged from 1 to 4 levels. Those products perceived by the customer as being complex and with high uncertainty will most likely be subjected to a group decision making process rather than be left to the sole discretion of the purchasing agent (Jennigs and Plank 1995, 417; McNally 2002, 178; Lewin and Donthu 2005, 1383). Lateral involvement is found to correlate with the importance of the decisions to be made (Lewin and Donthu 2005, 1383), but on the other hand the degree of centralisation (the extent to which purchasing units and tasks are dispersed as well as responsibilities delegated among several lower managerial levels) decreases, when the complexity increases (Kotteagu, Laios and Moschuris 1995; Patton 1997; Lewin and Donthu 2005, 1383).

Actor bonds of relationships are related to the social dimension of a relationship, and the social dimension is one determinant of relationship quality. Others often applied dimensions are technical and economic dimensions (see e.g. Holmlund 1997, 102-108). Holmlund (1997, 126-132) developed a dimension configuration for the social dimension in relationships according to which there are three company level aspects and six individual level aspects. The configuration is presented in Table 14.

Table 14. Individual and company level content of the social dimension in a business relationship (adapted from Holmlund 1997).

Aspect	Description
Individual level	
Appeal	Interpersonal chemistry and compatibility based on personalities, professional capabilities and viewpoints, interaction styles, demographic factors.
Trust	A belief that needs will be fulfilled in the future by actions undertaken by the other party on the individual level. Evaluation of the other's dependability and reliability, which consists of clear responsibilities, and the making of personal disclosures.

Acquaintance	Knowing the other party based on the length, intensity and intimacy of interaction.
Respect	Respect for capabilities as well as courtesy, politeness, consideration, clean and neat appearance, friendliness.
Congeniality	Smoothness in interactions implying low effort, convenience, norms, routines, institutionalisation, procedures, rituals, smooth communication, conflict-solving, access and responsiveness.
Pleasure	Having fun together and informality.
Company level	
Inter-firm cohesion	Extent of personal interactions based on number of people involved, number of inter-firm personal relationships, number of hierarchical levels involved. Intensity of personal interactions based on the sum of personal relationships weighted by their strength, number of hierarchical levels where strong and relatively strong relationships exist.
Attraction	Strength of interest in exchange with the other party, based on expected economic and social reward-cost outcomes over time.
Trust	A belief that needs will be fulfilled in the future by actions undertaken at the company level by the other party. Evaluation of the other's dependability and reliability, which consists of clear responsibilities, and the making of disclosures.

Business parties gradually build up mutual trust in each other through a social exchange process (Halinen and Salmi 2001, 4). Ring and Van de Ven (1994) emphasise the importance of the early phases of relationships, when people act within their organisational roles, and over time personal relations increasingly supplement role relations. There are, however, cultural differences, as for example in the Chinese business world, the business parties must first become friends (see e.g. Björkman and Kock 1995). According to Halinen's (1997, 257) findings, the first contacts between parties and the first assignment processes proved to be important in building trust. In establishing a business relationship, the contact persons of the supplier first needed to win the confidence of the client and then create opportunities for successful cooperation. It became clear that it takes time to win the client's confidence. What Halinen found (ibid) was similar to perceptions of the pilot case informants, some of which argued that the first contact and first impression are crucial for the development of the business relationship (c.f. Evans et al. 2000; Hefferman 2004, 122; Björgren and Brodin 2005).

Trust has many different definitions or faces according to Blomqvist (1997), and she

has defined trust as an actor's expectation of the other party's competence and goodwill. This definition includes the dimensions of competence and a more abstract goodwill that implies moral responsibility and positive intentions towards the other. Gustafsson (2002) relates trust to personal relationships, and how one person is held by another, which is argued to lie at the base of how the person will relate to that person. Blomqvist (2002, 156) has concluded that management scholars have paid less attention to the role of individual-based trust than to organisational trust, but reminds that organisations are coalitions of people, and it would be easy to conclude that it is always the individuals and not organisations that trust each other. However, individuals and organisations may both be objects of trust, because organisations have reputations and images and they develop routines, processes and cultures, which unify the behaviour of their employees and the responses to external contacts (ibid). In the project marketing context, as well as in the wider context, persons can also have reputations.

Temporary groups often work on tasks with a high degree of complexity, and members in the group depend on an elaborate body of collective knowledge and diverse skills, yet individuals have little time to sort out who knows precisely what. Meyerson, Weick and Kramer (1996, 167) suggest that temporary groups and organisations are tied together by specific trust that is capable of managing issues of vulnerability, uncertainty, risk, and expectations. These four issues become relevant immediately, as soon as the temporary system begins to form.

From the perspective of the present study personal relationships may be involved in the marketing process in multiple ways. Often a marketing and selling project is selling ideas and trust at the organisational and personal level is a prerequisite to buy the ideas. The amount of members on the buyer's side challenges the supplier, as the weight of the members can be different and difficult to assess. The social exchange process is important in the trust building process between the parties.

3.5 Supplier selection in literature

First the evaluation process will be discussed and then the selection process. The discussion tries to focus on subjects, which are relevant to projects, as most of the supplier selection literature concerns non-project items, which is, however, not regarded as a major problem, as most industrial purchasing situations can be managed with a single set of criteria representing different facets or problems associated with purchase (Wilson quoting Lehman

and O'Shaugnessy 1994, 36).

3.5.1 Evaluation of suppliers

A big portion of the evaluation of the suppliers is concerned with identifying the attributes (criteria) relevant to a given supplier selection situation and then evaluating the prospective suppliers with regards to these attributes. Attributes may have different importance and the relative differences are typically taken into account with weight factors set to each attribute. These weights represent a decision maker's judgements on the relative importance or preference of the attributes (Min 1993; Patton 1996, 145). Selecting a supplier includes two steps, first evaluation and then selection (Patton 1996, 145).

3.5.1.1 Criteria in supplier selection

The supplier evaluation criteria can firstly be based on tangible aspects, which are quantifiable by measures such as the number of defects, the product life, the lead time, the number of late deliveries, the technical support, the financial services, and the supplier's financial stability (Bendixen et al. 2004, 372). The second approach on criteria is to evaluate suppliers according to intangible aspects including factors, such as perceived quality, incomplete or conflicting information about the product, ease of ordering, general reliability, willingness of the company to respond in an emergency, service quality, degree of rapport between customers and service providers, understanding between service providers and customers, company reputation, country of origin, pleasantness, and trustworthiness of company personnel (Mudambi, Doyle and Wong 1997, 440; Bendixen, Bukala and Kalala 2004, 372).

Supplier selection literature has proposed different combinations of attributes, with Table 15 below summing up this variety.

Table 15. Examples on attributes applied in supplier evaluation.

Author/ Type of business concerned	**Attributes**	**Explanation of attribute/sub-attributes**
Wilson 1994 quoting Lehman and O'Shaugnessy 1982[8] General	Price Delivery Quality Service	
Möller and Laaksonen 1986	Contextual factors	Industry, Market, Product Type, organisation
	Situational dimensions	Product related dimensions, supplier related

[8] Lehman D.R., O'Shaugnessy, J. (1982). Decision Criteria Used in Buying Different Categories of Products, Journal of Purchasing and Material Management, Vol. 18, No. 1, 9-14.

General		dimensions
Min 1994 General	Financial terms Quality assurance Perceived risks Service performance Buyer-supplier partnership Cultural/communication barriers Trade restrictions	Cost, freight terms, payment terms Quality control, quality team visits Political stability, exchange rate, legal claims, labour disputes, local price control On-time delivery, technical assistance Financial stability, negotiability Cultural similarity, ethical standards, EDI capacity Tariffs and custom duties, counter trade
Choi and Hartley 1996 Car industry	Finances Consistency Relationship Flexibility Technological capability Service Reliability Price	Financial conditions Profitability of supplier Financial records disclosure Performance awards Conformance quality Consistent delivery Quality philosophy Prompt response Long-term relationship Relationship closeness Communication openness Reputation for integrity Product volume changes Short set-up time Short delivery lead time Conflict resolution Design capability Technical capability After-sales support Sales rep's competence Incremental improvement Product liability Low initial price
Yussef and Zairi 1996 quoting Smith 1992[9] Manufacturing technology	Competitive position Organisational structures Role of management Method of project management	Climate (Hostile or supportive) Basis of contract (Calculative or collaborative) Time-span (Short-term or long-term) Strategic focus (Current products or future possibilities) Allocation of functions (New function or not) Change in the pattern of influence (Deliberate or unplanned change) Relationship of new business to the rest (Traditional or innovative approaches) Design of individual jobs (Scope of variety) Performance visibility (Access to information) Planning or firefighting (Changed responsibilities and expectations) Boundary management (What choices are made) Responsibility for project (Project team members and construction) Training and communications

[9] Smith, A., "Potential for strategic partnerships in foods manufacturing – systems supply within Unilever", MBA dissertation, The Cranfield School of Management, Bedford, 1992.

	Financial health of supplier Positioning on the technology spectrum Performance measurement	Conflict resolution (legal or bargaining) Degree of dependence (Percentage of business with any one customer) Financial performance and stability (Capital intensity and investment growth) Identification of key technologies (Consideration of technology spectrum) Technology management framework and to business strategy Identify how suppliers are performing (Rate against quality, cost and delivery) Capture of customer feedback (For use in continual improvement)
Bendixen, Bulkala and Abratt 2003 Industrial Electric Panels	Delivery period Price Technology Brand name Spare parts	
Dulmin and Mininno 2003 Equipment for road and rail transportation	Mark-up Processing time Prototyping time Design revision time Quality system Co-design Technological levels	Cost related Time to develop product structural designs Speed in constructing prototypes Flexibility to accept and perform project revisions Presence or absence of quality certifications Supplier's effort within the project team Availability of key technologies and investments in emerging technologies
Brahadwaj 2004 Electric components	Supplier's product quality Supplier's delivery/order fulfillment Price Supplier's post-sales service	 Condition of products on arrival, On-time delivery performance, Accuracy in filling orders, Order cycle time, Ability to fill emergency orders, Accuracy in billing and credit Post-sales assistance and support, Ability and willingness to assist with the design process

Table 15 illustrates the big variety of criteria applied in supplier selection, but even so it still represents only a fraction of the research concerning supplier selection, which is one of the most widely researched subjects in the field of marketing (Sheth 1996, 8). However, even such a small sample confirms that the vast majority of academic papers focus on other forms of business rather than projects. However, the huge base of research is valuable, even though it is not related to buying projects.

From the examples in Table 15 we can conclude that for suppliers of components or, should we say, non-project type products the governing criteria are the ones related to quality, price and delivery, which includes delivery time and consistency of delivery performance. Wilson (1994) evaluated the trends in supplier selection criteria and concluded that especially for non-routines products quality and service related criteria have become more central, but the importance of price has kept its position. Quality related criteria have been emphasised also in other studies (Min 1993; Choi and Hartley 1996, 341; Brahadwaj 2004, 320), but also

the delivery aspects (Choi and Hartley 1996, 341), especially on-time deliveries. Ittner et al. (1999) argue for non-price based selection criteria because of performance gains from partnership practises. Verma and Pullman (1998) on the other hand argue that even if the buyers claim that quality and delivery attributes are the key elements in supplier selection, in reality, price and delivery performance are the key elements.

If we take a look at two examples from Table 15, Yussef and Zairi 1996 and Dulmin and Mininno 2003, we can see a distinct difference in the criteria applied. Both represent businesses to some extent compatible with the project business, and in both samples the criteria are different from the other examples. Attributes try to measure also cooperation capabilities, strategic aspects, such as commitment to invest in new technology and the role of management. Perhaps we can conclude that as soon as the nature of the business becomes more uncertain than is in e.g. the component business or industrial commodity business, the evaluation process becomes less standard.

3.5.1.2 Supplier selection

Evaluating suppliers based on attributes is only a part of the supplier selection process described in purchasing literature. The evaluation attributes have to be combined to ranking positions between the suppliers. There are different models to produce the ranking of the suppliers.

There are two basic types of selection models. In linear weighting models or linear compensatory models, weights are given to the criteria, with the biggest weight indicating the highest importance. The model allows poor performance on one criterion to be compensated for by another criterion. Ratings on the criteria are multiplied by their weights (if weights were applied) and totaled in order to obtain a single figure for each supplier. The supplier with the highest overall rating can then be selected as the best overall supplier (Patton 1996, 136; De Boer, Labro and Morlacchi 2001, 82).

Another type is the non-linear and non-compensatory model, which does not permit weaknesses on one criterion to be compensated for by another criterion (Patton 1996, 137), and minimum levels for each criterion are required (De Boer, Labro and Morlacchi 2001, 82). In brief, it can be stated that linear models predict the best suppliers and non-linear models identify the worst suppliers (Patton 1996, 140).

Decision makers offer different opinions when asked what the driving forces are from the situational environment, such as product related dimensions or supplier related dimensions (Möller and Laaksonen 1986) that determine the organisation of the purchasing function.

Their opinions on the supplier selection process and criteria to be used also differ and naturally also lead to different actions. All this is explained by the following factors, which are part of a process of contagion and determine the nature of the actual supplier relations:

- Differences in their personal past trajectory through various networks, determining their personal interpretation of the real world,
- Their position in the present company, described as the negotiated social order[10],
- The company's world-view on 'how things have to be done, including purchasing': the socially negotiated order. (Kamann and Bakker 2004).

We can conclude that the actual selection of the supplier is not so straightforward as one might expect from the criteria and models. Firstly, the attributes have to be selected, but as argued by Kamann and Bakker (2004), what these are depend on the selector. A company may have a policy to be followed, but there is always room for individualism. Secondly, applying weight to attributes leaves room for personal interpretations. Thirdly, the negotiated social order may influence the process significantly. Findings by Verma and Pullman (1998, 740) confirm the contradiction between theoretical and practical supplier selection practises:

"For example, it appears that managers perceive quality to be the most important attribute but they assign more weight to delivery performance and/or cost, when actually the choosing supplier. The results imply that even thought the managers believe that several attributes are important for supplier selection, in actual practice the low cost supplier will be selected."

For the purposes of the present study it was interesting to see that supplier selection is not only a mathematical process, but that there is always the individualism of the selector involved.

3.5.1.3 Supplier buyer relationships[11]

The purchasing literature, instead of only speaking about supplier selection, is shifting towards the relationship perspective, which looks at more than just the transaction (Patton

[10] The process that results in the accepted and shared modus operandi of an organisation—including the view on the purchasing function—is a process of negotiation. The worldview or 'order' of any organisation is determined by those who are in a position to dominate the discussion about it. The ones which rank high in the social order of the organisation have more impact on the discussion than those that are awarded a lower rank. This ranking of people and functions can be termed the negotiated social order: the CEO ranking highest, and so forth… (Kamann and Bakker 2004).

[11] Supplier/buyer relationship is discussed thoroughly in Supply Chain Management literature (see e.g. Scott and Westbrook 1991; New and Payne 1995; Tan et al. 1999; Prahalad and Hamel 1990; Ellram and Pearson 1994).

1996, 135; Chang et al. 2006). Supplier development[12] and deeper collaboration between the parties has been touted as necessary for improving supply chain effectiveness and a firm's competitiveness in the manufacturing processes. In practice, supplier involvement includes a wide range of collaboration activities such as order cycle times, quality improvement, order completeness, education, training, and even direct capital investment by the buying firm in the supplier (Krause, 1997; Krause et al. 1998). These competitive advantages are achieved through improved supply chain relationships, and tightened links between chain partners such as suppliers, manufacturing facilities, distribution centers, wholesalers, and end-users (Berger, Gerstenfel and Zeng 2002, 9) can be for example improve product quality, accelerate product development processes, and increase process efficiency through supplier-originated ideas and technologies (Ittner et al. 1999, 276). In the car industry, for example, selecting suppliers based on the potential for close, long-term relationships was rated as very important by all firms involved (Choi and Hartley 1996, 341).

In order to gain the advantages of partnerships, selection practises for suppliers have to be more advanced than the most simple ones, with models such as the cluster analysis being proposed (Ittner et al. 1999, 341).

From the perspective of the present study, even though the supplier selection literature reviewed does not concern projects, there is reason to believe that buyers prefer longer relationships to shorter ones.

3.6 Changes in network and relationships

Remembering that a project is a process with multiple steps (see Subchapter 3.2.3) it is justified in assuming that change is involved in the network structures of the project network and relationships between actors in the network. Hence, reviewing earlier studies on change in networks shall be performed next in order to gain a better understanding of the phenomenon of interest - network positions in project networks.

3.5.1 Introduction

The basic assumption regarding business relationships in the literature seems to be that it is some kind of continuous changing process, or development, which can take any direction (c.f. Van de Ven 1992; Möller and Wilson 1995; Halinen 1997). Halinen (1997, 5) argues that

[12] Supplier development is defined as any effort by a buying firm together with its supplier to increase the performance and/or capabilities of the supplier to meet the buying firm's supply needs (Krause 1998).

especially temporal dimensions of relationships are challenging, and from the management perspective coping with the change becomes a problem, when it constitutes a major challenge for management. There is nothing more difficult to handle, more doubtful to bring success, and more dangerous to implement, than change (Tikkanen and Tuominen 2000). In project marketing or in projects generally, a temporal nature governs the process, as the intention is that the whole network structure exists solely for the needs of the project. Therefore, we will next discuss the "lifetime" of a project network.

3.5.2 Temporary networks versus longer-term relationships

Time is argued to be an important ingredient in interaction or mutual or reciprocal action (Håkansson and Waluszewski 2002), and the INA emphasises the length and closeness of buyer/seller relationships (Holmlund 1997, 133; Håkansson and Snehota 1995, 385; Håkansson 1982, 1). The "suppliers and customers establish, develop, and maintain lasting relationships with each other" (Johansson and Mattson 1987, 37) or firms are said to "engage in long term exchange relationships" (Möller and Wilson 1995, 33), or continuous relationships (Tähtinen 2001). Based on what was said regarding the length of the relationships, a question inevitably arises: What is the importance of short and possibly one-time relationships in the project marketing context?

The pilot case study gave indications that customers prefer longer relationships with suppliers, provided that in the past their experiences regarding the relationship have been positive, and Gustafsson (2002, 177-182) reported that customers aim at continuing a relationship after the project has been implemented through the services of the project supplier. Hence, the companies would like to engage themselves in long-term exchange relationships, just like e.g. Möller and Wilson (1995, 33) argue, or the parties build a marriage like bonding (Wilkinson and Young 1996). Owusu (2003, 50) has concluded that one reason for wanting longer relationships is that developing a relationship requires adaptation by the relationship parties due to the developed interdependence, and therefore there is difficulty and a lack of desire to break the connecting bonds.

There are different kinds of projects but capital investment projects like the ones carried out by the researcher's organisation are perhaps temporary by nature. However, in the case of Pilot 1, the project marketing process lasted from 1996 until the contract in December 2004, and after the implementation of the project there was a continuation of the relationship for 18 months in the format of after sales and maintenance of the relationship. Today, the length of

the relationship has already continued for over 10 years. Similar histories can also be found in the other pilot case companies as well. For Pilot 3 the marketing phase took two years, which was followed by an implementation phase of one year, and following this there was a similar kind of support relationship as in the case of the steel mill. Pilot 4 has had a very long relationship, as it has lasted 12 years, during which some 15 projects have been delivered. Thus, based on previous examples, temporary may be the correct phrase to describe the nature of the project in question, but it does not necessarily have much to do with the length of the relationship between the suppliers and their customers.

In the network approach literature there are many studies concerning the development of relationships, and there are plenty of papers and articles focusing on dissolution of relationships, the "long-term real INA" or continuous relationships (see e.g. Alajoutsijärvi, Möller and Tähtinen 1998; Tähtinen 2001; Halinen and Tähtinen 2002). The similarity between the relationships in those studies and project relationships exists, as in all of them one or several of the parties either aims at establishing longer relationships, or has a plan to dissolute it at a certain time, or they may even end up in the situation, where a dissolution process is the preferred option.

As a conclusion, it is justified to argue that project networks, even though they have the specific aim of the project in question, are not different from "traditional" INA networks with regards to the time perspective, and the contribution of this study should be positioned in the industrial network approach.

3.5.3 Dynamism of relationships in networks

The complexity of business networks makes it challenging to assess changes properly (Håkansson and Snehota 1995, 281). Incremental change, or evolution or continuous process has been regarded as the main mode of network change (Easton 1992, 24; Håkansson and Snehota 1995, 281-284), and Håkansson and Snehota (1995, 283-284) have argued that the continuous networking process, comprising the connecting of actor bonds, activity links and resource ties, causes changes. Other types of change mechanisms do exist but any radical changes have been regarded as unusual (Easton 1992, 24), especially as in evolving relationships there is inertia slowing down changes (Ford et al. 2003, 51-52), and Håkansson and Snehota (1995, 282) argue that the structure of customer and supplier relationships seem relatively stable. Ford et al. (ibid, 51-57) propose a stage model for relationship development between a buyer and a seller. The proposed model is shown in Figure 7.

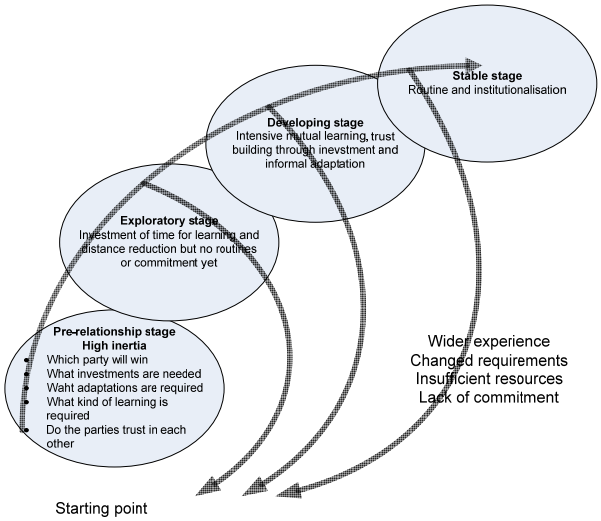

Figure 7. Stage model of relationship development (adapted from Ford et al. 2003, 51).

The pre-relationship stage may be initiated because of dissatisfaction with an on-going relationship, or one of the parties is looking for a better offering or perhaps lower cost, or a buyer just want to widen its supplier portfolio. The evaluation of the counterpart in the pre-relationship stage requires considerable two-way communication, but there will be no actor bonds between individuals. So the conversation is likely to take place without commitment. This leads to the further question: How can we develop the needed trust between us to enable a relationship to develop?

During the exploratory stage the customer and supplier engage in discussion or negotiation about a possible purchase of a one-off business service, such as consultancy, or a piece of capital equipment, or during the time of prototype or sample delivery for a frequently purchased product or service. In this stage the amount of learning required by the two companies is probably at its greatest. No routine procedures will have been developed to cope with issues as they arise and both parties are likely to require the giving of a considerable investment in management thought and time to the relationship, and they may have great uncertainties about any future benefits. In this stage the relationship will appear to be costly and the future benefits uncertain, particularly when compared with other, existing relationships. There will also be a lack of trust and a concern about the other company's commitment. Each party has to convince the other that they are seriously interested in the relationship and at the same time have to gain the interest of the other party.

A relationship is in the developing stage when the business between the two companies

is growing in volume or changing in character in a positive way. The development stage is associated with growing actor bonds, resource ties and activity links. The uncertainties of the two companies about each other's ambitions and abilities will have been reduced by the development of actor bonds between them. In this stage, learning is likely to be more directed towards the specifics of the relationship and finding out about the investments and adaptations that the companies should make. However, improvements in social interaction and developing actor bonds alone are insufficient to build trust between the parties. Beyond a certain point, trust between business companies can only be built on actions, rather than promises. It is the willingness to adapt that demonstrates the company's commitment to the development of the relationship.

The maturity stage occurs when the companies have reached a certain stability in their learning about each other and in their investments and commitment to the relationship. The mature stage can also lead to problems. These occur as the routines that allow the relationship to operate with low costs and little managerial involvement may not be questioned, so that they increasingly relate less well to either company's evolving requirements. This process is institutionalisation.

The changes between the stages can take place at various times. The decline into institutionalisation or the lack of apparent commitment by one party can mean that it no longer satisfies the changing requirements of the other. This can trigger the company to enter the pre-relationship stage with another company. Other relationships can switch into the developing stage if either party is able and willing to respond to new or different requirements. Alternatively, a company's experience in other relationships can highlight the value of an existing one and this can also move it back into the developing stage. A certain kind of inertia is related to the changes in the model.

A second type of change model is a circular model, in which the change occurring in a single dyad may have different consequences on other connected relationships. Part of the change always remains within a business-relationship dyad, whereas some part of change may also affect other relationships and actors in a network (Halinen, Salmi and Havila 1999, 781). The former type of change has been called confined change and the latter connected change (ibid). Herz (1998) has called changes spreading to other relationships domino effects. Relationships are not only dyadic and not in isolation, instead a relationship may be influenced by and have influence on other relationships (Ritter 2000; Håkansson and Snehota 1995). Anderson, Håkansson and Johanson (2002) have drawn a distinction between primary

and secondary functions of relationships. Primary functions comprise positive and negative effects on the two actors (firms) in their interaction in a focal dyadic relationship. The secondary functions capture the indirect positive and negative effects of a relationship because it is directly or indirectly connected to other relationships.

Halinen, Salmi and Havila (1999, 788-792) propose a framework of network change comprising mechanism, nature and forces of change. This is shown in Figure 8 (see also Havila and Salmi 2000).

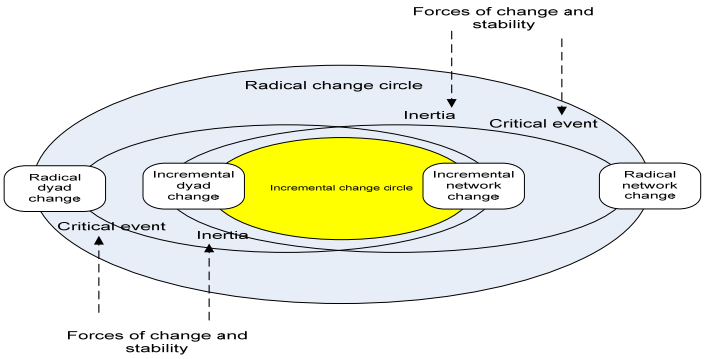

Figure 8. Change in business networks (Halinen, Salmi and Havila 1999, 789).

Key elements in the proposed framework are: (1) dyadic change and network change; (2) radical change circle and incremental change circle; and (3) transfers from one circle to another. In the model there are two units, dyad and network. Change always emerges at the level of dyads, and may either be confined to a single relationship or spread to another and become a network-level change. The changes may be incremental or radical. The model distinguishes between two concepts that reflect the impact of various change forces behind network dynamics: inertia and critical events.

Inertia, defined as the tendency to maintain the deep structure of the network, manifests the various interdependencies between companies and keeps the network in a stable state, where only incremental change and adjustments occur. By contrast, critical events that result from the interplay of different change forces trigger radical change in dyads and may cause breaks in connections: actor bonds, activity links and resource ties (Flanagan 1954; Bitner, Booms and Tetreault 1990; Edvarsson 1990; Halinen 1997; Halinen, Salmi and Havila 1999; Holmlund and Strandvik 1999; Edvarsson and Strandvik 2000; Owusu 2003). What is perceived as critical and in need of prompt action depends on the perceptions and intentions of business actors. Halinen, Salmi and Havila (ibid) state that there seems to be situations where radical changes take place within an individual dyad, while the business network

remains unchanged. It is also possible that that an incremental dyadic change leads to a radical network change in cases where a small initial change is perceived as important by other actors, and consequently promotes major responses.

From the perspective of the present study, radical changes caused by critical events are the focus, and such changes can either take place in the dyad of interest or in the network. A change can also spread from a dyad to the network.

3.5.4 Critical events as motivators of the change process

In contrast to routine incidents that pass by unnoticed, critical incidents are labelled critical, as they deviate from the normal and therefore catch attention (Tuominen 1999, 281). A critical incident is a positive or negative 'event' with certain perceptual and chronological parameters that is memorable to the individual concerned, and has perceived significance on the basis of its influence over the content and process of relationship development in personal or business terms, or both (Holmlund and Strandvik 1999, 10; Cope 2003, 8; Tuominen 1999, 281). For example, a negative critical incident may result in the termination of a relationship and a positive critical incident may result in a stronger and deeper relationship. A critical incident may consist of individual actions but also of higher-level interactions. Flanagan (1954, 327) defined an incident as "*any observable human activity that is sufficiently complete in itself to permit interferences and predictions to be made about the person performing the act*".

The concept of the critical change (or critical incident/event) has been used in studies of business relationships to refer to events that have a decisive effect on relationship development, either positive or negative (Halinen 1999, 272; Holmlund 2004). Cope (2003) has further proposed the concept of critical episode, because 'critical incident' does not always capture either the complexity or fundamental significance of certain critical experiences that are not adequately captured by the notion of a discrete and easily definable 'event'. Halinen, Salmi and Havila (1999, 786) have further defined a critical event as an incident that triggers radical change in a business dyad and/or network, or can initiate an organisational change and progression (Cope's 2003, 15). Critical events may be either exogenous and relate to or develop from external factors, or endogenous and relate to or develop from internal factors (Knoben, Oerlemans and Rutten 2005, 9). What is external or internal depends on the perspective. When referring to Figure 9 (Halinen, Havila and Salmi 1999, 789), internal could be defined also as dyad, and external as network, if a dyadic

relationship were to be researched. A critical event is a manifestation of the change forces inherent in networks. A critical event has the potential to break the deep structure of a dyad that is the connection between two parties. To develop a radical change in a business network, the effects of the event have to be received in several relationships (Halinen, Salmi and Havila 1999). It has also been argued that such a trigger event is a stimulus that is perceived to be relevant in the environment compared with the actors' (e.g. customers') goals, and which results in some form of change in personal or organisational values, desired value and value judgement (Flint, Woodruff and Gardial 1997, 165).

Halinen, Salmi and Havila (1999, 791) propose that the mental process of enactment is a key explanation for both stability and change in networks. Depending on the perceptions of individuals, and how they view the business context and its inter-dependencies, and possibilities to achieve their business goals in this context, while some events are considered critical, while others are perceived as minor, allowing inertia to come to the fore.

In a network, the underlying structures of actor bonds, activity links and resource ties are fundamentally altered during revolutionary periods. Such periods imply radical change in individual dyads. Change can be considered radical when a relationship between two actors is broken or a new relationship is established (Halinen, Salmi and Havila 1999, 785). Havila and Salmi (2000, 110) further define event as specific in the sense that managers take extraordinary measures or that some outcomes are distinguishable in the relations or network as being the result of the events. Some of these events are critical, which in their opinion leads to either the disruption or establishments of relationships, and thus may bring about radical change to the network. Gersick (1991, 22) sees critical events as an impulse that sets a stage for radical change.

However, it is not the mere event that is critical, but the way that actors perceive and react to such an event. Edvardsson and Strandvik (2000, 82) argue that traditionally in service research an incident can be regarded as critical, if a respondent can recall a specific unexpected episode. Therefore, any event can be a critical one, making it difficult to predict them, which, in turn, might explain the fact that empirical studies often find radical change in network structures by chance. Flanagan (1954, 327) suggests that the importance of an incident not only depends on whether the incident makes a significant contribution either positively or negatively to the general aim of the activity, but also on the consequences. In Flanagan's (ibid) definition incidents must occur in a situation where the purpose or intent of the act seems fairly clear to the observer, and where its consequences are sufficiently definite

to leave little doubt concerning its effect. The consequences have also been emphasised in the relationship context by Edvardsson and Strandvik (2000). Voima (2000, 6) has accordingly defined a critical incident as an interaction or factor that changes the customer's evaluation of the relationship, and often in project marketing for example reference visits can have a great deal of influence either way on a customer's evaluation (Salminen 2001).

Edvardsson and Strandvik (2000) argue that one has to consider both the situational dimension and time dimension to be able to understand the criticality of critical incidents because the criticality changes over time and between actors. They further argue that customer relationships are dependent on these dimensions both internally and externally. The time dimension has to do with the history, present time and future of the relationship as well as changes over time in the internal and external context of the relationship. Thus, a critical incident occurs within a relationship, is affected by the relationship and affects the future of the relationship. The second dimension is the situational dimension, which depicts the internal and external conditions of the relationship. The situational context changes over time, and Edvardsson and Strandvik (ibid, 86) further argue that critical incidents should be analysed within this context at the time, when the incident occurred. However, in the present study, for example, that would not be in any way possible. There are cases in which incidents that traditionally would be defined as critical are not critical to the customer relationship. Still there are cognitive effects and word-of-mouth effects. As these incidents are remembered they may accumulate over time and may be combined with similar or different observations leading to a reaction on the relationship level. In order to study such effects the research should have an explicit focus on processes weakening or strengthening customer relationships (Edvardsson and Strandvik 2000, 89).

Often identified critical events on the organisational level or in a larger context are shifts in organisational structure, changes in marketing and purchasing strategies, acquisitions, mergers, bankruptcies, partner switching, changes in technology, the entry of resourceful and determined competitors, changes in regulatory infrastructure, dramatic shifts in consumer preferences, and economic recessions (Knoben, Orlemans and Rutten 2005, 9). Also the loosing of trust in a dyadic business relationship may turn out to be critical for the dyad, unless corrective actions are successful (Svensson 2001, 433), as is the ignoring of the other part of the dyad either by not responding to communication or communicating incorrectly (Alajoutsijärvi, Möller and Tähtinen 1998). A critical event can also take place on an individual actor level due to personnel changes or persons not showing trustworthiness or

commitment (Havila and Salmi 2000, 116; Knoben, Orlemans and Rutten 2005, 9). The role of individuals may be the key dimension e.g. in contexts regarding significant knowledge transfer (Lindsay et al. 2003). In the project business context the behaviour of individuals has been reported as acting as a critical event (Strang 2005, 81).

Critical incidents represent potential instances of change in business relationships. Perceptions of unexpected and deviating incidents, i.e. critical incidents, may initiate actions that affect how the relationship develops in the short-term and the long-term. Following this way of reasoning, critical incidents represent windows into the relationship, through which the nature and change of the relationship can be seen (Holmlund and Strandvik 1999, 1).

In the present study *a critical event is an incident that causes changes in the perception of the supplier by the buyer and consequently alters the supplier's position in the project network via one or several dimensions and consequently the supplier's attractiveness as a business partner.*

3.5.5 Dimensions of network position during different stages of the project marketing process

Not many researches have focused on network position dimensions during the project marketing process, and this subchapter sums up the findings from the literature concerning various topics, such as e.g. relationship development in networks, and project marketing. Research on relationship development gives some indications about the phenomenon, but the pilot case study findings revealed very little about this matter.

The relational position is the result of 'relational investments' during the earlier phases of the project marketing process: prior to any knowledge about the project, pre-tender and during tender preparation (Cova, Ghauri and Salle 2002, 37). The functional position is not specifically located at any single stage, instead it is involved during the whole process until the supplier selection (ibid, 36-37).

Ford et al. (2002) have argued that at the beginning of a new relationship, the product or solution specific dimension can be a starting point for the relationship. A new relationship may also be started "*because some particular episode in an existing relationship has sparked dissatisfaction*". In the pilot case, findings were related to the early phases of the project marketing process. Problem solving according to many informants starts with finding out what kind of solutions have earlier been used and who has experience in the required field. Therefore, a potential supplier must have industry specific experience, and must also be able

to provide new innovations. In addition, the informants were not expecting to be a prototype tester. The pilot case study did not shed much light on the question about the dimension related to different phases of the marketing process. One researcher has reported that information received from trusted friends and business colleagues on the reputation of prospective suppliers, along with the general attractiveness of the supplier, may often form during the early stages the basis for the supplier ranking (Anderson 2001, 172-173). Hence, identity governs the perception of the buyers. Jansson (1989, 260) argues that good reputation, guarantees, references, and reference projects are the key to trust in a supplier during the stages, when the buyer has not yet selected the supplier of a project. As an alternative way to create trust in the supplier repeated social contacts are proposed (ibid). Thus, social contacts between suppliers' and buyers' personnel can compensate deficiencies in supplier reputation, guarantees, reference and reference projects.

Ford et al. (2002) in their general relationship model, however, suggest some relevant ideas regarding the matter. When the parties have gained some knowledge about the other party there is still a lack of trust and uncertainty about the other party's commitment and Ford et al. (ibid) conclude that "*the customer may doubt that the seller will actually deliver what it is promising*". In Ford et al.'s model (ibid) the growing importance of the developing stage is stressed, as in this stage *"the business between the two companies is growing in volume or changing in character in a positive way*". The development stage is associated with growing actor bonds, resource ties and activity links. It is in this stage that adaptations by the two sides leading to activity links and resource ties become important. Adaptations are the way in which a company shows that it can be trusted to respond to a counterpart's requirements.

Table 16 sums up the phase related dimensions of the supplier's position in the project marketing network. It is arranged according to the phases of the process model proposed by Cova and Holstius (1993). Dimension composition is based on the priori model presented in Subchapter 3.6.1. The relevant literature was reviewed and any connections between the dimensions of the project marketing stages are illustrated in Table 16.

Table 16. Governing dimensions during the project marketing stages in the literature and in the pilot case study (X = connection between stage and dimension in earlier research).

Project marketing stage **(Cova and Holstius 1993)**	**Governing dimensions**	**Cova, Ghauri and Salle 2002**	**Ford et al. 2002**	**Anderson 2001**	**Jansson 1989**	**Pilot case study**
Identification of requirements	Relationship dimension	X			X	
	Functional dimension	X	X			X
	Identity			X	X	
	Experience dimension				X	X
	Role dimension					
Feasibility study	Relationship dimension	X			X	
	Functional dimension	X	X			X
	Identity			X	X	
	Experience dimension				X	X
	Role dimension					
Research/selection of suppliers for advice	Relationship dimension	X			X	
	Functional dimension		X			X
	Identity				X	
	Experience dimension				X	X
	Role dimension					
Definition of specifications and compilation of terms and conditions	Relationship dimension	X			X	
	Functional dimension					X
	Identity				X	
	Experience dimension				X	X
	Role dimension					
Setting up bidding list Invitation to tender	Relationship dimension	X			X	
	Functional dimension					
	Identity				X	
	Experience dimension				X	
	Role dimension					
Information exchange	Relational dimension	X				
	Functional dimension					
	Identity				X	
	Relationship dimension		X			
	Experience dimension				X	
	Role dimension					
Reception and analysis of suppliers' proposals	Relationship dimension	X	X			
	Functional dimension					
	Identity				X	
	Experience dimension				X	
	Role dimension					
Selection of suppliers and setting up shortlist	Relationship dimension	X	X			
	Functional dimension					
	Identity				X	
	Experience dimension				X	
	Role dimension					

Negotiation	Relationship dimension Functional dimension Identity Experience dimension Role dimension	X	X		 X X	
Final evaluation	Relationship dimension Functional dimension Identity Experience dimension Role dimension	X	X		 X X	
Selection of supplier	Relationship dimension Functional dimension Identity Experience dimension Role dimension	X	X		 X X	
Contract						

It is easy to detect that the current knowledge on governing dimensions of network position in project marketing context is vague and scattered. Most of the arguments by earlier researchers are very general and even very surprising. One of such argument was that social contacts could compensate experience and references (Jansson 1989). One has to take into account that his research concerned Far East and in that culture the importance of social contacts is emphasized (Björkman and Kock 1995).

3.7 Research framework

This section discusses and sums up the research framework of the present study. The framework is a synthesis of discussions in Chapter 2 (pilot case study) and Subchapters 3.1-3.6 (literature review). The key concepts on which the framework is based are project networks, network position, incremental and radical changes in relationships, critical events, and processes.

The research framework is presented in Figure 9. The central concept of the framework is the network position (e.g. Mattsson 1985, Johanson and Mattsson 1992, Henders 1992, Wynstra 1994; Anderson et al. 1998, Aastrup 2002), and specifically a supplier's position in project marketing networks (e.g. Cova, Ghauri and Salle 2002; Cova, Salle and Vincent 2000; Gustafsson 2002), which earlier was defined *as preference as business partner from project buyer's perspective*. A project supplier's position is valid within the boundaries of the project network (e.g. Hellgren and Stjernberg 1995; Dubois and Gadde 2000; Lundin and Steinthórsson 2003). A position possessed by a supplier is not constant, and instead it is shaped and shifted by incremental and radical changes (e.g. Håkansson and Snehota 1995; Ford et al. 2003; Halinen, Salmi and Havila 1999; Havila and Salmi 2000), and it is also the

stage where the marketing process takes place (e.g. Cova, Ghauri and Salle 2002; Ford et al. 2002; Anderson 2001; Jansson 1989). Radical changes are initiated by critical events (e.g. Flanagan 1954; Holmlund and Strandvik 1999; Holmlund 2004; Edvardsson and Strandvik 2000), which were defined earlier as an incident that causes changes in the perception of the supplier by the buyer and consequently alters supplier's position in the project network via one or several dimensions and consequently supplier's attractiveness as a business partner. The project marketing process (e.g. Holstius 1987; Cova and Holstius 1993; Cova, Salle and Vincent 2000; Cova, Ghauri and Salle 2002b) anchors the supplier's position to the different stages of the process. The stage of the project marketing process shapes the perceptions of the project buyer, and consequently how the suppliers are positioned within the project marketing network.

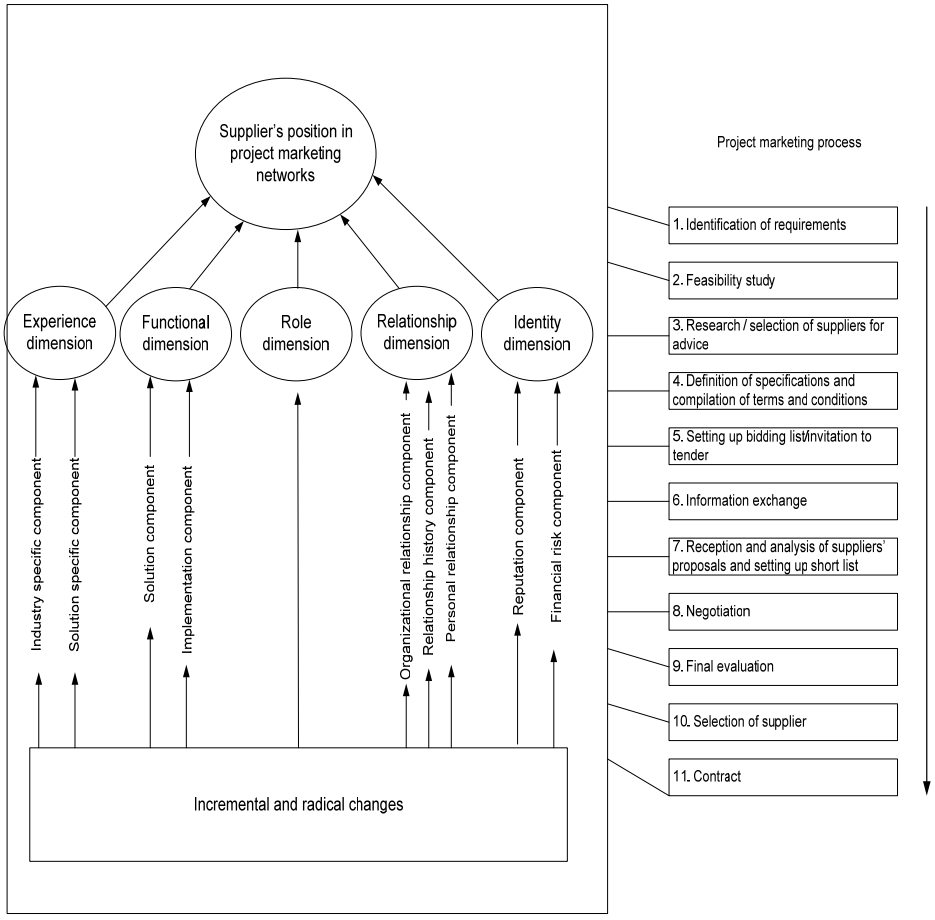

Figure 9. Stage-dimension framework for studying network position of suppliers during the project marketing process.

The research questions of the present study focus on the structure of a supplier's position in the project marketing networks (RQ1: How is the supplier's network position composed in the project marketing network *during the project marketing process up to and until contract placement?*) differences in the structure of the position between the stages of the project marketing process (RQ2: *How does the composition of the supplier's position in a project marketing network change between the stages of the project marketing process?*), and factors causing changes in the supplier's position (RQ3: *What kinds of events* shape the supplier's network position in the project marketing network?). The research framework aims at answering the research questions, and it has been applied in the data collection and analysis. It also guides the drawing of conclusions.

4 RESEARCH DESIGN

In this chapter, first the selection of the research approach and then the methods are discussed. The pilot case study and literature review were not able to provide a precise solution to the research problem, but they were able to define more clearly the gap in the existing knowledge. A clearer view with regards the needed information makes the selection process of appropriate methods for the empirical part of the study easier (c.f. Baker 2001, 373).

4.1 Research perspective

A researcher should explicitly state his/her underlying assumptions and values, as these influence decisions concerning research strategy (Easton 1995; Miles and Huberman 1994, 4). A paradigm groups together the hierarchy of decisions needed to carry out the research process (Easton 1995, 413). A paradigm is a belief system, an overall conceptual framework within which a researcher can work and comprises ontology[13], epistemology[14] and methodology (Guba and Lincoln 1994, 107; Perry, Riege and Brown 1999). There is no objective logical or empirical ground for choosing a paradigm, but it should be consistent with the researcher's own presumptions (Hunt 1992b, 17; Sohb and Perry 2005, 1196).

The present study, as was presented in the introduction, is abductive. This is normally associated with interpretive approaches (Baker 2001, 375). The first step in the hierarchy of decisions to be made, before methodological choices, is to define the researcher's philosophical assumptions about human nature and the nature of reality (Patterson and Williams 2005, 363).

Marketing research is striving towards discovering an understanding of the common reality of an economic system including independently operating people, and the research concerns a social world (Zinkham and Hirschheim 1992, 83; Tikkanen 1996; Perry, Riege and Brown 1999, 18; Sobh and Perry 2005, 1198). In a social science, generalisations are not stable over time, and patterns of human activity may be in a continuous stage of evolution. In the present study, the whole nature of the phenomenon being studied is temporary, and in a continuous process of change. No interpretation of the world we are studying, the project

[13] Philosophical assumptions about human nature and the nature of reality (Patterson and Williams 2005, 363).

[14] The nature and process of knowing (Patterson and Williams 2005, 363).

marketing network, can be made independently of human sensations, perceptions, information processing, feeling and actions (Peter 1992, 74). Hence, the reality in the project marketing network and the positions of suppliers in it, is an interpretation of the truth. Interpretation is one the basis of the relativist perspective to ontology, in which reality is relative to situation and time (Tikkanen 1996, 32). We are not looking at one and only realist truth to be discovered through a window (c.f. Perry, Riege and Brown 1999; Easton 2000, 207) but the discovery has to be based on interpretation.

The ontological foundation in the present study is relativist, and the following step in the hierarchy of decisions is to select the epistemological basis of the study (Easton 1995, 413). Relativist and constructivist views are close to each other (Peter 1992; Easton 1995, 439) and the differences are in ontological assumptions. Relativist reality is relative to time and situation, but a constructive reality is constructed for example through a social process (Tikkanen 1996, 32). Social interaction and influence among researchers, idiosyncratic beliefs and values of individual researchers, researchers' subjective interpretations and selection of observational data for report are of critical importance to the constructivist approach in understanding how scientific knowledge develops (Peter and Olson 1983, 119). This study is constructing or refining theory and in that respect is constructive by nature. In the relativist/constructionist view the standards of accepting knowledge are developed by the scientific community. Hence, it is important to report clearly the positioning of the study.

The new knowledge for e.g. the theory or interpretation of reality can be based on the researcher observing or interpreting phenomena, reading and interpreting other researchers' views and discussing the issue with others. Conclusions may be drawn about the researcher's interpretation on the phenomena (Peter 1992, 74), and a theory has meaning only within its own context, and as these pre-suppositions change, so does the meaning of the theory (Peter and Olson 1983, 121). In sum, theories are limited relative to specific times and particular contexts (ibid). In the present study the researcher provides the interpretation of the phenomena being studied, the positions of suppliers in a project marketing network, and the interpretation is influenced by the researcher's worldview, previous experiences, training, beliefs about the world, knowledge of language and meanings, and skills (Peter 1992, 74; Grayson 1998, 27). Thereafter, the researcher's interpretation is evaluated by the scientific audience, which for the present study is aimed at industrial network and project business researchers.

The hierarchy of decisions by which to carry out the research process is clear:

ontological assumptions → epistemological assumptions → methodological selections. The methodological selections also depend on the research problem, as the purpose of the empirical part of the study is to answer the research questions (Ghauri, Gronhaug and Kristianlund 1995, 26). Hence, the methodological choices are based on the world view of the researcher and the selected perspective by which to learn about the phenomena and the purpose of the study. The selected methods have to be consistent with the criteria set, so as to assess the quality of the study.

4.2 The research mode

One of the preliminary considerations in a study is selection of the overall design of the research (i.e. quantitative mode, qualitative mode, or mixed modes of research), and the research problem is the key factor in this respect (Creswell 2003, 1; Ghauri, Gronhaug and Kristianlund 1995, 85). Due to the research problem, the findings of the pilot case, and the conclusions from the literature review, a qualitative method is an obvious selection. Network position alone is a complex concept, and a complex concept in a very complicated and dynamic context makes the research even more challenging. Existing knowledge of the phenomenon is scattered and there is no single theory capturing the features of the network position of suppliers in a project marketing network. Qualitative methods are preferred, when the focus is on understanding from the informant's point of view (Ghauri, Gronhaug and Kristianlund 1995, 84), and to interpret human behaviour and their world (Deshpande 1983, 106). As mentioned already in the introductory chapter, the whole research was sparked due to not understanding the perceptions of project buyers and consequently the influencing factors of suppliers' positions. Hence, in the present study a qualitative mode of research is selected.

4.3 Case study as methodological choice

The present study aims to understand an individual project network, specifically the perceptions of the buyer's actors in the network, within the real-life context of the project network (c.f. Woodside and Wilson 2003, 493; Yin 1994, 13).

Yin (1994, 4-9) relates the selection of the research strategy to the research questions. Research questions "how" and "why" do not require control over behavioural events and they focus on contemporary events. These research questions are more explanatory and therefore likely to be at the fore in case studies (Perry 2001). Ghauri, Gronhaug and Kristiansund

(1995, 88) give the researcher the freedom to choose any of the five suggested methods (historical review, group discussion, case study, survey and experiment) for an exploratory study based on "what" as a research question. In this research two out of the three research questions are "how" questions. The two first questions are how questions and the third one is a what question.

Case research is an appropriate methodology for research of industrial networks, since it takes into account the embedded character of network relationships and allows identification of the causal forces influencing the behaviour of the actors and the creation of networks with connected relationships (Easton 2000). The use of a sample size of one is often appropriate, but on the other hand using of multiple forms of data collection are needed to capture social, technical and economical aspects of industrial networks (Easton 1995, 480). Contemporary and unfamiliar phenomenon are suitable for case studies (Easton 1995, 475-476; Yin 1994, 23; Pihlanto 1994, 371) for both theory building and analysis (Bonoma 1985, 206-207; Perry 2001, 308; Johston, Leach and Liu 1999; Eisenhardt 1989, 532-535), and when complex and real situations are studied (Christensen and Hansen 1987). Processes are also a potential context for case studies (Halinen and Törnroos 2005, 1286; Woodside and Wilson 2003; Pettigrew 1997).

In this research, the case study was selected as a research strategy for several reasons. Firstly, it is justified as the research concerns an industrial network and especially relationships between the actors within it (Easton 2000; Perry 1998). Secondly, the knowledge of the phenomenon is limited and takes into account the project marketing context which is dynamically changing throughout the course of the project marketing process (Easton 1995). Thirdly, it is justified to argue that the research concerns a complex and real situation (Christensen and Hansen 1987) and unique and complex social systems (Hunt 1991; Pihlanto 1994). Uniqueness and complexity comprise two thirds of the cornerstones of the project marketing context (c.f. Mandjak and Veres 1998). Fourthly, project marketing is a process and the case study is recommended for processual studies (Pettigrew 1997, Halinen and Törnroos 2005). Fifthly, perceptions are regarded as the basis of the network position, which is the construct of specific interest in this research, and therefore lends itself to the selection of the case study strategy (c.f. Hunt 1991).

Process is related to time, and Pettigrew (1988, 5) has suggested that a process study to be regarded as good, should "explore content, context and process linkages through time". Van de Ven (1992) emphasises the importance of time by saying that a processual study

should be based on a real-time longitudinal study, and it should include “regularly-scheduled data collection” and also intermittent real-time data.

4.3.1 Role of the researcher

The researcher can take multiple approaches to the research concerning how close to the research problem he/she is. The level of participation can vary significantly between the extremes of desk research and field studies e.g. surveys or interviews to action research in which the researcher is operating inside the phenomenon (Gummesson 2000, 35). The researcher’s role in the present study is bound to the process and informants, but he can be argued be an informant observer. The researcher has been the active and responsible marketer in the project marketing processes of the empirical part, but the observations are only used in arranging empirical data from multiple sources into correct chronological order and in assessing the importance of the pieces of data in the light of the events and the marketing process (c.f. Eskola and Suoranta 2005, 99). Action research in marketing studies normally features a group trying to improve workgroup processes of action by planning, acting, observing and reflecting upon what has happened. The group's objective is to help to solve complex, practical problems about which little is known (Perry and Gummesson 2004, 311), but the present study cannot be considered action research.

Qualitative research and especially business-to-business marketing research is interpretative, and the researcher is typically involved in a sustained and intensive experience with the informants (Creswell 2003, 184-185; Gummesson 2003). The role of informant researcher can be differentiated according to the active or passive nature of the participation, and the range starts from a full informant, to an intermediate researcher-informant to full researcher (see e.g. Van Maanen 1979; Glesne and Peskin 1992, 39-40; Eskola and Suoranta 2005, 98-99). In the present study the researcher has been an active member of the project marketing network and influenced it heavily. This provides insight into the project marketing context and the process being studied, and also provides the necessary contacts for gaining access to actors and projects, in which the phenomenon being researched is clearly visible. After all, the personal experiences of the researcher in the project marketing context have been the motivating factor behind the research in the first place.

The perspective of the research is the customer’s view. The researcher cannot study his/her own activities, but they provide a unique possibility for mirroring the informants’ views and perspectives with the ones on the other side of the table. This dual position, firstly a

researcher and secondly a marketer, may also help interpreting the informants' views of the matters discussed in the interviews. The researcher has made it clear from the beginning that the managerial relationships, and even the social contacts due to managerial reasons, are only utilised to find and gain access to important cases from the perspective of the research. Experience and pre-knowledge can be regarded as means to enhance the reliability and quality of the research and assist particularly in the evaluation of the managerial implications (Gummesson 2000). The researcher's role and position also make it impossible to have any currently active project marketing in the research process. It is possible that the researcher's dual role has an influence on interactions with the informants, but the researcher has encouraged the informants to ignore the managerial role of the researcher and regard him only as a researcher (see e.g. Eskola and Suoranta 2005, 101). In some interviews perhaps the dual role has even enabled the statements given by the informants to be more concrete, as they have been able to refer to actual events experienced by both the researcher and themselves.

4.3.2 Ethical considerations

In marketing research ethical issues derive from a researcher's relations with the parties in the research process. Each of the parties is has duties and responsibilities. The researcher has tried to treat the respondents fairly by being truthful with them about the nature and purpose of the research. At the same time, the researcher has aimed at gathering accurate and reliable data, and also at interpreting the meaning of the data, as e.g. the data collected in interviews is not the result of the study, and the researcher has to interpret the data taking into account the applied research perspective and research questions (Gronow, Noro and Töttö 1996). Interpretation is the most challenging part of the research (Eskola and Suoranta 2005, 145), and interpretations can reside on two levels: firstly, the interpretations of the objects of research concerning everyday phenomenon and, secondly, the researcher as the subject of the research rising above the first level interpretations and understanding the object to make meaningful theoretical interpretations (Eskola and Suoranta 2005, 148). To the extent that the fulfilment of these responsibilities creates a conflict, a research ethics problem arises (Akaah 1990, 45). It is justified to argue that the issue of ethics in marketing research revolves around the balancing of a researcher's duties and responsibilities towards the research process (Hunt, Chonko and Wilcox 1984).

In the present study the researcher has followed the below outlined ethical codes (c.f. Tybout and Zaltman 1974):

1) The organisation has the right to choose whether it wants to participate in the research or not.

2) Individual informants within the organisation should have the freedom to decide whether they want to participate, but it is not possible to ensure. The request was sent to the director of the organisation. Based on the positive atmosphere during the interviews the researcher concluded that they did not object to the interviews. One observation by the researcher was that the informants did not know who was participating in the study.

3) The informants and the organisation represented by the informants have been provided with the right to protection of anonymity and all names etc have been removed from the report. It is, however, clear that the markets for these kinds of projects are limited and the number of actors low, and someone well aware of the market situation may recognise the case. The same kind of situation can be met within the case company among the informants, as they will most probably recognise the other informants.

4) All informants have received a transcription of their own interview, and have had the opportunity to comment and clarify the data, in case there have been some misunderstandings or misinterpretations. All informants will also receive a copy of the manuscript.

4.4 Quality of research

Quality of research is a key dimension in any research, but while conducting qualitative research theoretical sophistication and methodological rigor is especially needed. The researcher has to show the audience the procedures used, ensure the reliability of methods, and the reliability and validity of conclusions (Silverman 2005, 209).

One could choose from multiple criteria compositions presented to assure the quality of the research: paradigm oriented (see e.g. Guba and Lincoln 1994, 114), general (see e.g. Silverman 2005; Sykes 1991, 6; Bonoma 1985), or case study oriented (see e.g. Yin 1994; Denzin and Lincoln 2005, 5; Silverman 2005, 121; Eskola and Suoranta 2005, 69; Lukka and Kasanen 1995; Parkhe 1993; Hillebrand, Kok and Biemans 2001; Griggs 1987; Woodside and Wilson 2003). In the present study, like in several other case studies (see e.g. Salminen 1997; Salmi 1995; Madureira 2004), the methodological perspective was chosen to assess the quality of the research. After all, a single case, a project marketing process, is studied. In the following, the measures to assure the quality of the research are presented, and the measures follow the proposal by Yin (1994, 33).

Construct validity has been aimed at in the present study by using multiple sources of evidence. Construct validity is defined broadly as the degree to which a measure assesses the construct it is purported to assess (Peter 1981, 134). It is one of the most problematic dimensions of research quality in case studies, because it is a common belief that case study researchers fail to develop a sufficiently operational set of measures and that subjective judgements are often used to collect data (Yin 1994, 34). Triangulation aims at using multiple sources of evidence (Yin 1994, 91), and there are different forms of triangulation (Yin 1994, 92; Denzin and Lincoln 2005, 5; Silverman 2005, 121; Eskola and Suoranta 2005, 69). Data triangulation has been utilised via different data sources, and using it to build a coherent justification or themes. The main source of data is the interviews of the informant, but the researcher has also experienced and witnessed the marketing processes under research. The researcher's personal archives are not used as a primary source of data but they enable creation of a detailed and trustworthy case description. There is a lot of written documentation related to the project, and that documentation can be utilised both to anchor the informants' interviews to specific moments in the process and also to verify the interviews. Correspondence between the marketer's and customer's organisations is used for that purpose, together with official document exchanges between the parties comprising enquiry materials, quotations and formal clarifications. The supplier's network had lots of interactions with the customer's network and there was a lot of unofficial communication. This unofficial communication was recorded in diaries by the focal company's UK agent. Table 17 gives a summary of the data sources and their purpose and usage. Methodological triangulation has also been used in the analysis of the data. In the pilot case study qualitative contents analysis was used and in the actual case study grounded theory based upon open and axial coding were used.

Table 17. Data sources and their purpose and usage.

Data source	**Purpose and usage**
Interview transcriptions	Primary source of data, interpretation on informants' cognition on relevant factors concerning research problem
Correspondence between focal company, case company and other actors in the project marketing network	Means for defining exact time and chronology of events, means for comparing interpretations of interview data, means for providing indirect evidence on informants' cognition, means for providing additional depth in the analysis
Project documentation by case company and focal company	Means for providing detailed data for case description and comparison of e.g. criteria and requirements by the case company with interpretation from other data sources
Diaries of focal company's agent in the UK	Means for verifying time and chronology of events, means for gaining access to unofficial communication between the case company and actors of the focal company

Researcher's observations, experiences, and notes	Means to enable accurate case description, means for making justification on the value of pieces of data, means for providing insight into focal company's actions and objectives during the process

In addition to data and methodological triangulation the informants of both the pilot case study and the actual case study have reviewed their own interview transcripts and given comments on the exactness of the transcription process. In case there were any comments or misinterpretations, the transcripts were modified accordingly before the analysis process.

According to Yin (1994, 33) it is not necessary to test for Internal validity in explorative case studies, with it being important only in explanatory or causal studies.

External validity is the establishing of the domain to which a study's findings can be generalised beyond the immediate case study (Yin 1994, 35). As was earlier mentioned, Hillebrand, Kok and Biemans (2001, 652) argue that when using case studies for confirmatory purposes, external validity becomes problematic. However, the present study is explorative and the purpose is to build theory, instead of confirming existing theory. Hence, in a study that wishes to build theory, external validity is not a primary objective (Salminen 1997, 230). Lukka and Kasanen (1993, 358) have doubted the usefulness of aiming for maximum generalisability, as generalising in business studies involves such a disorganised web of comments. Case studies can be seen as a step leading towards generalisation, or an early step for building theories (Stakes 1994, 238). In the present study the research process has also provided general elements. The pilot study was conducted in two industries and informants represented four different companies from two different countries, and the actual case study provided the study with a third country and a very large organisation as informant.. Lukka and Kasanen (1993, 371) argue for contextual generalisation, which involves combining, by versatile and careful argumentation, existing theoretical knowledge, earlier results of studies, own empirical observations and common sense thinking related to the real economy in such a way that creates a credible and competent argumentation. In the present study the researcher has aimed at contextual generalisation by combining existing knowledge about the phenomenon, results from the pilot case study, and results from the empirical part.

Reliability refers to the ability to replicate previous research by using exactly the same methods that were used in the original research, and arriving at the same findings and conclusions. Therefore, for example, if a current researcher copied another researcher's previous study by following the exact procedures described by that researcher, the current researcher should arrive at the same findings and conclusions (Yin 1994, 36). All data in

electronic format, which represents over 95% of all data in the actual case, has been stored in a database of the Nvivo qualitative analysis programme for easy re-entry. All interviews, both in the pilot case study and in the actual case study were recorded and transcribed. In the pilot case study, AtlasTi software was used in the analysis, but in the actual case Nvivo7 was used instead, as the latter provided a much more efficient way of storing data in a single database. All codes, comments, and memos relating to the analysis and drawing of the final conclusions are also stored in the same database. The usage of a database and dedicated software provides a way of easily verifying all the steps of the analysis and data for the researcher and other researchers who would like to replicate the study. Table 18 provides a summary of the actions taken to assure the quality of the research.

Table 18. Summary of actions taken to assure the quality of the research.

Tests of quality / Step in study	Construct validity	Internal validity	External validity	Reliability
Pilot case study	• informant review of transcripts	• not tested (exploratory case study)	• multiple companies & industries	• interviews recorded
Actual case study	• informant review of transcripts • multiple data sources	• not tested (exploratory case study)	• not emphasised	• interviews recorded • single database for all data • all analysis data in database

4.5 Criteria for case selection

Case studies may be used in three types of studies: intrinsic case studies, instrumental case studies and collective case studies (Stakes 1994, 237). Intrinsic case studies are undertaken to understand a particular case better. In an instrumental case study a particular case is examined so as to provide insight into an issue or to refine a theory, with the case used being only of secondary interest, with it playing a supportive role that helps facilitate understanding of something else. In collective case studies less interest is placed on one particular case, as researchers may study a number of cases jointly in order to inquire into a phenomenon, population, or general condition (ibid). The role of the case in the present study is instrumental, as the case provides the means by which to provide insights into suppliers' positions in a project marketing network. Hence, we are studying a contemporary

phenomenon within its real life context, where the boundaries between phenomenon and context are not clearly evident (Yin 1994, 13).

4.5.1 Number of cases

One of the most consistently discussed subjects in literature concerning case studies, in addition to generalisation about findings, is related to the number of cases needed in research. A case study is a description of a management situation (Bonoma 1985, 203), and consequently one may ask the following question: How many management situations should be analysed?

Increasing the number of cases does not automatically improve the quality of a case study, as increasing the breadth of the study decreases its depth, which is necessary for discovering causal powers and mechanisms (Easton 2000, 214). There are, however, researchers that argue for multiple cases, as increasing the number of cases adds to the robustness of the study (see e.g. Eisenhardt 1989, 545; Yin 1994, 45; Perry 2001, 312; Perry, Riege and Brown 1999, 19). A single case is proposed, when it represents the critical case in testing a well-formulated theory, when the case represents an extreme or unique case, when it is revelatory (Yin, 1994, 38-53), or when a small sample study can be used to provide a rich description of the phenomenon in inductively derived theory (Wilson 1987, 118). Many famous case studies in the social sciences and organisations have used a single case approach, and those researchers who focus only on the number of cases they use in a study may loose the essence of what case study research is all about, as carefully performed research with a single case study may allow a researcher to see new theoretical relationships and to question old ones (Dyer and Wilkins 1991).

The selection itself can be based on purposive sampling of cases, which allows a case to be chosen based on it being able to illustrate some feature or process in which a researcher is interested (Silverman 2005), and social processes have a logic and a coherence that random sampling can reduce to uninterpretable sawdust (Miles and Huberman 1994, 27). Silverman (2005, 130-131) makes a difference between purposive sampling and theoretical sampling. Theoretical sampling includes features such as, for example: choosing cases in terms of the relevant theory, choosing deviant cases, and being dynamic by being prepared to change the size of the sample during the research process once the field work has begun (Miles and Huberman 1994, 27).

In cases when the multiple case approach is selected, there is no clear advice given on

the optimum amount of cases to use. However, what seems to be common in the relevant literature is the stated maximum number of cases to use. Miles and Huberman (1994, 30) limit the maximum amount to 15 cases, as using more than this brings the risk of the study becoming unwieldy. Perry, Riege and Brown (1999, 14) limit the number of cases to 14, and Eisenhardt (1989, 545) to 10. Miles and Huberman (ibid) and Eisenhardt (1989) advice to look for confidence in the analytic generalisation or saturation in the data collection, and at that point the preparedness to change the size of the sample may become valid (Silverman 2005, 131; Miles and Huberman 1994, 27).

The present study aims at building theory (or refining theory) and the theory has no meaning outside its own context (Peter and Olson 1983, 121). Studying a small qualitative sample can be used to provide a rich description of the phenomenon and is sensitive to the context within which the management's acts occur, which allows the generating of inductively derived theory (Bonoma 1985, 204; Wilson 1987, 118).

4.5.2 Unit of analysis

Yin (1994, 23) names the defining of the unit of analysis the fundamental problem in case studies. The definition is vital as it provides a means to understanding how the study relates to the broader body of knowledge, or actually constitutes a case, and is derived from the research problem (Perry 2001, 306). Yin (1994, 41-42) names two different types of case studies: holistic versus embedded studies. Embedded case studies involve more than one unit of analysis, and the attention is given to a sub-unit or sub-units. A holistic case study, on the other hand, takes a more general approach to the research problem.

The main case in this research is the project marketing process being studied. The unit of analysis is the stages of the marketing process according to the dimension-stage research framework presented in Figure 10.

4.5.3 Criteria for case selection

Yin (1994, 31) instructs that cases should be selected in the same way a laboratory investigator selects the topic of a new experiment. The phenomenon being studied should be found to be as clearly evident as possible in the laboratory (see e.g. Silverman 2004, 215-219). The aspects described below in the following paragraphs were taken into account while selecting the case companies.

The phenomenon under study is the network position of suppliers in project marketing networks. The laboratory should include a network of actors, and preferably multiple

suppliers, i.e. competitors, which are positioned in a hierarchy by the customers in their minds. Projects, as stated earlier in the introduction, are regarded as temporary networks (Dubois and Gadde 2000) comprising actors, activities in which tasks and skills are coordinated and established both within individual firms and between them in various inter-firm networks (Whitney 2006). Hence, the *first criterion* for case selection is that a temporary project network exists.

A project concerns capital investments, not commodities, and data collection in the pilot case should concern such processes. The *second criterion* is that capital investments must be involved.

The case capital investment projects should be major for the organisations purchasing them, as in such cases it can be assumed that the decision making is performed as carefully as possible and that many factors are taken into account. Major capital investment in this case means a significant investment in the company or business unit, and significance can either be due to the size of the project or its importance to the buyer's business. The significance of the project also should prohibit the selecting of suppliers purely according to personal motives. The *third criterion* is that the project is significant for the buyers.

The industry from which the case companies come from is not necessarily a dominant criterion in case selection, but has to represent continuous processes, like found e.g. in the paper and steel industries. Continuous processes provide a demanding environment for any supplier, as no interruptions are allowed in the manufacturing process. Hence, it is probable that customers use higher standards in these industries. The *fourth criterion* is the industry.

The researcher has worked for the past number of years in the steel and paper industries, and his personal contacts provide easier access to them. The *fifth criterion* is the access to companies.

Case construction implicates multiple data sources, but case study is distinguished from other qualitative methods in that it involves numerous data sources (Bonoma 1985, 203), and data collection methods (Eisenhardt 1989, 534). The *sixth criterion* is the existence of multiple data sources and data collection methods.

The interest lies in the development of positions during a project marketing process, and accordingly the duration and the nature of the project marketing process must provide with possibilities for the phenomenon being studied to be present. Hence, the *seventh criterion* is that the project marketing process follows the process model chosen as the basis.

Also, as the author had been involved in the projects under focus, he should be capable

of roughly estimating whether the data was usable in the first place. The *eighth criterion* is the personal involvement in the projects.

Personal involvement may also create problems if ethical matters are not taken properly into account when a researcher's role is twofold (see e.g. Creswell 2003, 184-185). On the whole, the advantages due to the personal involvement of the researcher when compared with the risks due to the researcher's dual role, were concluded to be superior, and Ghauri, Gronhaug and Kristianlund (1995, 65) emphasise the interviewer's position in in-depth interviews, and claim that "*the interviewer should have a complete understanding of the research problem, its purpose and what information we are looking for*".

It is assumable that when time elapses between the process being studied and data collection, part of the data may become biased (Peter 1992, 74). Hence, the *ninth criterion* is the time elapsed between the project marketing process until data collection.

The *tenth criterion* in the case selection is the novelty of the solution to the problem, the project. In a project including novelty features it can be assumed that the phenomenon being studied, the supplier's position, is a critical factor. Due to the uncertainties, the buyer is expected to focus carefully on the assessment of the supplier, and respectively it should provide a rich detailed case when compared with a rebuy project.

4.5.4 Selection of the case

Based on the criterion described in the previous subchapter, a case was selected. Table 19 shows the selected case's level of fulfilment of the criteria. The case is presented in detail in the case description and analysis in Chapter 5. The purpose of this brief presentation of the criteria fulfilment is to introduce readers to the selection logic but not the case itself.

Table 19. Fulfilment of the criteria with the selected case.

Criterion	Fulfilment of criterion	Remarks
Temporary project network exists	Fully	
Capital investment involved	Fully	
Project is significant for buyer	Fully	All production depending on project
Industry involved	Fully	Steel industry
Access to company	Fully	Key informants involved
Multiple data sources and data collection methods	To an adequate level	No access to buyer's internal archives. Researcher's dual role.
Project marketing process exists	To an adequate level	Some of the steps in the selected process model were embedded with other steps and were not separable.
Personal involvement of researcher	Fully	Responsible marketer of supplier
Time elapsed between process and	Fully	Important in interview, which were

data collection		conducted 10 months from the end of the process.
Novelty of project	Fully	The first of its kind in the world.

In the selected case, the automated distribution centre project, a rather complex and wide-ranging project network existed. The project network was actually an embedded one with several sub-networks including sub-networks both on the suppliers' and buyer's side. The project was a capital project and it aimed at increasing the competitiveness of the buyer in the steel markets. The project was a significant one for the buyer as it was planned that it would handle all customer deliveries and it would influence directly on the buyer's customer service level and consequently on customer satisfaction.

The project concerned the steel industry in which the manufacturing processes typically are continuous, and very demanding for suppliers. Access to the case was in the end rather easy. The researcher for a long time thought about choosing the selected case as a potential case, but during earlier stages of the research process it was not clear if the case could be utilised. All the key informants were also in important positions in the decision making process. In the selected case multiple sources of data were available, as in addition to interviews there was a lot of communication between the parties, a large amount of project documentation, and the private notes of a participating actor in the network. The researcher was also involved in the process and knew in detail what data could be useful as data sources. One draw back was that the buyer's internal archives could not be accessed, except for some documents. This was understandable due to the researcher's dual role in the eyes of the buyer.

Most of the steps of the chosen project marketing process could be distinguished in the actual project marketing process, but some were so heavily embedded that it was not possible to separate them. From the perspective of the present study this limitation was not significant. The duration of the marketing process was approximately 18 months from first contacts up to the making of the decision about the supplier of the project.

Interviews were conducted in November 2006, which was roughly 8 months after the decision made with regards the supplier. It was clearly observable that the informants were able to remember the process very precisely and in this respect the data collected could be considered reliable, and the selected case met the criteria.

In sum, the selected case fulfilled the criteria clearly and there was no reason to expect that the reported shortcomings would influence the data collection and analysis too heavily.

4.6 Methods of data collection

Data for analysis was collected from multiple sources as is presented earlier in Table 21. Data sources included interviews, correspondence between the focal company and the case company, project documentation, diaries by the agent of the focal company, and the researcher's observations, experiences, and notes.

Personal interviews were the primary source of data. Correspondence between the different parties by email was the second source of data. It turned out to be also a very valuable and interesting source of evidence, as it was able to provide a chronology of events, a possibility for comparing interpretations of primary data, and in sum the emails brought additional depth to the study. Project documentation was the third data source, and it contained a lot of official documents exchanged between the parties. In this kind of project and process there is a lot of internal documentation of the focal company and the supplier network, which can be utilised as a data source. The focal company's ERP system (enterprise resource planning) included detailed data on the project planning. There were also some of the case company's internal documents, which were disclosed to the researcher on request, but on the whole the internal data by the project group was reviewed in the interviews. The fourth source of evidence was provided by the focal company's UK representative, who had participated in all of the meetings between the parties, and had also kept contact with the case company's project group. The frequency of communication between the representative and the case company was periodically high. That data was in the format of personal diaries. The fifth source of data was the researcher's personal involvement in the project marketing process. Despite the multiple sources of data the exact chronology would have been rather difficult to report, if the researcher had not been involved in the process. The researcher's dual role in this respect was more than helpful, and it also helped to collect the data, as the researcher knew the data sources, not only the individuals but also the sequences of events, which helped greatly in reporting the study.

Longitudinal data collection should be able to capture the process nature of project marketing better than cross-sectional snapshots. Real time data collection was not possible, and instead a retrospective procedure was applied using a longitudinal approach.

4.7 Methods of data analysis

Miles and Huberman (1994, 10-12) outline a qualitative analysis to three concurrent flows of activity: data reduction, data display, and conclusion drawing/verification. Data

reduction is the process in which the researcher focuses, simplifies, abstracts, and transforms the data collected from data sources, such as interviews, field notes, communication, and other sources. Data display is *"an organized, compressed assembly of information that permits conclusion drawing and action*" (Miles and Huberman 1994, 10). The third flow in qualitative analysis is conclusion drawing and verification, in which the researcher decides what things mean, shows regularities, patterns, explanations, causal flows, and propositions.

There were two objectives for the data analysis: firstly to provide an analytical and reliable description of the selected empirical case in such a detailed manner that a reader can judge the researcher's findings and conclusion based on the description given (Halinen 1997, 83), and secondly, together with the pilot case study and literature review answer the research questions of the present study. While creating analytical and reliable description of the case, it had to take into account that the study concerns a process, a distinctive feature of which is time dependence, and the case description should give readers a precise and chronological interpretation of events and developments in the selected project marketing case (Halinen 1997, 83; Miles and Huberman 1994, 110). When necessary, so as to deepen the description for readers or for analytical purposes, graphs, tables and charts were prepared from the empirical data.

Six decision makers in the project were interviewed (see Appendix 7). Interviews lasting between 45 minutes to two hours were recorded, transcribed and saved in a database of the Nvivo7 programme, which was developed for computer-assisted analysis of qualitative data (CAQDAS). Also the emails, in total about 300, were saved in the same database together with project documentation by the buyer and the case company (approximately 350-400 pages). All other electronic data documents, such as technical drawings or similar, were handled separately as the software cannot handle file formats used in designs. Whenever drawings were accessed, a computer aided design (CAD) programme was used for that purpose. Diaries of the case company's UK agent were handwritten and they were studied without any software tools. Transcriptions, emails and project documents were coded in the NVivo7 programme. The analysis (coding) procedures are discussed next.

One of the lessons learned while conducting the pilot case study was that data analysis based on content analysis was able to capture some general features of the phenomenon being studied, but that was as deep as it could go. In order to interpret the project marketing process of the case, required another kind of and deeper analysis. There were two main elements in the analysis process: coding and continuous comparison of codes and data.

The project marketing process and data is divided into stages according to the framework as precisely as possible. If stages are embedded or happening concurrently and the separating of data is not possible, such stages are analysed and reported together as combination stages. Then the data for each stage was analysed.

The first coding procedure followed open coding principles (Straus and Gorbin 1990, 61-74). Open coding includes two analytical procedures: the making of comparisons and the asking of questions (ibid, 62). Conceptualising the data becomes the first step in the analysis (ibid, 63). Conceptualisation means taking apart an observation, a sentence, a paragraph, and giving each discrete incident, idea, or event a name that stands for or represents a phenomenon. By asking questions about each one, and comparing incident with incident, similar phenomena are given the same names (ibid). Hence, codes were conceptually created both from the empirical data and from experiential data, particularly the information derived from the reviewed literature, and also the concepts of the pilot case study, if applicable. There were two types of codes: sociologically-constructed codes, which refer to codes derived from experiential data, and en vivo codes, which are derived from the empirical data (c.f. Strauss 1987, 34). Another part of the open coding process was the developing of categories, during which coded data was organised and categorised into emerging core categories and sub-categories, and subsequently relationships between them emerged (Strauss and Gorbin 1990, 69-70). One essential part of categorisation in the present study was to relate categories and sub-categories to the phases of the project marketing process. As a result of the open coding process categories representing properties can be dimensionalised, and the dimensions represent properties of a property along a continuum (ibid, 69).

After the open coding procedure axial coding was conducted (Strauss and Corbin 1990, 96-115). Axial coding makes connections between a category and its sub-category, and the focus is on specifying a category in terms of conditions that give rise to the context in which it is embedded, the action/interactional strategies by which it is handled and managed, and the consequences of those strategies (ibid, 99). Changes were analysed in such a way that first any event somehow related to any kind of changes was open coded. Then the passages related to these codes were extracted and re-coded with open and axial coding to reveal the source of change and influenced dimension or components of a dimension. In order to provide readers with an in-depth look into the analysis, many excerpts from the data are presented. It gives the reader the opportunity to assess if he/she can come to similar interpretations about the data as those of the researcher.

The following example of a piece of data (an email from the case company) describes the coding procedure.

Many thanks for your prompt response [code: response time] - scheme appears very interesting [code: solution] especially to the Profiles people - just a few questions so we can clarify costs [code: feasibility]. [Technical questions, and then] Is there a similar system within the UK? [codes: experience, references]"

The coding procedure was repeated several times comprising coding according to experiental codes derived from the literature review and the pilot case study. Also codes from the empirical data were derived. The result of the open coding procedure session was the list of codes, like the short example from data above shows. Table 20 presents the coding process.

Table 20. Example of coding.

Open coding list	**Core category = component**	**Relevant dimension**
response time	performance in interaction	Personal supplier dimension
solution	solution to problem	Functional dimension
feasibility	feasibility	Functional dimension
experience	experience in industry	Experience dimension
references	references	Experience dimension

The result, the list of codes, was recoded and categorised into core categories, which represent the underlying components of the dimensions of the position construct. Components that emerged were analysed and connections between components and relevant dimensions were formed. The dimensions were first looked at with the priori model, but if there were components, which result in an emerging new dimension, it was created. Hence, a structure comprising dimensions and underlying components was achieved. Changes in the position construct between changes were a result of comparing the governing dimensions and the underlying components of the position construct. With the aim of detecting critical events, any event somehow related to any kind of changes was open coded. Then the passages related to these codes were extracted and recoded with open and axial coding to reveal the source of change and influenced dimension or the underlying components of the dimension.

In this chapter we have touched upon the methods applied to analyse the empirical data collected in the case. The next chapter aims at meeting the two objectives set for the data analysis: firstly to provide an analytical and reliable description of the selected empirical case

in such a detailed manner that a reader can judge the researcher's findings and conclusion based on the description (Halinen 1997, 83), and secondly together with the pilot case study and literature review answer the research questions of the this study.

5 CASE DESCRIPTION AND ANALYSIS OF DATA

5.1 Introduction to project network

The actors and the relationships between them analysed in the project network are shown in Figure 10.

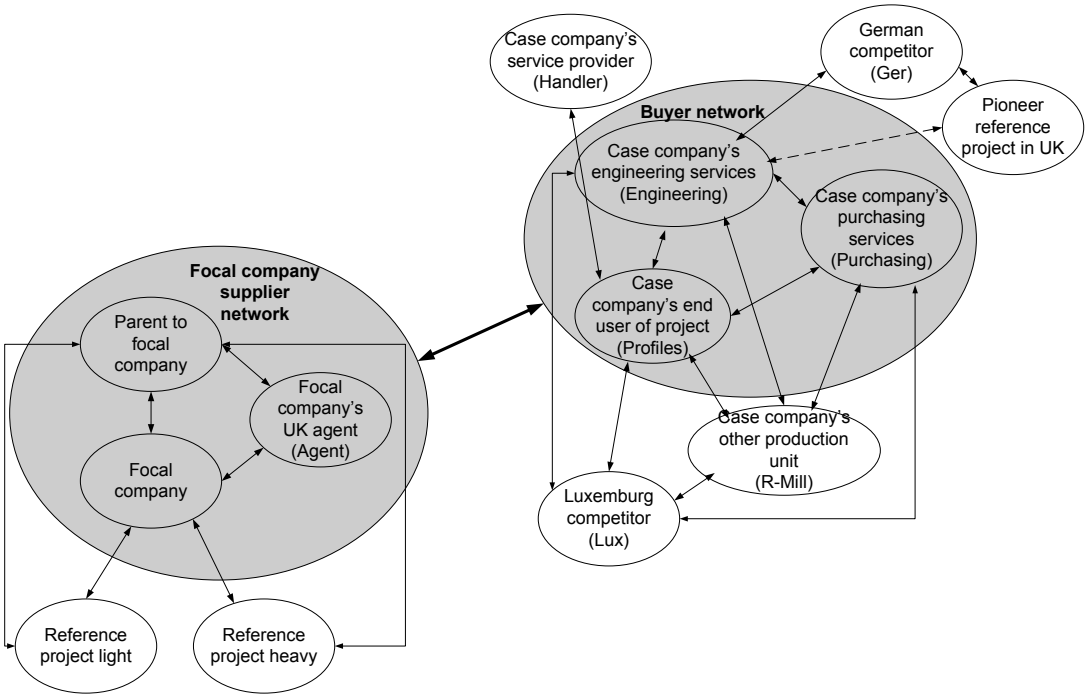

Figure 10. Simplified project network of the case.

The project network of the case study included two sub-networks and a number of actors acting in the network. In addition to the "core" project network, there are relationships between the actors of the project network and external actors, which had an influence on how the relationships developed in the actual project network. Table 21 below sums up the structure of the project network in the case.

Table 21. Structure of the project network in the case.

Actor	Description	Remarks
Supplier network of focal company		
Focal company	Supplier of automated material handling systems mainly on a turnkey basis	No earlier relationship to case company, researcher responsible for marketing the case
Parent company of the focal company	Supplier of conveying and packaging systems, which can be sold separately, or as a part of the focal company's scope	Business relationship with case company's other production unit (R-mill), and relationship with case company's engineering and purchasing
Focal company's and its parent's agent in the UK	Acting as a project finder for both companies	Relationship with case company via focal company's parent and its project
Buyer network		
Case company's engineering services (Engineering)	Designs projects and evaluates technical solutions for production units of the case company	Comprises experts in various fields of steel making and industrial operations
Case company's end user of the project (Profiles)	Production unit manufactures medium size steel profiles for construction and engineering purposes	Pure production unit without project management or technical personnel except those tightly related to core process
Case company's purchasing group (Purchasing)	Responsible for commercial activities related to capital investments in production units	Contracts and financial control of projects
Case company's other production unit (R-mill)	Manufactures wire rods for engineering and construction purposes	Uses an automated warehousing system of the Luxemburgian competitor of the focal company and a packaging system of the focal company's parent
Case company's service provider (Handler)	Executes handling and storage activities for the case company	Future operator of the project
Other actors		
Luxemburgian competitor (Lux)	Direct competitor of the focal company, which has a similar turnkey business model	Supplier of a project to R-mill
German competitor (Ger)	Direct competitor of the focal company, which has a similar turnkey business model	Well known supplier in the project industry for the steel industry. Supplied the first automated warehouse to the steel industry in the UK in the early 90s (=UK reference project)
UK reference project	First fully automated warehousing system in the steel industry	Known in the industry and used as a starting point when getting familiar with automated handling
Reference project light	Project supplied by focal company and its parent company in Sweden	Same kind of approach (solution selected) as used by the project but much lighter
Reference project heavy	Project supplied by focal company and its parent company in Finland	Several heavy applications covering most handling of materials in the mill
Suppliers of other equipment	Suppliers considered to enhance the scope of the project to turnkey level	

The following paragraphs introduce these from the perspective of the case's significant actors and the relationships between them.

5.1.1 The focal company and its supplier network

The focal company is the researcher's employee and the actor, whose relationship to the customer has been researched. The company has approximately 35 employees and has been operating in the automated warehousing and distribution system business since the late 70s. The turnover of the company is currently on the level of 10-15 M€, and during the last 10 years most of the projects have been for either the paper or steel industry. The company is a wholly private firm, and at the moment owned by another Finnish company (named the parent company) and the management. The focal company does not manufacture mechanical structures, instead all such activities are outsourced. The company has marketing, design, project management, programming, start-up and part of the after sales activities in-house. The focal company's reference list includes some 130 systems worldwide but only 5-6 of them are in the steel industry. However, these 5-6 companies are all rather big and well-known in the industry. The supplier network consisted of the focal company, a supplier of automated warehousing and distribution systems, and the parent company of the focal company and also the major shareholder. The focal company acts as a systems integrator, which develops solutions for customers' specific problems. In most projects the business philosophy is based on turnkey deliveries (see e.g. Cova, Ghauri and Salle 2002). The parent company is a supplier of conveyor and packaging systems and the company also has manufacturing resources. The parent company has about 150 employees. Together the companies have an annual turnover of about 40 M€. The parent company, like the focal company, is primarily focused on the steel and paper industries. Up until this particular case, the focal company did not have an earlier relationship with the case company, but the parent company has delivered one fully automated packaging system to the case company in the UK and another to Holland.

Neither the focal company nor the parent company had facilities or activities established in the UK. They had a common agent in the market. The agent was based some 60 miles from the case company. The agent is a Finn, but he had lived in the UK since the 80's and had worked for several Finnish companies operating in the materials handling and packaging business.

5.1.2 Luxemburgian competitor (Lux)

A public company based in Luxemburg is another supplier of automated warehousing

systems, and the company is a competitor of the focal company. Lux operates in the metals, paper, textile and aircraft industries, and its turnover between 2001-2005 was about 16-24.5 M€. The company has in-house manufacturing resources, and like the focal company, it tends to work on a turnkey basis. The company is specialised in customised solutions in materials handling and storage. The focal company and Lux had seldom come into contact with each other earlier, with previous competition for Lux being on its home home market in Luxemburg. At that time, Lux was successful in winning the project.

In 2004 Lux delivered an automated warehousing system to another production unit of the case company (R-mill). As R-Mill is part of the same business unit as the end user of the project (Profiles), the delivery is well known to Profiles, Engineering and Purchasing, with Engineering and Purchasing having been involved in the project.

5.1.3 German competitor (Ger)

The third supplier of automated warehousing systems is Ger based in Germany. It has a long history in the steel industry, with the company being founded in 1871. The company has 36 steel and metal industry references from all over the world in storing coils, sheet packages, slabs and long products. Ger is specialised in storage technology in the heavy-load sector. Alongside the actual storage system they also supply the associated transport and control systems, and in addition they compete with the parent company in steel packaging systems. At the moment there is no financial information available on the company.

Ger has some very famous references in the steel industry. One of them is the world's largest high-rack storage system. Ger has also delivered a storage system to UK reference project, which has been visited by actors in the case. Ger has also quoted heavy reference projects, all of which have been delivered by the focal company.

5.1.4 Case company and buyer network

The case company is a significant steel mill producing different types of products, and the end user of the project (Profiles) manufactures sections for building and engineering purposes. The entire mill has an annual production of 4,500,000 tons, the number of employees is 3,500 and the turnover is 2,100 M€. Profiles produced 295,000 t/a of structural sections and it was aiming at getting part of the imported sections business worth 400,000 t/a by improving its customer service capability with the project. The activity chain of Profiles starts with the receiving of raw materials from other production units of the case company. The main activity of Profiles is converting the raw materials by rolling (see Figure 16) into

formats, which can be used by its own customers. Profiles produce 295,000 tons of sections, such as U, I, and L for example (see Figure 11). The sections are bundled and stored while waiting for customer deliveries. Profiles had outsourced the storing and shipping activities to Handler, which is a service provider operating Profile's storage and distribution functions in a number of manual warehouses in the vicinity of the case company's mill.

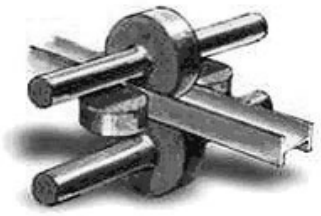

Figure 11. Rolling of sections at Profiles (source http://www.bluescopesteel.com.)

Engineering

Engineering is a large integrated engineering service organisation. It provides a portfolio of solutions through workshop facilities, project management, design, consultancy and engineering services to customers in a wide range of industries including the food, infrastructure, nuclear, and defence industries. Production units of the case company use Engineering as technical support during projects, such as the one in the case.

Another production unit of the case company (R-Mill)

R-Mill produces wire rod especially for the automotive industry. R-Mill was related the to Profiles project, as Lux had delivered an automated storage system to R-Mill, and had a relationship with Engineering and Purchasing. R-Mill is part of the same group as Profiles and they share top management.

Purchasing

The case company has a centralised purchasing organisation located at the management offices. Purchasing is responsible for contracts and financial control of all capital investments in the production units of the case company.

Profiles, Engineering, Purchasing, Handler, and R-Mill comprise the buyer network of the project.

5.1.5 UK reference project, heavy reference project, light reference project

The UK reference project mill in the UK belongs to the same group as the heavy reference project. The UK reference manufactures stainless steel products like the heavy reference unit in Finland. The light reference project in Sweden is a manufacturer of truck components, and serves for example truck makers. Sites in Finland and Sweden were used as reference projects by the focal company. The UK reference project is very well known in the steel industry, as it was the first major automation project in warehousing and distribution of steel products. The UK project was supplied by Ger.

In addition to the actors presented already, there were some other actors, such as steel structure suppliers, but they are presented in the case description. The following Figure 12 gives an idea concerning the technical solution proposed by the focal company.

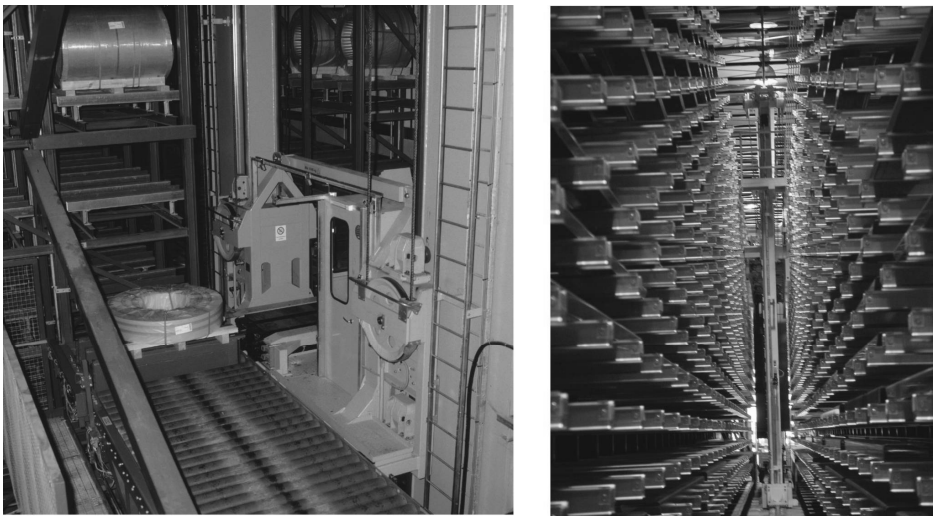

Figure 12. Systems supplied by the focal company to the heavy reference project and light reference project.

Now that the main organisational actors of the case have been presented, we can move forward to the case description and analysis. Individual actors are presented in the description next, and thereafter the scene is set.

5.1.6 Informants of the case

The informants interviewed were involved in the process in various ways, some of them for the entire duration of the active part or even prior to that, and some were involved only in the latter stages of the process. All informants can be regarded as members of the decision making unit of the project, and their weight in the decision making process varied. The interviews lasted from 40 to 90 minutes. The informants are introduced in Table 22.

Table 22. Informants of the case study.

Name of informant	Position in case company	Position in project	Involved in stages[15]
Dir	Responsible for strategy of sections and plates	Responsible for Profiles and developments	1-11
Manu	Manufacturing specialist	Responsible for Profiles development and representing users during the process	1-11
Purch	Purchasing account manager	Contract and financial control	6-11
Proj	Development engineer in named production units in the case company	Project manager	6-11
Ele	Electrics specialist at Engineering	Electrics and control specialist in the project	6-11
Ini	Design engineer	Project manager, project engineer	1-11

Dir was nominated to be the manager of strategy for sections and plates in October 2006, until which he was the works manager responsible for the production units of sections and plates. Profiles were part of his responsibility area. For ten years, until becoming the works manager, he was the works manager of the sections mill, which included units at two different locations. Until he attained the position of sections manager, he had several positions in the company in iron and steel making, with his career starting in 1976. Dir was involved from the very beginning of the project and as he was responsible for the activities, he followed the process closely.

Manu has had a long career in steel manufacturing having worked for 28 years in the business. For the last two to three years he has been involved in the development of the MSM, and in the project he represented the future users, and acted as specialist from the manufacturing perspective. During recent years he has worked closely with Dir. Manu and

15 1=Identification of requirements, 2=Feasibility study, 3=Research/selection of suppliers for advice, 4=Definition of specifications and compilation of terms and conditions, %=Setting up bidding list/invitation to tender, 6=Information exchange, 7=Reception and analysis of suppliers' proposals and setting up short list, 8=Negotiation, 9=Final evaluation, 10=Selection of supplier, 11= Contract

has been involved in the Profiles development project for the entire duration of the process, which was originally initiated in 2000 while supply chains were studied in the company.

Purch is the supplies account manager for the case company, and he has responsibility for all the capital and major projects for named production units in the case company. The units under his responsibility are located in three locations and the case company is at one of the locations. He has been in the company for 20 years, and of those in purchasing for 8 years. Purch's involvement in the project has a commercial perspective, as he deals with the enquiry process, tender receipts, negotiations and contract placement.

Proj was the project manager of the project and he took responsibility in September 2005. His official position is area development engineer at named production units in the case company.

Ele joined the project team in July or August 2004 as an electrics specialist. He has held various positions since joining it after leaving the Royal Air Force. El has been a foreman in the maintenance activities for several years, and about 20 years ago he moved from maintenance to projects, and he is now in the Engineering organisation.

Ini was the project manager of the project until May 2005, and since then has been a project engineer. His position at Engineering is senior design engineer, and in the very early stages of the process he was working as an estimate and proposals engineer for Profiles.

5.2 Empirical analysis of a project marketing process

The case and its analysis are presented in this subchapter. The analysis is based on the framework presented in Subchapter 3.7 (Figure 12) and methods presented in Subchapter 4.7.

5.2.1 Identification of requirements

5.2.1.1 Description of the stage

The project was not initiated overnight, and in fact often changed its format and objective during its course. Like any other industry or business, steel manufacturers are looking for ways to make savings and make their operation lean in order to be more competitive. Figure 13 illustrates the timeline of the stage "*Identification of requirements*", which started in August 2004 and continued until the end of September 2004.

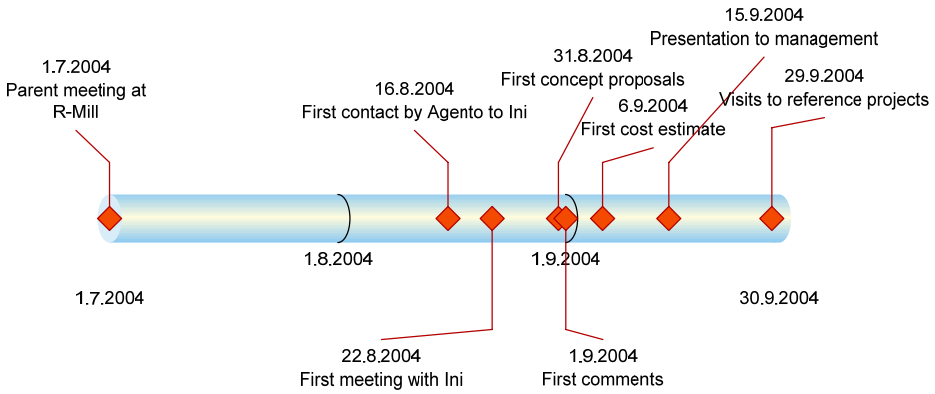

Figure 13. A timeline of the major events of the stage "Identification of Requirements".

The case company had earlier studied possibilities for making its chain of activities more efficient, and at this point the company was also aiming to increase the volume of its business by enhancing handling, storing and distribution. The project had very little to do with automation at the very beginning. Profiles had already existed for a number of years before the actual project studied its activity chain. The study resurfaced in 2004, when the case company concluded that they had to open the files and try to find ways of making their process more effective. Dir mentioned that one of the objectives was to reduce labour costs.

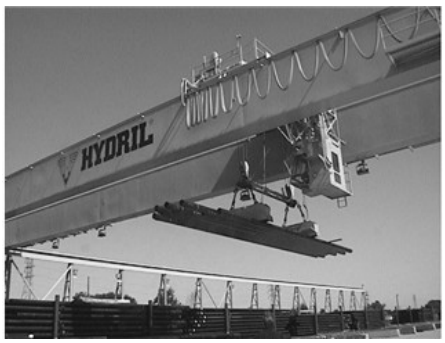

Figure 14. The original idea for solving the problem by means of an overhead crane with a magnet (source http://www.gaussbusters.com/custom.html).

The first idea on how to meet the objective was to simply relocate some of the activities, and bundle handling was supposed to be based on the use of simple overhead cranes as shown in Figure 14. A second objective for Profiles was to get part of the imported sections business in the UK, which was worth 400,000 t/a, by improving its customer service capability with

the project. Existing fully manual activities were seen as a hindrance to attempting to increase Profiles' market share. The second objective was not mentioned during initial meetings with the focal company, but it was stated in the formal invitation to tender in January 2005.

Ini was assigned to the task of developing the idea further and for providing more data for initiating the actual project at Profiles. He carried out this task practically alone. *Ini* describes his original assignment by saying: "*it is going to be a costing exercise for the project that they already had, but the project was very messy to me, and I started looking for people like you, and it all started from there"*. *Ini* did not, however, remain within the original boundaries and ideas of solving the problem, as it seemed too challenging to meet the objectives by only applying the initial ideas.

The focal company was in a way at once both lucky and also hopelessly unlucky, as its parent company was in the middle of the process of quoting an automated packaging system to R-Mill, and during the meetings between the sales manager of the parent company (Agent) and the R-Mill personnel, the parent company learned that there was an automatic warehousing project going on at R-Mill, and that the case company was soon going to sign a contract with *Lux*, and therefore it was too late for the focal company to become involved in the project. Instead, the R-Mill people knew that *Ini* of Engineering was working on a costing exercise for Profiles, and the target was related to the handling of bundles of sections manufactured by Profiles. Agent was not at that time representing the focal company but knew the relationship between the focal company and the parent company. He contacted both *Ini* and the focal company's sales director (the researcher), and the parties agreed on a meeting on 24 August 2004 at *Ini*'s office at Engineering to discuss, if there was something that the focal company was able to do regarding the bundle handling problem.

When first meeting was held the focal company received a layout of a potential solution based on overhead cranes with magnets. That was the high-end solution, with a maximum amount of automation available by crane suppliers. The initial layout was basically a huge building (size 150 m x 130 m) full of overhead cranes and bundles stacked on the floor. The system should have been able to handle bundled sections having lengths ranging from 6-24 meters, with the maximum weight to be handled being 5 tons. The number of sections could be anything from one to tens per bundle.

The marketing director of the focal company started working on the concept. The case company was expecting that most probably an application with overhead cranes would be proposed, as requested. There was, however, something that *Ini* did not expect in the way the

focal company worked. The company does not develop or supply overhead cranes, and typically does not follow strictly the preferred approaches, if there are other ways of solving the problems by applying technology the company was more familiar and competitive with. The strategy of the focal company defined the business philosophy as follows.

***Focal company's business idea**: "The company's business philosophy is to supply technically and economically optimised automated customer specific tailored warehousing systems, which fulfil the needs of unit good handling and increase the competitiveness of the customers' own business. The warehousing systems are made on a turnkey basis comprising of all the essential phases applicable in the industry: concept design, equipment design, control system design and realisation, procurement, erection and start-up plus after sales services.*

The solution proposed by the focal company was based on a high-rise solution, which the company had earlier applied in one customer project (light reference project). Instead of using 19,500 m^2 of floor space a concept with a foot-print of approximately 2,800 m^2 was proposed, and the concept drawing of a fully automated solution was transmitted to *Ini* on 31 August, 2004. The key to high-rise solutions is the utilising of floor space more efficiently, as building the same storage capacity with less floor space results in lower overall costs due to the compactness of solution, and the need for less peripheral equipment, such as conveyors. The focal company's proposal was based on special 35 meters long stacker cranes[16], and a cantilever type of storage rack, which at the same time was a building. In the warehousing business terminology such a rack is called a rack supported building, a silo, or a clad rack. One of the objectives of such a building is to minimise the total investment cost and provide the possibility to use quicker depreciation, as in most countries a rack supported building is a machine, not a building. The depreciation period of a machine is normally significantly shorter than that of buildings. One feature in the cantilevers was that they had space for two bundles in depth, and lengthwise is it possible to theoretically fill the rack close to its capacity due to the intelligence of the computer control system. *Ini* had practically lone responsibility for the development of the project at this point, and he assessed, whether the proposed concept should be presented further to Profiles and management.

Ini was interested in the proposed solution, and decided that it would be presented to a wider audience. A formal presentation was planned and held at the case company on 15 September, 2004 by the researcher. Agent was also present at the presentation. The audience

[16] A stacker crane is an automated machine moving in an aisle and either storing or retrieving load units to/from a rack on one or both sides of the aisle. Typically the aisle is 50-200 m long, and the rack can be up to 40 m high.

included 10 representatives of the case company and covered activities, such as engineering & development, production, purchasing and management.

After the presentation the case company wanted to proceed with the proposed concept a few steps further. The focal company started preparing cost estimates of the concept and the case company wanted to see reference projects by the focal company. The proposed solution was developed further and in more detail, and at the same time a visit to the light reference installation was planned. Originally only that project was supposed to be visited, because it was the only one available that was similar to the proposed concept. The heavy reference project was added to the programme, as it was quite close to the light reference and the focal company did not consider the light reference very impressive due to its small size and the rather low complicity of the system.

On September 29, 2004 visits to the light reference project in Sweden and the heavy reference project in Finland were arranged. There were six representatives from the case company (*Ini*, operations manager of Handler, managers for site & market services and manufacture, mill manager of Profiles, and two representing maintenance activities) visiting the two references. Even if the approach in the heavy reference project was different from the proposed solution, it assumed that the size of the project could have a favourable influence on the case company's perception of the focal company as a supplier of demanding projects. The fully automated solution was not the only one considered, instead simultaneously, the original overhead crane idea and also a manual alternative were included in the comparison process.

At this stage most of the communication between the focal company and Ini was by email. Face to face interactions were limited to those two meetings and the visits to the reference projects. Agent kept in frequent contact with Ini by phone.

5.2.1.2 Analysis of the stage

The process started with a very low manning level on the buyer's side, and in practise *Ini* was the only one looking for solutions to the problem. Profiles case seemed a bit more difficult, as Engineering or Profiles had no earlier experience in anything close to the problem, and *Dir* made the initial setup of the project look rather hazy.

***Dir**: "I suppose we didn't really know who the experts were quite frankly, and that knowledge. So, we were relying at that time on Ini going and finding out who were the main suppliers of automated warehouses. We very much relied on Ini at that time to do that".*

Ini was performing the studies and he also made initiatives towards applying high-end solutions to the problem, but the audience was by now sharing his views with regards to the

solution. A natural path towards reducing manpower in the activities is to automate the process or parts of it. However, being a pioneer is not always the most pleasant of experiences, as the following excerpt, which portrays the reception of new ideas among Profiles people shows.

***Ini**: "Very beginning, like I said we had a project, and I was speaking to many people coming with very different solutions to the problem what we had in automating the warehouse. Now, when I first approached with it the mill I was in meeting with table this size [a big one] and everybody put me laughed when I suggested it. So, it was up to me then to go out and prove them wrong and get... bring somebody in".*

That event turned out to be rather significant for the project. *Ini* had two options: swallow his professional dignity and try to forget that he had suggested automation as a solution, or come up with an acceptable automated concept. The event, public humiliation, was a crucial from *Ini*'s perspective, but its effects would later spread wider and initiate a rather complicated process. *Ini* decided to try to bring someone in and prove that he was right, and he had the personal motivation to work towards finding a solution, and the process was very much tied to a single actor, him, in the case company.

The methods of bringing in somebody depend on whether there exists earlier experience in solving similar problems, or whether it is a totally new type of problem. In the steel making process, where suppliers are limited in number and known in the industry, a mill is aware of suppliers, their references, reputation, and also may have earlier experience and a relationship with them, like the following excerpt illustrates.

***Dir:** "I suppose traditionally what we would be doing on a project, we would go, say, for example, said like the mill we are installing at the mill we would go...we would put the specification right specification in terms of what we actually...engineers would down after us saying, you know, saying let's get all this specification down in detail. And when we have this specification, we give it to the main suppliers, which in our case would be ... normally in the mill would be A, B and C. So we go to those three, and anybody else we would have thought would be appropriate".*

The key from a supplier's perspective to having access to new projects is the awareness of the mills of prospective suppliers, and in this respect identity and especially a supplier's reputation in the industry are vital. The status "main supplier" indicates this kind of identity. It seems justified in concluding that in the case there were no known "main suppliers" in the business, and no single company possessed a lead or significantly more favourable position when compared to the others. In cases where there are main suppliers, it is up to the customer

looking for solutions to find a supplier. *Ini* used a wide variety of means in looking for sources to solutions.

Ini: *"Word of mouth and internet, a lot of it in internet, and from the internet you see all the companies by the name, from speaking to them you get other ideas and may develop. When I say word of mouth, you want to know costs, you want to know their cons and pros. That didn't work on word of mouth in a company this size. You can only speak to the people in your office, you don't know really anybody else, who's involved in that. So, the R-Mill project even though it was on-going, I didn't even speak to Lux, who did the R-Mill project. Your name came through them [R-Mill and parent company having a project in R-Mill], but it's just a lot to investigate, a lot of...even speaking to...I found out that there is a federation of warehouse people".*

It is the identity of the suppliers that creates the awareness among buyers. Those who are known suppliers in the industry come first, with this being as important as their trustworthiness as suppliers. Being known is a synonym to being experienced and successful in earlier projects. As already noted *Ini* mentions that even if there was an on-going project in the case company, the supplier of that project was not contacted. The researcher remembers watching the layout of that project on *Ini*'s wall during the first visit. Lux may have shown reluctance in developing a solution, as they had not done a project before like the one needed now.

In the first meeting *Ini* explained what the case company had thought up in order to solve the problem. From the supplier's perspective there were no high expectations, as the customer was already favouring a certain solution (overhead cranes with magnets) and it was impossible to know that *Ini* had a personal motive for the visit.

Ini*: "But your initial... stand when you came to see me. That's... and everybody else came here, you were doing a better work with a guy who's not very high upon the ladder but you have to start there."*

Ini welcomed all new proposals, but first and foremost expected a solution based on overhead cranes. *Ini*'s role in the process was also that of a gatekeeper, as he evaluated the solutions proposed, and then decided on whether a solution was to be presented to the mill people. The project was the primary reason for the activities, but *Ini*'s personal motives were also involved. The first concept proposals were submitted on 31 August, 2004, and commended quickly by Ini.

Ini's email to marketing director on September 1st, 2004: *" Many thanks for your*

prompt response - scheme appears very interesting especially to the Profiles people - just a few questions so we can clarify costs. [Technical questions, and then] Is there a similar system within the UK?"

The last sentence of the message describes the governing cognition during the early phases of the process. All dimensions of both customer and supplier uncertainty were present, and there was no better way to decrease them, on the supplier's side, than referring to experience demonstrated with references. Another interesting detail was that *Ini* had already presented the solution to Profiles. Hence, he was convinced that it could the solution he was hoping to find. The first cost estimate was prepared and sent to *Ini*, and it was quickly reviewed and comments sent back to the focal company.

Ini 7.9.2004 to marketing director: *"Many thanks again for your prompt response - I have forwarded the information to the relevant engineers and await their reply. Do you have an example/photo of the shuttle arrangement you have considered for the offloading in and out of the warehouse? Apologies for the 'haphazard' nature of the questions but the situation is now urgent with regard to finalising a scheme - with this in mind what is your availability/notice required to visit our company [case company] to discuss further"?*

What seemed to be very important in the interactions was the response turnaround time, as mentioned before. The importance of this was also communicated to Agent. In discussions between *Ini* and Agent the subject was referred to, and markings in Agent's diary tell that *Ini* was *"happy with the answers"*. Responding quickly not only portrayed professionalism on a personal level, but also showed the supplier's commitment to developing the new relationship.

The initial step of the project seemed completed and *Ini* started arranging a presentation for Profile's people. That was going to be the next milestone in the process. Concurrently, with the presentation arrangements, a reference visit to light and heavy reference projects were planned. Interest in the proposal and further steps indicated that the proposed solution was attractive and the supplier capable of fulfilling it.

Ini: *"Initially it's the idea that strikes you. Oh yeah, because we looked all different ideas all over the place, lots of messy ideas, lots of ideas that are going cost a fortune. Then we came up with the nice and neat solution, we think that could work. We put that back to the higher, to the mill personnel again. So, then we progressed that idea a bit further. Not necessarily dumped the other ideas but then we obviously got on different channel to think, yes. Initially it's the solution to the problem, which we like, and then it's checking, if the company is suitable to carry it out."*

One of the significant milestones during the stage was the presentation on 15 September. It turned out to be a critical event concerning the future of the project from the supplier's perspective. As a supplier, you can loose everything in such a single one-hour presentation, but on the other hand, you can only win access to the next stage by doing it, by creating a positive perception for the customer.

***Ini's opinion on perception of presentation**: "Hit the wall perhaps, otherwise we would not have gone forward. I don't think there were many dissents in voices at all, from what I heard. They obviously... I'm just making ...they all speak for themselves, what they really comment I don't know but certainly fairly good enough for progressing further. And for them to send a lot personnel to yourselves to see what could work and not worked".*

What are the elements that enable the "hitting of the wall" in a single presentation? The success factor of the presentation seemed to be twofold: is the presenter perceived as being professional, and secondly, is the supplier perceived as trustworthy?

***Manu:** "You knew what you was talking about. I think you do what you said. I got the impression, yes it was worth for, I got the impression you were professional."*

***Dir:** "Focal company as an organisation had put some efforts in to come across. Had got, understood what we required, and had a methodology that could deliver what we wanted, something quite positive really."*

Hence, the success of such an important event is based on personal level factors, such as the ability to convince the audience professionally with knowledge, and also the ability to convey the message to the audience. Being a good presenter is not, however, an adequate pre-requisite for getting the proposed concept accepted. A concept is only a concept as long it cannot be verified with practise, which in this case can only mean a reference project with something similar to the proposed concept.

We can say that if the very beginning of the process dealt with finding suppliers with something to offer to solve the problem, the process gradually shifted itself to looking at solutions. Suppliers found during the beginning of the stage provided a means to overcome the problem, and the solution oriented perspective governed the cognition of the individual actors involved. The amount of interactions between suppliers and their customer was limited and had a lot to do with becoming familiar with the problems and eventual limitations in solving them. Once there was a solution proposed, and it was found interesting and viable for solving the problem, more intense interactions commenced. Presentations and technical

meetings are such interactions and individual actors have a central role in the process.

All of the informants involved in the early stages emphasise the influence of the individual actors with similar definitions. The professional capabilities are vital as *Ini*'s statement indicates:

***Ini**: "We have to see how professional people look, when someone is sitting in front of you" or "it's your professionalism, your expertise sticking out. It's the kind of professionalism you see, when you speak to the people".*

Fresh and weak bonds between the individual actors start to develop, and there may be some personality elements included in the fresh relationship, but they are not necessarily reported further, and the informants do not deny that they pay attention to various factors related to the suppliers' personnel. The personality of the marketer is remembered, and there may appear to be some very negative aspects for some of the informants.

***Manu:**"At that stage I don't think that you are into bunch of salesmen just trying to sell you something, it's more let's get this done and where we are".*

Instead the professional aspects govern the development of the relationship.

***Dir:** "I think the role of the people at that stage is to identify some bonds I suppose fairly early over the experts, expertise surround, like the process control expertise on one side, to know each other. Do I know what he wants, can that man deliver, what I am after. Is there a certain bond there, you know from process control, mechanical, manufacturing, technical? I think that's the process, if there are certain bonds developed, then from the people point of view that has the begin part, because if there is a sort…well I'm questioning you and you can't answer me or you give me some answers that are a bit wade then I do accept you, do accept you, you know talking about...because then invariable those people will get together again, and then say, I didn't get much from him mechanically or electrically, or technical or manufacturing, and the whole process can fall apart very quickly. But if the sort of professional knowledge is there, then there is professional respect from both sides which builds up to confidence".*

After the presentation, the case company had enough confidence in the solution given for solving the problem, but also in the supplier, consisting of individual actors, and they were ready to visit the reference projects.

References in the early stage served two purposes: 1) From the customer's perspective they were a method of gaining more knowledge about the solution and the supplier's capabilities, and 2) From the supplier's perspective references can support the position of the solution and the supplier as a trustworthy partner for a project. For a supplier a reference visit

can provide a way of testing the customer's perception, and the seriousness of their intentions.

From the supplier's perspective a reference visit is always a calculated risk. The original idea was to only make a visit to Sweden, as the concept was roughly the same as that proposed to the case company. The focal company, however, started hesitating and evaluating additional programme items, as the light reference project could be reviewed quickly, and the focal company did not value very highly the system when compared to other installations due to the small-scale operations and low impressiveness. Adding the heavy reference programme to the programme turned out to be a wise decision. *Dir* himself did not take part in the visit, and instead was briefed about the visitors' impressions.

Dir: *"The one in Sweden was very light application, it was a concern, very light application compared with, what we required. There was concerns about automation and manual intervention in particular from that side".*

The supplementary visit on the other hand was a success.

Dir*: "On the other hand when we went to the heavy reference project, very impressed with the size and scale, relevant to steel, big beefy. There was well used, well understood, I think that gave us enough confidence that the kit could work".*

What the customers expect from the visits was referred to by all of the informants involved in the stage. They wanted to physically see the installation and make their own judgement about whether they could be confident in the solution and the supplier. It was important for them to have the opportunity to ask the users' experiences of the equipment and the supplier. The steel industry is heavy, and in the mindset of a steel maker one element in valuing equipment and a solution is robustness. Even though the weight of the equipment does not necessarily mean that it is suited for the purpose needed, in the mindset of the steel industry heavy weight is regarded as a sign of quality and an objective worth pursuing. In case a reference visit creates doubts, or is not able to remove already existing ones, it may close the door on the supplier or the solution.

Dir: *"Physically going out there, the visual is very important, sort of taking us to next stage, because if they had come and said you know, this is just not our application or the kit is not just going to really positive for our application, then that would have the end of that point in time".*

During the two visits the focal company (represented by the project manager in all

reference projects) was able to see both a bad reference (light project in Sweden) and a good reference (heavy project in Finland). However, the outcome of the visits was positive as the process continued further forward to assessing the features of the proposed concept in more detail and comparing it with the other solutions of different competitors.

Table 23 sums up the dimension level coding of the stage - Identification of Requirements. A detailed coding summary is presented in Appendix 5.

Table 23. Distribution of coded passages (dimension level) in the stage -Identification of Requirements.

Dimension	**Components**	**Number of coded passages**
Functional dimension	Solution to problem Solution finding Starting point	47
Experience	Experience in industry References	38
Relationship	Investment in relationship Customer orientation Trustworthiness	28
Identity	Known in industry Trustworthiness	26
Personal level factors	Professionalism Personal touch Personal motives	19
Uncertainties		15

The problem, and consequently how to solve the problem, is the topmost topic in the buyer's cognition. Hence the *functional dimension* governs the stage. Buyers have an initial view of the solution they think could be used to solve a problem, *the starting point*. That kind of a solution might not provide any dramatic advantages, but on the other hand, it would be rather simple to implement, and risks related to it were low, and it provides a benchmark. *Solution finding* comprises initial testing of any new solutions against the benchmark and competing solutions.

Any solution to the problem suggested by a supplier, no matter how good it is, can be interesting only, if the *experience dimension* meets the buyer's criteria. The supplier has to have *experience in the industry*, and know the requirements. Experience in the industry may not be enough, especially if the solution is novel to the buyer. The supplier must demonstrate the experience with *references*.

The *relationship dimension* is interactions oriented, as it is composed from the components *investment in relationship*, *customer orientation*, and *cogency*. The buyer expects

the supplier to consider the buyer's needs important and *invests in the relationship*. In the same way *customer orientation* is required, as neither the supplier nor the buyer can alone build the project, and the buyer wants only to work with suppliers that regard the solving of the buyers problem important and are able to cooperate. During the interaction process the buyer is able to assess the *trustworthiness* of the supplier.

The candidate suppliers are searched for by the buyer, or they are already *known in the industry*. In this respect being *known in the industry* could to some extent represent reputation, but it was not the notion applied by the informants. The *identity* of the suppliers includes also the *trustworthiness* component, which also could be regarded as part of reputation, but again the data referred explicitly to *trustworthiness*. Projects always have two parties, supplier and buyer, and interactions between the parties are necessary.

When the supplier is promoting its solution, and the supplier as an organisation, the task is carried out by the individual actors of the supplier. The outcome of supplier's promotion is based on the individual actors, and that element should be modelled in the *personal supplier dimension*. The value of the dimension is an outcome of the *professionalism* and the *personal touch* of the actors. *Professionalism* comprises the competences for developing a solution and conveying the message to the buyer. The *personal touch* is the component measuring the ability to work with the other party's actors and to do it in such a way that both parties feel confident. As there are two parties, the supplier and the buyer, it is no surprise that some personal elements are also influencing the process on the buyer's side. The *personal buyer dimension* includes the *personal motives* of why the actors on the buyer's side want the process to go in a certain direction, and why they act in the way they do. Uncertainties reflect on all the dimensions and components, and they include elements related to the solution, supplier, and also the buyer. The buyer is constantly cautious about whether he/she is doing the right thing and with the right supplier.

The question, regarding whose perception the supplier's position is based on during the initial stage of the process is interesting. The majority of the stage was controlled by a single person, who was in the position to decide whether the solution should be introduced further to the mill people and the management of the case company. Once he made the decision to proceed, the perception started to be based on a wider audience. Until that, the gatekeeper's role governed the process.

Critical events

Table 24 sums up the critical events identified in the data concerning the stage

Identification of Requirements. Critical events were found related to four different areas: buyer's individual actors, supplier's ways of working, interactions between the focal company and the buyer, and events external to the project network. There is no justification to claim that any of the events would be significantly less meaningful than any other, as in the case of a novelty solution to a problem, the buyer has a considerable need for information and confirmation that the direction of travel is correct. Codes related to uncertainties refer to the situation on the buyer's side. In that respect references and interaction related events might be claimed to lead the shaping of the buyer's cognition.

Table 24. Statistics on critical events during the stage Identification of Requirements.

Type of critical event	**Number of coded passages in data**	**Examples**	
		Positive	**Negative**
Incidents related to buyer's individual actors	2	- make one feel important	- humiliation
Incidents related to supplier's way of working	5	- responding quickly to requests	
Incidents in interactions between supplier and buyer	5	- impressive presentation/solution - demonstrated professionalism	- unworkable solution
Incidents outside project network	5	- seeing good reference	- seeing bad reference

From the whole project perspective the most important type of critical event was related to one of the individual actors on the buyer's side. Hence *incidents related to buyer's individual actors* initiated the project and kept it going. Once the process was started the focus of critical events moved to interactions between the parties. The interaction process and the supplier's way of working was a fruitful environment for critical events shaping the supplier's position. When the supplier was *performing* well, the buyer perceived it as an *investment in the relationship* and consequently the *relationship dimension*. Performing well was also crediting the individual actors of the supplier and their *professionalism* and the *personal supplier dimension*. Visits to reference sites were critical incidents, which could have an influence in two ways. Firstly, they could either be a convincing or dissuading factor with regards to *the solution to the problem* and the supplier's *experience*.

Based on the analysis it is possible to construct a summary on the governing dimensions of a supplier's position, components of the dimensions, and sources of change influencing a supplier's position during the stage.

5.2.1.3 Conclusions of the stage

Figure 15 sums up the results of the analysis for the stage Identification of requirements. There were two dimensions more central than the others, the functional and experience. Both of them followed the structure presented in the research framework to a great extent. There were, however, some differences in the functional dimension. There were no references in the data to implementation of the solution, and an initial view of the solution to the problem can guide the mindset of the buyer. The stage did not confirm the existence of the role dimension during the stage. The earlier research on position saw role as one of the principal dimensions. The relationship aspects turned out to be different from the earlier research. Personal elements were seen to be so strong in the data from both the buyer and the supplier perspective that they constitute own dimensions. The relationship dimension during the stage comprises the supplier's investment in the relationship and therefore the ability to create trust on the buyer's side.

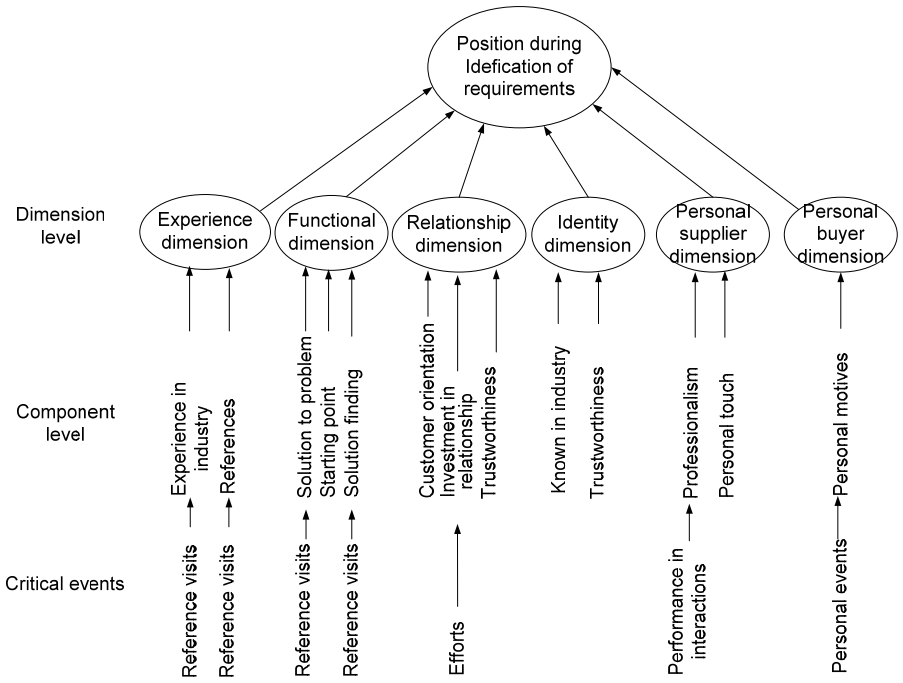

Figure 15. Supplier's position in a project network during the stage "Identification of requirements".

The identity dimension includes reputation elements. A supplier can greatly influence the buyer's perception of the supplier via its individual actors, and how professionally they

interact. A new element in the position was related to individual actors of the buyer, and specifically their motives to act in a certain way.

Events capable of shifting a supplier's position either way take place during interactions with the buyer and whilst presenting reference projects. Supplier's individual actors directly influence the perception of the buyer. There is no way for the supplier to be aware of the buyer's personal matters and events related to them. Still those events may control how the process develops.

5.1.2 Feasibility study & Research/selection of suppliers for advice

5.1.2.1 Description of the stage

The stages feasibility study and research/selection of suppliers for advice are not really separable in the selected case. Phases are so deeply intertwined that it is easier for readers to follow, if they are handled together. Figure 16 presents the major events of the stage. The stage started in the beginning of October, 2004 and lasted until mid-December, 2004.

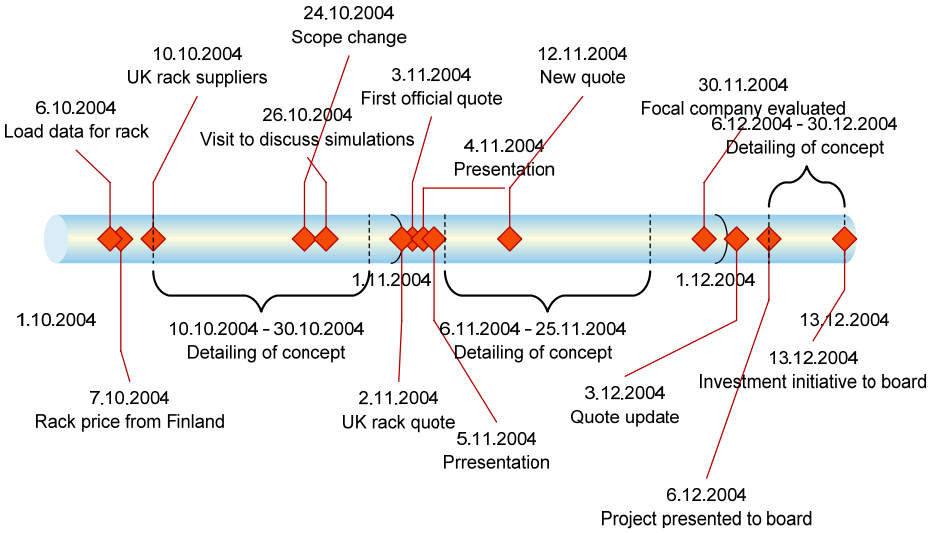

Figure 16. Timeline of major events of the stage "Feasibility study & Research and Selection of Suppliers for Advice".

After the first proposal, meetings, presentation, and reference visit the case company wanted to analyse deeper the proposed concept. The company wanted to evaluate the suitability, with regards purpose and feasibility, of the automated high-bay solution, and to eventually compare it with the other concepts, which were based on applying overhead cranes

for handling the section bundles. One can speak about a feasibility study, but in the end in the case company' terminology a much more limited action was carried out. However, at the same time, part of the works performed, were close to consulting and providing information in order to assist the case company in the process. In Ini's expression the "feasibility" study was something else:

Ini: *"Tentatively...this project was not doing properly on that bit. I'm not doing S84 (formal feasibility study) for them. That's what this was, they didn't fully appreciate what going on at the time, what should have happened was, we should have done a feasibility study".*

In early October, 2004 the focal company started preparing details on the proposed concept. The layouts submitted in early October included two alternatives, the first one with three stacker cranes with a system total length of about 330 m and another alternative with four stacker cranes with a system length of about 270 m. Both had the capacity to handle over 7000 average 12.2 m bundles. These layouts were a starting point of an analysis process and very intense interaction period. The storage capacity was not clearly defined, instead it was preferably as high as possible, and it was supposed to be one of dimensions used to compare the alternative solutions.

The first ideas were based on supplying the project as a turnkey from Finland, and that is how the detailing commenced. The scope of supply was limited to structures above the ground level, and the case company was responsible for the foundation. One part of detailing was to submit loading data for foundation design, and that was done on 6 October. As the case company was a steel mill, it was not a viable option to try to sell steel manufactured by the competitors of the case company, instead the focal company would provide only the manufacturing of the rack.

The first cost estimates during the stage "Identification of requirements" were based on turnkey delivery, including rack supported building, stacker cranes, conveyors, and a computer control system. The first estimates were, however, more or less based on feelings instead of detailed analysis of costs and data by sub-contractors and partners. From the supplier's side it is also normal that the first cost estimates are on purpose too optimistic in order to keep the project alive. That was the case also in this project, but there are also risks related to strategy. The initial estimate was on the level of 2.4 M€ for the core of the system (stacker cranes, rack, computer system).

Concurrently, with a more detailed design of the proposed concept, the search for a

suitable partner to undertake the project went on. The biggest challenge was the rack, or rack supported building (the rack is also the frame of a building), as normally it is the most expensive single component in bigger systems. The focal company could not turn to the company, which had supplied the rack to the light reference project, as that company does not make heavy racks and rack supported buildings at all, which was the only viable approach in this type of a system due to cost reasons. The focal company had two more possibilities, which it had earlier worked with: one was a Finnish company, which had supplied racks to the heavy reference project, and a subsidiary of an Austrian steel maker. The Austrians said that they were not interested in cantilever racks, leaving only the Finnish supplier from known rack suppliers.

The quotation given for manufacturing the rack by a well-known supplier was a shock, as it cost 6 M€ excluding materials and freight from the UK to the rack manufacturer's premises. Due to the high costs of the Finnish rack supplier, the focal company contacted UK suppliers for steel structures. In mid-October the focal company started evaluating, whether the scope of the project should be changed, as the case company was more than likely able to purchase the rack at a much lower cost from the UK market than the focal company. On 24 October an agreement was made with the case company that the focal company would assist in finding a feasible supplier for the rack, but it would be the case company's responsibility to purchase it.

From mid-October until the end of October very intensive detailing went on and the parent to the focal company joined the process and prepared a proposal regarding how to integrate the warehousing system with the production and shipping of products to customers. The focal company was the main supplier, with the parent company acting as a sub-supplier to its daughter company. As the concept was also rather to the focal company, verifying the operation of the proposed concept was demanding. Verification was done with computer simulations, in which a 3D model of the system was generated and the model was run with the intended materials flows and equipment characteristics. The simulation runs provided performance data on the system, as the data was essential while assessing the suitability of the system for the intended purpose. The focal company has the in-house capability to simulate systems, and representatives of the case company visited the focal company on 26 October to become familiar with the capabilities.

On 3 November the updated detailed quote was submitted and amounted to 3.8 M€. It comprised four stacker cranes, a computer system, engineering and project management. In

addition, a conveyor system worth 1.14 M€ was quoted. Hence, the system without racking was 4.94 M€, which would mean an average size project for the focal company. The parent company was financially not in very good shape and was urgently in the need of new projects.

On 4 and 5 November a presentation was supposed to be given to the management of the case company in which the technical suitability of the proposed concept would be shown. The focal company had made an extensive amount of simulation runs for the presentation. The first day was intended for the two companies to prepare jointly the presentation of the results of the detailing work for management of the case company. After the first day, the following evening and night were used for additional simulation runs and for preparing the report about system performance characteristics. The focal company was represented by the marketing director and the Agent.

In November 2004 the focal company made two more detailed proposals for the equipment and while doing this included the parent company's conveyor system in its scope. Hence, the scope included engineering, stacker cranes, conveyor systems for integrating the warehousing system to both production lines and to loading and shipping activities, and a computer control system. The value of the proposals was in the range of 3.5-5.5 M€, in which the parent's portion was 45% of the total value, and was for them, due to a rather difficult financial situation, an important prospect.

After the presentations in early November the project still seemed to be alive, and technical detailing continued. The UK rack manufacturer submitted a quote, which would result in lower costs than the Finnish alternative, but still the overall cost of the project was way too high. In the case that significant savings could not be found, the project would not be presented to the board. According to Ini's calculations the total cost would be 12 M£, which is equal to 17.5 M€. Ini had told Agent that 10 M£ was the target cost, and if it could be achieved, then the project would be put before the board.

At the end of November the focal company assessment commenced, with the purpose of the process being to get prepared for order placement, in case the costs were at an acceptable level and the board were to accept the investment. On 6 December the project was presented to the board of the case company and following this an investment initiative was sent to the board for evaluation. Ini started preparing an official invitation to tender. The case company was preparing to make a quick order placement to the focal company. Ini had told Agent that the case company could place the order within four weeks of getting a quote based on the tender request, and that the project should be completed at the latest by November 2005.

5.2.2.2 Analysis of the stage

There was a clear change in the process after the visits to the reference projects. It was no longer just a question about whether the proposed concept was just one alternative among others, but instead was now about finding a potential way of solving the case company's problem. The discussion shifted in leaps and bounds towards looking at the details of the case company's project and the influence of these on features of the system. Another sign that a more serious dialog was taking place was the importance placed on the costs and the feasibility of the proposed concept in solving the problem compared with the other solutions, which were still kept in the process.

The chosen strategy was a compromise between the excellence of the proposed solution and its cost, taking into account that a very good solution with an attractive cost estimate provides an excellent functional dimension. On the other hand, as long as there are alternatives, which may not be as advanced as the others, but the buyer can manage, then there is no justification for paying excessive costs.

Manu: *"...because if the price is too astronomical or too out of the way, we know it's not going to run."*

The other extreme used in this case was giving an unrealistic cost estimate, but this was found to generate a negative impact on the supplier, as Ini mentions below:

Ini:*"Some disappointments were in some of the accuracies regarding finance, cost were underestimated to start with. Now, perhaps that was what the mill wanted to hear."*

The objective of a feasibility study is to provide accurate information for decision making, and this requirement had to be met during the phase. The data indicates that the solution to the problem is "the question" that should be answered in a trustworthy and proper manner. During the stage a more detailed evaluation of the three proposed solutions was conducted, and that was supposed to be the specification for more detailed design. The case company had numerical data on their operations, and the data included material flows and features of the section bundles the system was supposed to handle. One vital objective by Profiles was to achieve as high system capacity in tons as possible.

Engineering felt that the boom in investments in the steel industry and workload also has an influence on how much time and resources are allocated to each candidate project. Ini expressed the situation as follows:

Ini: *"We couldn't price up exactly every single project that came through because they were coming from all over the place".*

Originally the focal company had informed the case company on the estimated foundation costs in other projects. Engineering had made calculations and the outcome of these was that the reactions caused by the racking in the foundations were very high. The maximum pile load could be as high as 135 tons each, and that kind of foundation would be significantly more expensive than originally expected, as Ini's email message below indicates:

Ini (November 23rd): *"Please find attached a copy of the civil design for our project based on the 4 stacker system - is this, what you would expect? If this is correct then the cost could be as much as £7M - probably around £5.5M - certainly far more than was budgeted circa £1M. Can you please advise a.s.a.p. as this could put the whole project in doubt."*

The matter was so critical that it caused an intensive session at the focal company to take place to check the calculations done by Engineering and to propose some modifications that could bring the costs down. A couple of days later Ini reviewed the proposed modifications to the designs and sent an encouraging email.

Ini (November 25th): *This will make a difference - mostly for our structural design - however what are the fail safes and set limits to enable a redesign and assure there cannot be out of balance loading?*

According to Manu, representatives of Profiles also felt the heat of the moment.

Manu: *"That was, because at that stage, we didn't know, how little we knew. (Laugh) If it ought to be, it was just that much about warehouses, but we needed to know fairly quickly, and we needed to see key things in our minds tick off".*

Based on the case company feelings the naming convention of the used process model seems justified, and in order to be able to define the feasibility of the project they needed assistance. It was not a process in which the supplier tries to sell something and the buyer's role is to decide whether they will buy it or not. Instead, the exercise was a joint task. This seemed to be one of the perspectives from which the suppliers were evaluated. The case company had to make up their minds whether the solution to their problem was a viable option, and they considered the other party a suitable partner for the project. Manu as the representative of the future users crystallised logics in a simple way.

Manu: *"There is two bits to it, the bit that says, is this going to give us what we want, could we see this working and how much it is going to cost, ballpark of this, to say where ever ten, or twenty or forty million, where ever we are going to be."*

The first main question or "bit" in Manu's words is the match of the solution with the objectives of the whole project. In this case it was the capability to automatically handle all the different products coming from production lines at a variable pace. Sending products to customers from the system was not yet discussed in detail. It seemed to be more important to provide a sink eating the production and store it. It was the solution to the problem that was clearly visible to the informants. Another aspect of the first bit was the trustworthiness of the proposed solution.

Ini: *"Because they came up with tough solutions, that were kind of un-workable, or workable what...you know, take so much land space, messed the mill about too much. So, in one company in particular, so they were out".*

As Ini has already pointed out, one aspect during the early phases of the process that in sports terms we can consider the continuous evaluation of the proposed concept as the play-offs continuum. There is the possibility for the position to collapse radically, and during the early stages of a project, it can equate to ending the relationship in the project. The group on the customer's side is carrying the uncertainty load due to multiple reasons, but especially due to the solution. Even if the number of stakeholders was now bigger than during the first step "Identification of the Requirements" they still seemed to have a lot at stake, like Manu mentions below:

Manu: *"We are still manufacturers, you are warehouse experts, and we just have to make sure in our case the product we use in the way it was built, it's going to fit with the concept of warehousing. And that side of it, and what we will need, because we were very nervous at that time, because what you were going to know, we don't know that".*

The second "bit" in the evaluation was related to the cost of the proposed solution. There was no clear idea of what the costs would be, but at least the case company was able to compare different concepts proposed.

The challenge for the suppliers on the higher positions was the feasibility perspective, as there was no clear indication what could be regarded as feasible solutions. Finding out whether the proposed solution was worth presenting further to the case company's

organisation and funding decision makers, required an interactive process between suppliers and the case company. The outcome of the process was supposed to be a technical and financial analysis of the solution and the decision to go ahead or abandon the solution. Hence, the play-offs continuum was more than just alive.

Technically detailed solution development is a pre-requisite to a financial assessment of all costs involved, and the customer was expecting an intensive joint effort by its own project people and the suppliers' experts, as Manu states below:

Manu: *"Rather early, you are looking for a willingness to work with you, to look at your ideas, and to listen, and to react. Not just to say yeah, I shall give you that, whatever you thought about this and that. That's important, so we are actually while in feasibility getting to what, something we believe will work, and building up referral".*

The roles of the parties in the process were quite clear.

Manu:*"Are you prepared to work with us to work through those, because we really don't have them all in our minds, and we have come up with an idea, a concept, and you put it together".*

From the suppliers' side this kind of working method calls for customer orientation and willingness to invest in the relationship, or even joint construction of demand. The degree of the investment in the relationship is measured continuously, and judgement is based on simple events during the interaction process. The sources of change are not necessarily dramatic, and instead they are more like steps in an incremental process. The following two excerpts describe the sensitivity of the process and possible directions of development. In Ini's opinion, one of the most important matters during the joint project is co-operation.

Ini: *"Cooperation...that's what you did very well, you didn't loose, loose track of all the things, silly things, that felt...that was thrown out at you…Yes, definitely cooperation, any questions we came up to be answered as quickly as possible, which initially it was."*

There were critical events, which seemed to affect the customer's perception quite heavily. One such event took place on 4 November, when the operation of the proposed concept was analysed with computer simulations. The amount of work was rather large and a presentation of the results was agreed upon to take place the following day. The analysis work was partially done in Finland by a simulation specialist of the focal company and partially by the marketing and sales people who were in the UK. The two merged data generated in two

countries in order to provide the necessary results, and the work was carried out during the night. Manu remembers the time clearly:

Manu: *"I could remember coming to the lounge at your hotel to work and that showed to me that you were committed to come up with a solution, because you had a bloody long day from memory and you were still prepared to go down that road. Which was to me, that was a sort of thing needed, we are not just that, and you knew what you talked about, you could do some modelling to show us how it worked, which was important to us at that time."*

The joint project is not always easy and smooth, when one party is keen on using resources that are limited on something may not be very important, like at one point, when the case company wanted to make a series of analyses requiring weeks. The supplier's willingness to invest in the relationship, however, was based on episodes like that.

Manu: *"We went to that crane utilization, so that time we thought that was important. We might not be right but you are good enough not to say, no we can do that, you let us work that one out, and that's, it extremely important at that stage".*

The line between a successful and unsuccessful interaction is thin, and even if the nature of the changes during the stage was more incremental in nature, there were, however, elements of radical change present.

Manu: *"If you used to say, no that's not [the way to go], you don't want to look at that, we could quite easily quit, because they are not prepared to work with us."*

One element in the development of the relationship during the interactions, both face to face and remotely, was found to be something named "working climate" between the parties. Working climate can partly be taken as the outcome of the investments or non-investments to build a relationship. It seemed clear to both parties that the commitment to cooperation was needed for quite a while, as Ini mentioned to other members in the project group:

Ini: *"Like I said in 2004 [to the others], we've got work with these people for two years at least, something like three, if we go to a correct plan."*

As was said before, there were two arenas for building the working climate: partly in the meetings between the parties and partly in communication, mainly by emails. Personal behaviour and features governed the meeting atmosphere, and by selecting the correct persons to represent the supplier it is possible to create a positive climate. Manu remembered this

while commenting on some of the intensive meetings that analysed the proposed system:

Manu: *"Positive actually, when you let us access to your software guys, because that was, yeah, good proven, and allowed us to the statistician, the clever guy, much brighter than I am. Quite a guy, that was, yeah, the opening of the debate, looking at good that detail, giving us confidence, that was very positive".*

Still, the line between a positive and negative climate was very thin. The problem from the supplier's side is to know what actually is positive or negative. In fresh relationships it is very difficult to know how to proceed with the persons on the other side of the table. The working climate mainly depends on the individual actors interacting with each other, and how they act during the interactions, and how it influences the perceptions of the supplier by the customer.

Manu: *"But the very positive we had, we could good see your guy. Very straight forward and [he] seemed to think about, what we were doing, and looked it from our stand point, plus we got that rapport going between Nick, yourselves, and that was very important. Quite positive, because I think it had to be, note this is what you are having. Had to be, it could have that easily slipped the other side of the coin, and been negative to you. That was what we needed and you allowed us access to that".*

As it seems obvious that the persons on the supplier's side heavily influence the customer's perceptions of them, it is interesting to go deeper into the personal level factors in the context. The key to a working relationship on the individual actor level is trust, and in this study and context the vital question is: Can the persons on the customer's side trust the suppliers' staff? It is not a question about liking or disliking the other party, instead the trust or lack of trust is on a professional level, like Manu states below:

Manu: *"What is the importance of people? Well, i see people as the most important thing, because all we got at that stage is a concept, we go broaching that says it's sound, you get to that stage, and the skills you are looking for, integrities, they are as far as you can go. So the talent that you feel comfortable in, they need to be experienced in what they are doing, because if you are thinking across the table, I think it would do this, I think it would do that you start to loose confidence."*

Confidence is an outcome of the personal skills demonstrated during interactions. The customer was expecting knowledge and experience in solving a problem like theirs, but it seems to be as important to be able to behave and communicate in a credible way. It has been pointed out several times that the situation was full of uncertainties related not only to the

supplier and customer, but also to the proposed solution, and the informants mentioned several times a stereotype, which was considered the least expected actor in the interactions, the salesman.

Manu: *"We don't want just pure salesmen who say yeah we can do everything for you, and whatever. It is the balance between knowledge and being able to react to what was suggested, because we are looking for… we don't really know what we are doing".*

The organisation behind a credible communicator and professionally skilled expert becomes important, as the customer expects to see a wide knowledge base in the supplier's organisation. Hence, a single skilled representative can start building the confidence needed for trust, but that can only act as a building block as trust requires more than a single person.

Manu: *"That's the main point, to give you that confidence, that's got the backing, and I'm actually happy when I'm meeting somebody who don't know, and just says don't know, I can ring and I can find out later. It is this backup that also gives you confidence. One, he is not being sore because the guy only tells you what he knows".*

It seems that personal level and organisational level dimensions cannot necessarily be separated. The two levels are intertwined, and a single actor, even if interacting alone with the customer is the customer's road into the organisation. The identity of the organisation is mirrored via its individual representatives. In the first round of the play-offs the individual actor is at stake, and he/she can lead the whole team to the next round for another game. The interplay between the individuals and organisation is important, and in the uncertainty, the customers look for a wide base of knowledge and resources.

Manu: *"That with the concept, can we make it work, and when we look at the feasibility, can we move forward with its price, and we can put that interpersonal, and preparedness to access all the people and access knowledge, the way we've looked I but that feasibility is two way, people and preparedness to answer the questions in detail."*

The personal level interactions point back to the organisation level and identity, as the customer expects the supplier to show trustworthiness as a supplier, and trustworthiness can be demonstrated through the capability to develop a working solution and prove its usefulness. In addition to the solution the customer wants to see an organisation with resources and with a wide base of skills and knowledge. However, that is not enough, as cooperation capability and willingness are required.

The cost of the project was a major problem. It seemed obvious that there would not be a project, if there were no ways to reduce costs. There was much communication and the agent was in close contact with Ini. His impressions on the situation were, however, encouraging:

Agent: *"Strength calculations are by the case company itself. Bedrock in the area was in the depth of 20 m and piling was planned to reach the rock. Even Ini thinks that wind forces in the calculations are too high, and Ini will send the sketches used in the calculations. Can you respond to Ini as soon as possible? I think that our position is until now ok but the whole project can fall down due to the unbelievable foundation cost, which are almost 50% of the total cost."*

The total cost of the project had climbed close to 15 M£, which seemed to be above any expectations and meant that there would not be any project, unless savings could be found. The focal company received some documents, which revealed some misunderstandings about the concept by Engineering's designers and there were possibilities to lower the costs. After some modifications the project was ready to proceed to the next phase, and cost level 10 M£ was the target for the project. The case company made a comparison of alternative solutions to Profiles and decided to prepare in a special expenditure (SE), in which Profiles asks funding for an investment reporting the expected costs and advantages, if the project will be implemented. One individual, Ini, was certainly pleased with the development of the process, and at that point in time his position was rising in the case company. Ini was making the enquiry instead of purchasing, and in the eyes of the management he was the one offering a good solution.

Ini: *"It went from an idea, from me up to top management to director's decision to see, yes. We are going to go ahead."*

The outcome of the comparison between different solutions in the feasibility study was summed up in the inquiry submitted after the decision to go ahead had been made. The compared alternatives to solve the problem were: the proposal by the focal company, keeping the existing procedures, or to base the solution on overhead cranes with magnets. Keeping the existing procedures was concluded to be in contrast with the high service standard objectives, and overhead cranes included some labour intensive elements, and safety concerns. Table 25 sums up the coding of the stage Feasibility Study/Research and Selection of Suppliers for Advice. A detailed coding summary is presented in Appendix 5.

Table 25. Distribution of coded passages in the stage Feasibility Study & Research and Selection of Suppliers for Advice.

Dimensions	Components	Number of coded passages
Relationship	Customer orientation Investment in relationship Joint construction	53
Functional position	Solution to problem Trust in solution Feasibility	42
Personal level factors	Professionalism Good guy Skills	36
Identity	Co-operation capability Trustworthiness	33
Uncertainties		26
Comparison of suppliers		11
Experience		2

There was one dimension, which was placed higher than the others: the *relationship dimension*. The other two governing ones, the *functional dimension*, and the *personal level factors* cannot be separated from the relationship dimension. No matter how good the solution and its features are, it can never be implemented, if the relationship between the supplier and the buyer does not work both on the organisational and individual level. The functional dimension is composed of three components: *solution to problem*, *trust in solution*, and *feasibility*. The component *solution to problem* portrays the fitness of the proposed solution to the problem compared with other solutions. There will be a certain level of *trust in solution* depending on the technical and other argumentation of the supplier. In this respect it is worth noting that experience and references were not directly involved during this stage. Experience in solving similar problems is an advantage, but it must be translated into other arguments. Even a good solution may not be implemented, if the *feasibility* of the solution is worse than that of the competing solutions or is simply unacceptable.

The *relationship dimension* together with *personal level factors* were important during this phase, even though the informants emphasised the *functional dimension*. The proposed solution to the problem is the starting point of the process, but a business relationship is possible only if the relationship between the supplier and the customer is developing and there are bonds between both organisations and individuals in the organisations. The supplier has to *invest in the relationship*, by showing that the customer's problem is important, that they have a *customer orientation*, that there is an honest will to help the customer or that they are willing and able to *jointly construct* the project. Helping and convincing is possible only if the

supplier's staff has the adequate *skills* and knowledge to develop a feasible solution, and especially that they are able to show trustworthiness and the capability to communicate and work as a team with the customer. On several occasions key persons pointed out how easily the relationship can take a downturn due to not trusting a person, or because a person is not cooperative, not easy to work with or simply not a *good guy*. A single individual actor despite having the necessary *skills* and competences is not adequate from the customers' perspective, as they want to feel confident that there exists a wider base of resources in the suppliers' organisations, which equates to *trustworthiness* as a supplier. Even though there was a good working relationship with the person responsible on the supplier's side, the case company thought it was very positive that they were introduced to other individuals in the supplier's organisation; and after they were able to demonstrate their capabilities, the value of the whole organisation was enhanced in the eyes of the customer due to the expected *cooperation capability* due the resources available.

Some of the findings could be regarded either as organisation level or personal level dimensions, such as skills, cooperation capabilities, or comfortable to work with (coded as good guy). In the first place skills are possessed by individuals, but an organisation has to be able to combine the skills and knowledge of multiple individuals, and then it becomes an organisation level dimension. Accordingly, a single actor as an individual can be an easy person to work with, but co-operation can be either enabled and encouraged or hindered by an organisation, by for example, setting priorities in another way, in case the supplier is not willing to *invest in the relationship*.

As during the previous stage, uncertainties are reflected on the governing dimensions. Uncertainties reflect on all of the dimensions and components, and they include elements related to the solution, supplier, and also the buyer. The buyer is constantly cautious about whether he/she is doing the right thing and with the right supplier, and if the solution can be taken to the next level, the management.

Critical events

Table 26 sums up the critical events during the stage Feasibility Study & Research and Selection of Suppliers for Advice. As is evident, interactions governed the stage and critical events. The nature of changes during this stage is more incremental than radical, as the buyer has decided to conduct a certain step in the process, a feasibility study, and has somehow taken the decision to take the relationships at least until the end of the stage. It is possible that

some events can result in radical changes in the relationship, such as the inability to cooperate, but the probability of radical changes seemed lower than in the previous stage.

Table 26. Statistics on the change of critical events during the stage Feasibility Study & Research and Selection of Suppliers for Advice.

Type of incident	**Number of coded passages in data**	**Examples**	
		Positive	**Negative**
Incidents in interactions between supplier and buyer	7	- access to resources - showing lack of knowledge - showing honesty - showing professionalism	
Incidents related to supplier's way of working	4	- reacting to requests - doing best effort	- ignoring buyer's requests

Critical events during the stage arose from two groups of sources: firstly from the interactions between the supplier and the buyer, and secondly from the supplier's ways of working. Uncertainties on the buyer's side caused a very dynamic situation in which the requirements of the buyer varied a lot, and being able to adapt to the changes and show performance and best efforts was perceived very positively by the buyer. Adaptation signalled the existence of *customer orientation* and the supplier's will to *invest in the relationship*. On the personal level, showing honesty positively influenced on the professionalism perceived by the buyer and the attitude of how the buyer felt working with the supplier's individual actors, or in other words, if they were *good guys*.

During the stage the perception of the supplier by the buyer was based on joint cognition by the project group. The number of team members varied, but it was still around 10, and the buyer's actors worked as a group comprising actors from possible future users, Engineering, and the management.

5.2.2.3 Conclusions of the stage

This subchapter draws conclusions on the governing dimensions and underlying components of the supplier's position in the project marketing network. The conclusions include also identified critical events and the dimensions and components through which they influence the supplier's position in the project network. Figure 17 presents the conclusions.

Feasibility study/Research and Selection of Supplier for Advice is a solution and interaction oriented stage, and therefore the relationship and functional dimension were

central during it. All identified dimensions (relationship, identity, and personal supplier dimension) were derived from the joint effort by the parties to build a viable solution to the problem in hand. The experience dimension was missing. Experience can be reflected from the supplier's way of working and provide well engineered solutions, but compared with the previous stage, it was governing the cognition of the buyer. It can be concluded that there are significant differences compared with the framework presented in Subchapter 3.6., due to the non-existing role and experience dimensions.

Critical events capable of shaping the supplier's position were only related to the interactions between the parties. Events were equally arising from the organization level and personal level.

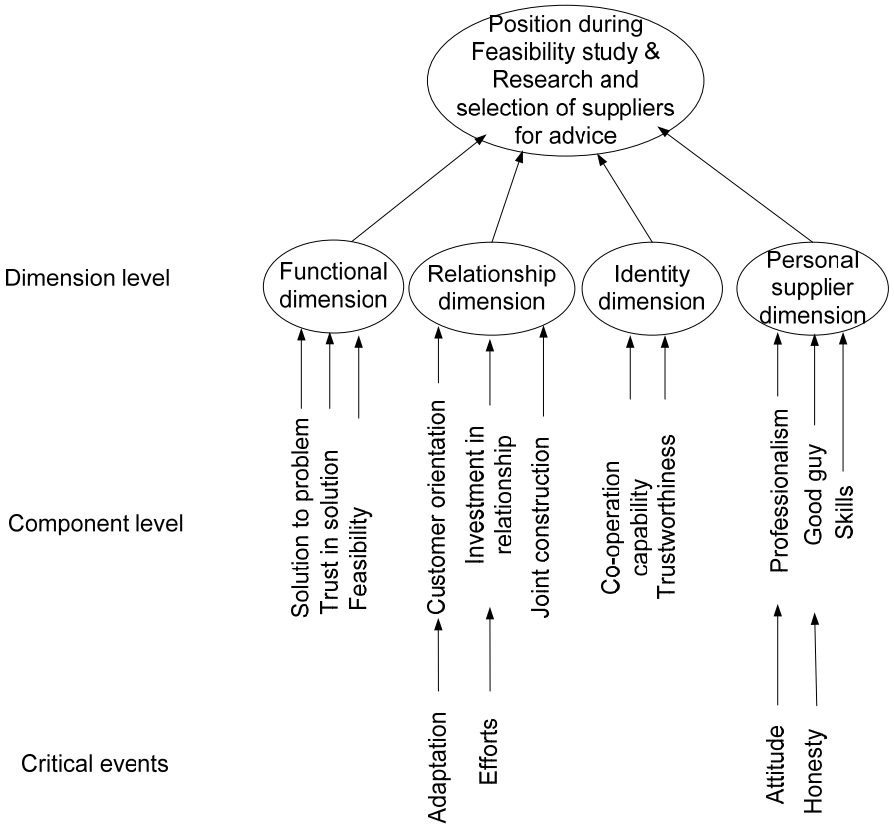

Figure 17. Supplier's position in a project network during the stage "Feasibility Study & Research and Selection of Suppliers for Advice".

5.2.3 Definition of specifications and compilation of terms and conditions

5.2.3.1 Description of the stage

Figure 18 shows the timeline and the major events during the stage Definition of Specifications and Compilation of Terms and Conditions.

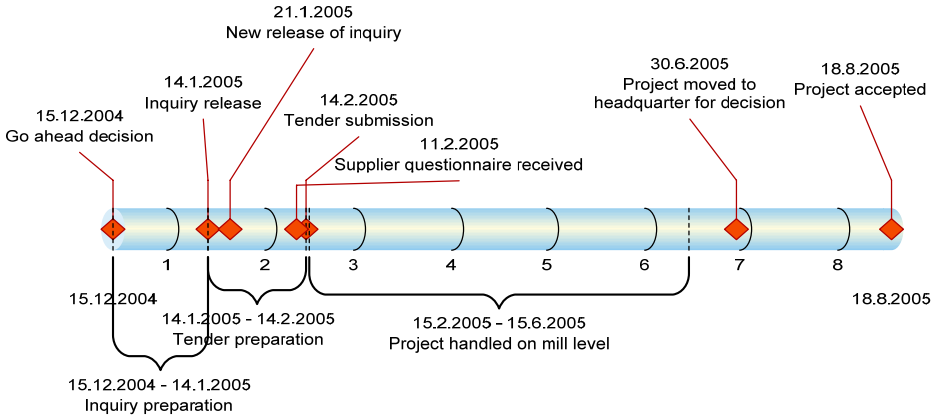

Figure 18. A timeline of the major events of the stage "Definitions of Specifications & Compilations of Terms and Conditions".

As soon as the feasibility study had been conducted the project was put forward by the management of the case company. In mid-December 2004 Engineering and Ini were given the task of preparing an official inquiry. The inquiry would be responded to with an official tender, and according to Ini's messages, the order placement needed to take place within a month from receiving the tender by the focal company. The preparation for the inquiry took longer than originally expected, as at the same time Ini was working on the project budget. Especially civil costs were causing concerns, and it was difficult to remain within the 10 M£ budget level for the whole project. In mid-January the first draft of the inquiry was submitted to the focal company, which then started preparing the tender. A week later a revised version of the inquiry was received. The case company also submitted a supplier questionnaire, which concentrated on the supplier's financial parameters, organisational matters (employees etc…) health and safety matters, quality system, and reference projects. Lux also received the inquiry and they submitted a tender, which was based on another type of high-bay concept.

The focal company prepared a tender including four stacker cranes, a conveyor system by the parent company, a computer control system, and the necessary engineering and project

management services. The total price of the tender was 5.5 M€ (3.75 M£). After the focal company had submitted the tender, a period started, which is not actually included in any of the process models. This period could well be named "waiting for go ahead and funds granted". The project was taken to the level of the board at the mill, but there was no decision made, and the feelings among the project group fluctuated between enthusiasm and desperation. There were at the same time several capital investments in the case company and the board hesitated in accepting the project. Most of the communication took place between Agent and Ini, there were only a few emails between Ini and the focal company, and there was nothing that the focal company could do. It was all up to the case company.

In June 2005 Dir got frustrated with the pace of the development of the project and he took the project decision to the corporation's headquarters. He wanted to receive a decision on the matter, and was pushing for the acceptance of the project. Finally on 18 August, 2005 the focal company received an email from Ini, which said that the project had been accepted, and funds had been granted.

Ini: *"Please note the announcement below - All systems go!*
What is your availability in the next few weeks to come to UK to talk over the project with a view to placing an order? Regards Ini"

Announcement by the case company on 18/08/2005 10:36
"To: Case Company Users
Subject: Case Company Profiles
Colleagues,
Today, the Case Company has announced that a £10 million investment is to be made at Case Company's Profiles. The investment, which is on top of the investments announced previously, will be used to build Europe's first automated sections distribution centre, and will help us improve both safety and product quality. The centre should be fully operational by autumn 2006.

5.2.3.2 Analysis of the stage

The inquiry stated clearly the objectives of the project and the basis of its feasibility assessment. The case company aimed to increase its market share by improving its service capability. External manual warehouses caused damage to products and excessive handling costs, and they could not provide adequate storage capacity and versatility in stocked items necessary for better customer service. Lead-time from order to customer delivery was too long (two weeks), and the alternative approaches to solving the problem were regarded as worse than the one proposed by the focal company.

Ini's struggle with the overall cost of the project was the governing matter of the stage.

The focal company was not the only one that had submitted a tender, but it was not a question about the focal company's part in the project, but instead it concerned the case company's own costs in the concept. The struggle continued and the situation seemed hazy. Purchasing did not value very highly the work done up to this point, while commenting on the results of the process. Ini was actually doing something that was normally done by purchasing. He was like the father of the project, and it was not appreciated by the ones he replaced.

Purch: *"It's the team that was working on the project weren't…necessarily up to the job and they didn't understand the technical constraints or demands of the project. They got a little bit lost, they was a little bit naive."*

The project team was working towards a target cost level, and at the same time the project was evaluated by the management of the case company. The outcome of the work seemed to lead to an acceptable outcome in April.

Agent on 15 April (after talking to Ini):*"The objective was to get to level 10 M£, and that level has now been reached by Ini. The project is now circulating in the case company on various steps."*

Only three weeks later the team was back at the starting point, as the cost had again climbed way over the acceptable level. Agent was communicating frequently with Ini and brought up the problem.

Agent on 9 May (after talking to Ini on 3 May)*: "Ini is still struggling with the high rack costs, which are in their own scope. He should get the costs down by 2 M£ in order to get to the target 10 M£."*

It seemed impossible for the project team to reach the target cost level, but in one of the discussions with Agent, Ini said that it might not be that important to reach the target cost level. Dir had decided to go ahead with the project even if the target level was unattainable. He seemed to have a personal motive as well.

Agent on 13 May (after talking to Ini): *"Ini has been able to trim down the rack price, but not to the target level. Ini said that Dir will press the decision to go ahead at whatever cost".*

This stage in the case was about getting approval for the investment, which was supposed to be based on the concept proposed by the focal company. The supplier was not

important at this point except as a provider of necessary data for decision making. Lux submitted also a tender, but their concept was different, and the feasibility not acceptable.

Manu: *"I remember, Lux put in a very high quote, because they got a different spec."*

At the end of June Ini left a message on Agent's voice mail. The board in the case company had started showing doubts concerning the project for Profiles, as there were already positive decisions made and capital investments accepted in the case company. Dir moved the decision to the general manager of the corporation, as he was keen on the advantages achievable with the project. Thus Dir had a personal motive in pursuing, from the case company's perspective, the acceptance. On the other hand, Dir was also very much in the position to propel the project forward for other reasons as well. He was convinced about the solution and the advantages provided, and thus Dir had taken the project to the local management. The decision was never made there, and from Dir's perspective, allowing the project to die down, could have had an influence on his future position in the case company.

Table 27 sums up the coding of the stage. A detailed coding summary is given in Appendix 5.

Table 27. Distribution of coded passages in the stage Definition of Specifications and Compilation of Terms and Conditions.

Dimension	Components	Number of coded passages
Functional dimension	Solution to problem Trust in solution Feasibility	11
Personal level factors	Personal motives	5

The feasibility study had resulted in a solution that could provide a means for meeting the challenges of the case company by solving the problems they had at Profiles. The stage "Definition of Specifications and Compilations of Terms and Conditions" was almost entirely governed by the *functional dimension*, and especially one of the components of the dimension, *feasibility*, that controlled the activities of the case company in the process. *Feasibility* was defined through the total cost level that had been set as the target value for the project.

There were two parts to the *feasibility* components due to the nature of the project: firstly the supplier's scope of delivery, and secondly the buyer's scope of delivery. The

supplier remained rather passive during the stage, and after the tender had been submitted, the tender was not touched or processed further. The costs of the supplier's scope were not questioned, and especially considering the competing tenders were more expensive, the supplier's position in this respect looked promising. On the other hand, the other part, the buyer's scope of supply, was evaluated and worked on during almost the whole stage, as the total cost of the project was higher than the target value. There were no doubts that the *solution to the problem* would not meet the objectives or that the actors involved would not have trust in the solution, as otherwise it would not have been taken further into the acceptance process. Costs caused the *functional position* of the supplier to worsen. The problems were related to the steel structures quoted by suppliers of other equipment, and their nature was radical, as they could jeopardise the project and the focal company's business opportunity i.e. position in the project network. A powerful source of change was the competition with a much higher tender, but in that case the change from the focal company's perspective was positive.

This stage also brought up in a very concrete way one of the problems in the position concept, namely the question of *"whose perception of positions matters"*? Dir had decided to take the project further for the management to make a decision on it, and so at that point it was his perception that governed. Dir could not push the project further on the case company level. Thus, the interpretation of position moved from Dir to the board of directors in the case company, which was reluctant to accept the capital investment project, as they did not see the justification for the project going ahead. Hence, the *functional position* of the focal company was not perceived strong enough by the board holding the mandatory positioning power at that moment. Dir took back the power and moved the decision to the highest level, and he was able convince the general manager that shared his perception, or delegated the decision making to Dir, who seemed to have a *personal motive* in pursuing the project decision, and respectively the *buyer personal dimension* was strong. In Ini's eyes in August, when the project was accepted, the position of the focal company was high, as he was judging it on the quick order placement. In that respect the focal company's position was as high as could possibly be.

Critical events

The present stage was completely different from the previous ones as there were practically no face-to-face interactions. The buyer was preparing the documents required by

their internal procedures and the supplier's role was to only supply any required information for the process. There were no critical events.

5.2.3.3 Conclusions of the stage

This subchapter draws conclusions regarding the governing dimensions and underlying components of the supplier's position in the project marketing network. Figure 19 presents the conclusions.

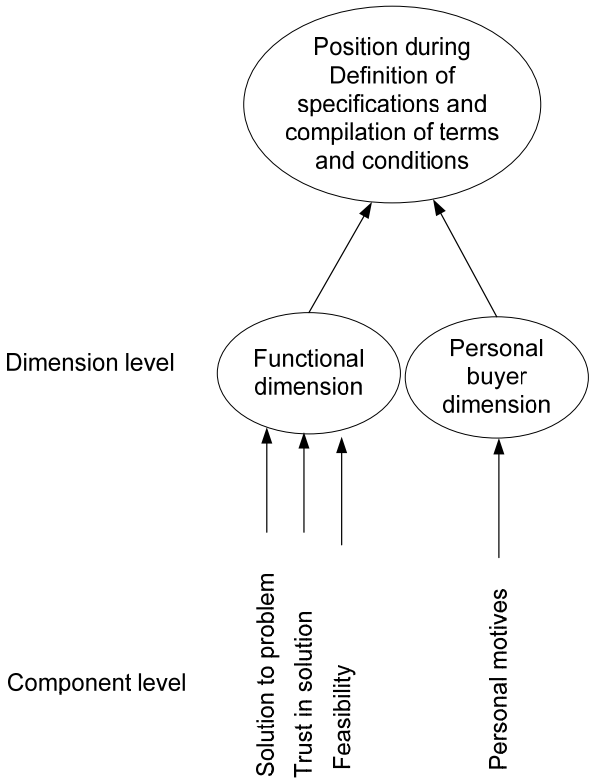

Figure 19. Supplier's position in a project network during the stage "Definition of Specifications and Compilations of Terms and Conditions".

This stage is governed by the solution, i.e. the functional dimension, and the buyer's personal motives to promote the project. All other elements of position are secondary at this point.

5.2.4 Setting up the bidding list and invitation to tender and information exchange

5.2.4.1 Description of the stage

This stage is again a combination of stages presented in Stage Dimension framework. The reason for combining the stages in a single stage in the present study is that the two separate stages in the research framework were not clearly identifiable in the data, as they were embedded and took place concurrently. Information exchange was continuous between the focal company and the case company during the whole stage. The case did not have to create a separate bidding list, as the number of companies tendering was the same as before, three altogether. One of the companies was the focal company, the second was Lux, and the third, or at least in theory, was Ger, but their position was not considered viable. The combined stage started immediately after the project had been accepted in August 2005 and continued until early November, when a new tender was submitted by the focal company. This period of time can be considered as being very interactive with the design of the project going into a detailed level. Another distinctive feature of the stage was the changes in the buyer network, including a new project manager, specialists in different fields, and the involvement of the purchasing function of the case company. A timeline of the stage with main events is presented in Figure 20.

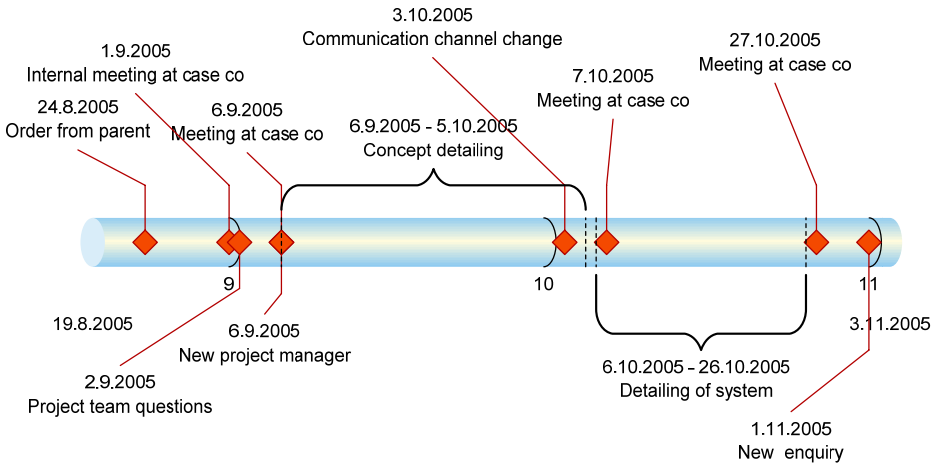

Figure 20. Time line of combined stages: "Setting Up the Bidding List and Invitation to Tender and Information Exchange".

After the acceptance the project went into a detailed analysis of the technical and functional parameters. The case company focused on racking and user specification, which defined the operation of the project. The focal company provided data on various fields concerning the layout of the system, and the operation of the equipment in the supplier's scope, together with the rack and activities that come both before and after the system.

There was a new project team founded in the case company and the team started becoming familiar with the project. The team had an internal meeting on 1 September and thereafter 70 questions about the project were sent to the focal company, and some days later a joint meeting was arranged between the focal company and the team. On 6 September the new project manager (Proj) was introduced in the meeting, and there were also other important actors that took part in the meeting, namely Purch representing purchasing in the case company, and a specialist on electrification (El) and device control systems. The whole team in the meeting consisted of 13 persons. The focal company was represented by the marketing director, Agent, and the marketing and sales staff from the parent company. The agenda of the meeting included mainly technical matters related to the system as a whole, but also to technical details. The meeting on 6 September was also the opening of the commercial discussions between the case company and the focal company.

After the meeting, detailed analysis and design of the features of the system continued, and there was a lot of communication between the parties. The party through which communication was made in the case company shifted rather quickly after the first meeting, from Ini to Proj. There was still, however, some direct communication with Ini, but in early October, Proj sent a message that all communication concerning the project should be directed to him. On 7 October there was another meeting between the parties, in which detailing of the project went on. New elements, in addition to technical and commercial matters in the agenda, were discussions regarding its systems, the users' requirement specification, and safety aspects. One matter that required a lot of discussion was the interface between the case company's scope and the focal company's scope, the interplay between the rack and the stacker cranes. The focal company was represented by Agent, sales director, the eventual project manager, and the head of computer systems in the focal company. The parent company was represented by the Director of Projects. Most of the communication after this meeting was between Proj and the sales director, but the focal company's project manager also took part in the technical discussion.

After three weeks intensive detailing of the project there was another meeting between

the case company and the focal company. The agenda of the meeting proceeded much as the previous ones, but the percentage of non-technical matters increased, and included health and safety approval, performance guarantees, and reviewing of the tender submitted by the focal company in February 2005. In the technical discussion two items governed the meeting: user requirement specification and the influence of stacker cranes on the racking design. The project schedules at the beginning of November expected the placement of the order to take place between 11 November and 23 December.

At the end of the stage a new enquiry was sent by the case company, and the focal company responded with an updated tender. The tender was worth 3.9 M€, and the parent company's scope was not included, but it was later separately submitted to the case company.

5.2.4.2 Analysis of the stage

From the perspective of the focal company the project started with high hopes, as can be seen from Ini's message concerning the acceptance of the project and the granting of the funds. Ini was preparing the order placement for the focal company. A meeting was planned for early September, and one of the subjects in the agenda was the presentation of the new project manager Proj and new project team members.

Ini: *"As you may already be aware the above scheme has now been approved and it is all systems go to get it started. You are invited to attend a meeting on Tuesday 6 September 2005 at our works in the Engineering building (where my office is) to discuss your offer. There are many new faces now involved with this project so we would be grateful if you could give a small presentation demonstrating how the project will work - similar to the one you gave to the Profiles engineers. Proj will be the Contract Manager for the project and will be at the meeting. We are having a meeting next Thursday with the full team to discuss your tender and will compile some questions, which I cannot answer, for you to answer on Tuesday - I will forward these prior to the meeting..."*

The new team members were not satisfied with the quality of the work carried out by the previous members. Dissatisfaction focused on feasibility and procedural matters. Especially, the purchasing function in the case company saw numerous deficiencies in the process.

Purch*: "When I asked the question, have we done any evaluation the focal company versus the competitor, we haven't done a full technical, commercial, or financial evaluation, so I said, let's stop the train, let's stop what we are doing and let's do some further evaluations on the capabilities etc..., and the price structure of both companies.*

There was also another kind of problem related to the preparatory work during the earlier stages of the process. The total cost of the project exceeding the accepted budget, and the gap between the estimated and allowed costs was significant.

***Proj**: "The layout for the system wasn't including the size of the building, wasn't actually aligned with the cost estimates, cost scheme. For example the layout, which one you look at, potentially costing probably 15 million pounds with the gear and there is a budget only 10 million pounds."*

The first meeting with the new project team was to technically become familiar with the solution and its technical details. The project team had prepared a list of 70 questions, and the split between different areas is shown below in Table 28.

Table 28. Subjects discussed with the new project team in the first meeting.

Area	**Number of questions**	**Focus**
General/layout	5	Errors related to bundles, expandability of system, h & s
Electrical/controls	24	Computer control issues, standards, components to be used
Conveyors/mechanical	24	Steadiness of conveyor structures, safety issues
General	17	Safety, roles in supplier network, support at the end of project, intended labour for erection, compliance with local h & s practices

There were especially doubts concerning the suitability of the conveyor system by the parent company, so the case company ordered some conveyor sections for testing purposes. Generally, the questions discussed, indicated serious concerns related to the proposed solution and its technical details. These concerns were partly due to not being familiar with automated systems, which on the other hand was surprising, as there was just one such system completed in the mill. Health and safety issues were more directed towards the focal company and its knowledge of local safety procedures.

Commercial matters were also touched upon in the first meeting with Purch. A 30 minute session focused on what kind of discount could be given. Agent's diary states briefly:

***Agent (6.9.2005)**: "Purch 2:30-3:00. Discount."*

There was no real discussion conducted, as it was not normally the starting point of a project marketing process for the focal company, and they considered the opening, if not quite a joke, close to being one. The supplier network seemed to be totally unaware of the practices

in the case company, even though the parent company had conducted business with them.

Purch: *"I'm trying to think of...not heated but focused on price negotiations, where we aim to meet the project criteria and the best price, which is based on the budget but the competitive situation as well. So we get very focused on price in those negotiations."*

From the case company's perspective, the refusal to discuss the possibilities of a discount in the first meeting was not perceived positively by Purch, who represented the authority in commercial matters in capital investment projects. Purch often referred to barriers, which was a synonym for not being willing to adjust and seek a consensus so as to commence business with the case company. The focal company and especially the marketing director created a rather high barrier between the parties. The first meeting was discussed several times in the focal company, and the marketing director even proposed that possibly he should not be representing the focal company, in case Purch were to participate in future meetings.

Purch: *"I look after things like, are they barriers, does the supplier put a barrier to (venture's) way, is he putting barriers in a way of everything that is raised, or is he trying to become too defensive commercially early on in the negotiations."*

In addition to the barriers corporate purchasing was interested in a number of other factors related to the supplier financially, the breadth of the organisation including its ownership structure, relationship history, references, understanding of the requirements, and health and safety track record. The weight factor of the criteria was after a small hesitation clear.

Purch*: "They would pretty much in the weighting perspective nearly all be equal, because health and safety is very critical to this company because of its history. Probably the most heavily weighted one would be technical understanding, capability and price."*

At the case company, references were specifically brought up by referring to Lux's project. The project had just been completed, but there were different views about how successful it had been. It seemed that there had been problems, but Lux had managed to solve them, and at the end it could be regarded as being a good reference project. On the corporate level, practical project level problems were ignored and the outcome of the project was appreciated.

Purch: *"They had just finished the project on the site. And that had been completed very well."*

Those, who were closer to the project, had experienced the problems and felt the success of the project different from those at the corporate level. However, the perception at the end was positive despite all the problems.

Ele*: "The only thing, knowledge that influences the decision as far as I can see, was that we had a comment from the people down there that a lot of things went wrong but the company didn't try to walk out from any of them."*

The process continued by carrying out detailed designs and modifications to the solutions. The case company was looking to achieve the accepted level in the costs, by especially detailing the interface between the rack and stacker cranes, and also by getting the users involved in the process. As there were a lot of changes in the solution, a new tender would be needed, but October was still too early for that, due to the continuous changes in the requirements.

The accepted budget of the project was 5 M£ lower than the estimated costs, consequently much of the work during the stage was aimed at achieving the accepted cost level. The overall cost could be influenced via rack and conveyor costs, but the stacker cranes had to remain on the level proposed. Otherwise, there was no sense in performing the project, as fewer cranes could handle the production and shipping requirements. Hence, capacity was one of the main themes discussed.

Manu: *"Because that was my criteria for this, and it was very much in the evaluation stage, that is how much I am going to get in, how long is it going to be."*

The capacity was an outcome of the space used, or in Manu's words depended on the "*length of the system"*. Another factor influencing the capacity was the interface between the stacker cranes and the rack structures. It concerned the engineering of the cranes: the operational dimensions, required tolerances between different parts of the system, and also the intelligence of the machines and computer control system for locating the bundles in the rack. The case company provided with more detailed information on the requirements on the system, its functions and products to be handled.

The problem from the perspective of the focal company was that since the initial stages, where the proposed solution was constructed, design engineers had had limited involvement in the project and in assessing its weaknesses. Increased cautiousness became visible due to

the higher wasted space within the system, by increasing the size of the stacker crane structures and operational tolerances within the system. All these precautions decreased the capacity of the system, which was already becoming an issue due to the shortages in the budget. There were several internal meetings in the focal company, which not only concerned the operational dimensions of the stacker cranes, but also the design engineers claimed that the original dimensions would be too risky. There was pressure to change the design of the stacker crane towards one with a worse space utilisation, and at the same time shift the focal company's functional position in a less favorable direction.

The layout matters were also handled and the supplier network gained some complaints from the project team of the case company.

Ini: *"And it seemed to me parent company had taken over, they were the senior company, and the quotes then were coming back from parent, it did seem to change a little bit in the quality of the answers we were getting back. You know the speed and fact that suddenly this seemed to change, I suppose but seems, when parent came in, it started to go downhill a bit."*

Another element in the supplier network was the lack of integrity compared with the competitors. Earlier the focal company had offered the whole scope, but now the parent company submitted its scope directly to the case company, and they also communicated with the project team.

Proj*: "It was talking to two parties, and the case company was integrating, whereas Lux and the Ger people we met was one, talking with one party."*

Evaluation of the tendered system was conducted at the engineering level. There were doubts about the design of the conveyors tendered for the project, as was already indicated in the list of questions posed to the supplier network, as in the steel industry heavy design is preferred. Robustness of engineering was preferred by the project team, and they themselves even used the phrase over-engineering with regards to the preferred way of designing machines for the steel industry.

There was another project meeting and the matters handled were much the same as in the first one with the new project team. The most important issues related to the racking design progress, operational user requirement specification, and preliminary hazard analysis. The supplier network was represented by Agent, the marketing director, the head of software design, the eventual project manager, and the sales director of the parent company. The case

company was represented by 13 members of the project team, but based on the focal company's request no commercial matters were discussed until a new tender was submitted.

Much of the solution-oriented focus on the side of the case company was aimed at performance and especially the capacity of the solution. Engineering quality and competence were assessed against the competing suppliers. The going into details and specific design features were the means by which to either gain or lose confidence in the engineering quality of the suppliers, supplier, and supplier's support after the project.

***Ini**: "Once again at this stage. It's cost, not just the cost to build, it's the cost of future works to manage, expansions, everything. And, in particular obviously quality of the equipment that we are going to get. How confident we are with your building to be delivered, and the supporting after that. We need to be fully confident with all of the aspects."*

The cost of the project was a very painful subject in October, due to the expected cost being higher than the accepted budget, or at least it was presented as such. As was already mentioned, the cost was especially important to Purch, with this being a shared view in the prevailing circumstances.

***Manu**: "And how much is it going to cost, because Proj was worried about how much it is going to cost, because he was making sure to keep it within budget."*

Another challenge for the project team, besides the cost of the project, was ensuring that the project was delivered according to the schedule, which was based on the feasibility study and the objectives of the whole project. The case company was planning to complete the project by the end of 2006, and that was the deadline set for all three suppliers tendering for the project. Ger, a very well known supplier in the steel industry, was one of the three companies tendering for the project in the autumn of 2005. They were, however, removed from the list of suppliers, due to not being able to get even close to the requirements of the case company.

***Proj:** "We didn't discuss too much with Ger, because they fell fairly early on with on two camps cost, cost and delivery. They were committed elsewhere and I don't think we could have actually got this up and rolling actually until back in next year or something."*

The current stage was active and interactive. The technical detailing together with very dynamic requirements pushed the remaining suppliers to their limits. The constantly changing basis of the requirements was also a burden to some of the engineering people of the case

company, and caused some frictions between project team members.

Ini: *"And I think, coming back to all changes that were happening then, because I am not saying it was an easy process to anyone, because the mill was notoriously changing their mind."*

Frequent interactions and the suppliers' actions were a natural monitoring system by which the buyer could constantly assess the suppliers and compare them. Responses to various requests for information and clarifications were analysed and discussed among project team members. The focal company was no longer acting on a single person basis, and instead it tried to keep its supplier network in one cohesive unit against a competitor with all resources in-house. The project team members commented on changes in the ways of working in the focal company and its supplier network. Investment in the relationship was not on the same level as earlier.

Dir: *"Others [project team members] felt that we are getting more information from Lux than the focal company to answer the questions, that Lux were coming back and answering going into detail, where as the focal company weren't giving sufficient detail to actually answer some of the questions some of the people in the team were asking, and from standings still Lux were getting into the detail of that and that moment of time and, because they were going through these fairly fresh but put a lot of efforts at that key point in time."*

A lot of the interactions dealt with the interface between the stacker cranes and the rack by the case company. The interface was vital with regards the operation of the system, and it caused a lot of concerns in the project team. The concerns together with the focal company's failure to respond as quickly and thoroughly as Lux reflected on the perception on the focal company by the project team.

Proj*: "It was technically the only area that we never did got acquainted on degree of confidence, what we would have liked, was the interface with the building. That was a major concern and you know we felt ourselves shareholder in terms of actually a black box technology, anyone of you could have done it. Big steps, again actually cranes operating in our facility, which was a major concern to me. "*

From the perspective of the focal company the marketing director was supposed to control the flow of information to the case company, but there was also a lot of direct communication between individual actors, which by-passed the marketing director. He, however, was able to detect a kind of hesitation among the designers in responding to

questions of the project team members. In internal meetings at the focal company the hesitation regarded the presumed high risks of the solution. The hesitation became visible also to the case company actors, and they discussed the matter in their own project team meetings. It was also reported to the management of the case company.

***Dir**: "And there appeared to be a chasing going on backwards and forwards to get the answers, and obviously Proj and others in the team were saying the focal company should have had a lot of time to get this information compared with Lux which had the answers ready and available."*

The failure to respond quickly enough and in adequate detail, according to the perception of the buyer, alludes to a lower commitment with regards to developing the relationship and investing in it. The supplier did not strive towards making the project a success as well as it could have, or as the competitor was. Dissatisfaction in the quality of engineering was also a sign of professional weaknesses.

***Manu**: "There is the knowledge that you've got, because the knowledge gives you confidence, we are on the right track, and when we went into the details there you need to be strong enough to check what we are saying, because we're asking for things."*

In face to face interactions and in written communication there were a lot factors related directly to individual actors, either on the suppliers' or buyer's side. Only one of the six informants denied definitively that personal level, personal relationships, or personal motives or perspectives influence the comparison of the suppliers: Ini strongly argued that only hard facts are the basis for comparisons.

The first major event concerning individual actors was the changes in the project team of the case company. There was a new project manager, Proj and Ini's positions were changed to that of rank-and-file members in the team. Ties between actors, which developed during the earlier stages of the project, were partly obsolete because the weight of the existing relationships changed due to position changes in the project team. New structures were reflected also in the internal relationships of the project team.

***Dir**: "I think there was [incidents]...initially there was a bit of view that obviously with sort of...Proj coming in etc...his relationship with Lux developed, because he was new coming in, where as the originals had been with the focal company, so there was a bit of a conflict in the meeting with regards to some of the relationships been dropped with the focal company, and Lux with the new team, old team, if you like."*

The periods of interaction provided possibilities for the new project team members to form their perceptions about the suppliers and the people they should work with in the future. Almost all of the informants confirmed the significance of the weight of the personal perceptions in the supplier assessment process. The weight of the personal views varied, but had biggest influence, when suppliers were evaluated to be very close to each other.

***Proj**: "But I guess if there is a product and a product and you know, then almost identical in offering, then you have going to say, well, what are the other influencing factors in the decision making."*

On the other hand, other members of the project team considered the weight of the personal views in the project team to be more significant than Proj. Even Ini, who himself based his perceptions on hard facts, confirmed that there were personal views involved in the assessment. The team tended to discuss and exchange views on their perceptions of the suppliers' individual actors internally. There was a common feeling with regards the influence of the suppliers' individuals on perception on the supplier as a whole.

***Ele**: "That's really a group feel. We obviously talk about these things outside the meetings as a group, and the consensus of the tone, appears as competent of doing work. What that is based on, is basically a sum of everyone's feelings about the individuals that you've met, and things they have said during the various meetings. Fairly intangible most of it but it's a group feeling and we obviously score that, when we do the comparison. Feel good factor, various other factors, which are fairly intangible but scored as a group may well influence one way or the other."*

The formation of the group view starts developing in the interactions, and even first impressions and the very first occasions were said to an essential part of the view.

***Ele:** "And the first one is probably the most important because that's your initial meeting. Might be argued that could be by-passed in the later discussions but I still think that the first meeting is quite important, and that tends to set the scene for the later ones."*

The competences of the suppliers' individual actors that are essential for the project team members were manifold, but can in sum be split into two main groups: technical competences and ability to express technical matters fluently and in a trustworthy manner. An unreliable and incompetent individual actor can be described with a single term - salesman.

***Ele**: "You tend to form an opinion by talking to the frontline people you meet: Are they*

technically competent? Are they just salesmen? Are they both? Do they come across well? Have they done this work before? And you form a personal opinion. It's about whether you think they are suitable to do the job."

Ele was not alone with his terminology and classification of suppliers' individual actors, as similar expressions were used by others as well.

***Manu**: "At that stage, I don't think that you are simply among a bunch of salesmen who are just trying to sell you something. It's more let's get this done and where are we at."*

Table 29 sums up the coding of the stage Setting Up the Bidding List, Invitations to Tender and Information Exchange. A detailed coding summary is presented in Appendix 5.

Table 29. Distribution of coded passages in the stage Setting Up the Bidding List, Invitations to Tender and Information Exchange.

Dimension	Components	Number of coded passages
Functional position	Confidence in supply Detailed solution Competence as supplier Delivery time Feasibility	70
Relationship	Commitment Investment in relationship Customer orientation Relationship history	65
Personal level factors	Personal scoring Personal position Professionalism Individual actor personality	43
Buyer network		26
Comparison		15
Supplier network		7
Identity	Values Trustworthiness as supplier	5
Experience		3

The stage was active and the main focus was on developing a solution, which would be within the budget, and would provide the highest possible storage capacity. Hence, the *functional position* was governing the process, and especially the interface solution between the stacker cranes and the rack. The interface had direct influence on storage capacity and space utilisation in the system. Competences in engineering and providing solutions better than those of the competitors' were a key to the favourable *functional position*. Engineering was challenging, because the mill was changing its requirement frequently, and the suppliers had to respond to the changes quickly, and provide a *detailed solution*. The stage was active

and hectic and consequently the turnaround time for responding to requests by the project team had to be minimal, but still the quality of the responses had to be of an adequate level. The buyer compared the suppliers based on the interaction process and evaluated *competences as supplier* and also *confidence in the supply* by the suppliers.

The *relationship dimension* had also a significant role during the stage. When the new project manager and the new project team were introduced, the advantages that existed during the previous stages related to personal motives lost their weight, and the relationship building with the new project manager and team members had to start from the beginning. A new element in the environment was also introduced when the new project team members also involved two competitors to tender for the project, and one of them had a *relationship history* with the buyer. *Commitment* of the supplier was measured with willingness to adjust to changes and relieve any barriers between the parties. From the buyer's perspective *investment in the relationship* was weighted against allocated resources, and also how the supplier network worked as a cohesive unit. *Customer orientation* depended on how the suppliers were able to identify the buyer's priorities and act accordingly.

The *Identity dimension* was not very significant during the stage. Involvement of corporate purchasing in the process resulted in interest in the financial structure and stability of the suppliers, which represented *trustworthiness as supplier*, but the main focus was still on the technical matters. That is easy to accept, as technically and conceptually there were so many open points in the project, and the majority of the interactions dealt with engineering matters. There was, however, one new element in the discussion, and that was the importance of health and safety issues, and the perception of them by suppliers, which reflected the *values* of the supplier.

There were several occasions for face-to-face interactions between the focal company and the project team. There were two types of personal level dimensions present, firstly related to the *supplier*, and secondly to the *buyer*. The *supplier dimension* was composed of the *professional skills* of individual actors, and also of their *personality*, and especially from their ways of working, expressing themselves, and cooperating with the project team. Any incidents that made the project team feel either bad or good to work with individual actors changed the *personal supplier dimension*. The project team discussed a lot about this subject, and that gives the reason to believe that it was important, and was able to generate quick changes.

The second aspect of personal level matters was the *personal buyer dimension* including

the components *personal scoring* and *personal position*. *Personal scoring* describes how much personal ambitions and objectives of an individual actor influence on the assessment process of competing suppliers. The opposite of personal scoring could perhaps be named "hard facts scoring". Another component in the personal buyer position is *personal position*, which describes how the individual actors in the project team are positioned, and what kind of motives they have for acting in certain ways. The influence of this component was easiest to detect with Purch, who wanted to halt the process and involve the competition of the focal company. Purch admitted that he is price oriented, with the possibility for comparison between suppliers not being possible without competition. Purch also wanted to point out that until his involvement the process had not followed acceptable steps, and he was the one that put it on the right track.

The current stage was based on a collective perception of the buyer by the project team, even though the team included some strong individual actors. Still, the stage was technically and engineering oriented and required actors to have expertise in different areas to collectively assess the suppliers.

Critical events

Table 30 sums up the critical events during the stage and their types.

Table 30. Statistics on sources of change in supplier's position during the stage "Setting Up the Bidding List, Invitation to Tender and Information Exchange".

Type of incident	**Number of coded passages in data**	**Examples**	
		Positive	**Negative**
Incidents related to supplier's way of working	15	-	- ignoring buyer's requests - response time to requests - investment in project - quality of work
Incidents related to network structure	15	-	- roles in supplier network - coherence of supplier network - quality of work in supplier network - changes in buyer network - introduction of competition - change in competition
Incidents in interactions between	8	- feel good factors	- feel good factors

supplier and buyer		- personal competences	- reluctance to adjust
Incidents related to changes in buyer's requirements	5	- surprises in costs - dynamism in requirement specifications	
Incidents related to conflicts in buying network	4	-	- quality and coverage of work - variation in preferences
Incidents related to solutions proposed	3	- unacceptable solution by competition	- changes in performance

A high level of interaction provided the possibilities for critical events to take place, when detailed engineering of the solution was carried out. There were events related directly to the interactions between the suppliers and the buyer, such as having good feelings to work with the other party, but also the opposite was true, when it felt more comfortable to work with another supplier. The competence of the supplier in certain situations was regarded as a positive critical event, whereas reluctance to adjust to a buyer's dynamic requests was seen as a negative critical event.

The current stage had numerous negative critical events, which originated from the supplier's ways of working. Such events included e.g. ignoring buyer's requests, delayed responses to requests, not showing willingness to invest in the process, and lower quality of work than expected. The supplier network generated also critical events, which from the perspective of the focal company unfortunately were all negative. The roles of the members of the supplier network were not clear, and the network was not acting like a cohesive unit. Also the quality of work by the supplier network was not appreciated. One very significant critical event in the network structure was the active introduction of competition, which came mainly from Lux but in the beginning of the stage also from Ger.

There were critical events, which were initiated from and by the buyer network, such as changes in the network structure due to a new project team, continuously changing specifications, and clear conflicts within the project team. During the stage there were a lot of critical events compared with earlier stages.

A completely new class of events appeared and it was related to the network structure. First of all, the competitive situation changed. In addition to that also the buyer network changed, when the new project team was introduced. The supplier network also changed its way of working, and the influence due to the changes was not positive for the buyer. The supplier's or supplier network's ways of working generated negative critical events, when the responses to requests were delayed, or requests were totally ignored, the quality of work was not adequate, and the buyer felt that the supplier was not investing in the project. There were

also problems in the interactions, as the buyer perceived the supplier's actions being due to reluctance and not customer oriented.

The buyer's internal conflicts and ways of working challenged the supplier and required efforts to keep up with the changes. There were also events related to the solutions proposed. The supplier's uncertainties concerning the solution created an event, which significantly decreased the buyer's confidence in the supplier's solution and competence. The project team also perceived that the supplier network of the focal company would perform worse than the focal company's competitors which had all resources in-house. The team connected the discrepancy with the presence of the parent company in the supplier network, and that in turn influenced negatively on competence as supplier. During the earlier stages all interactions were handled by the focal company but now, the parent company communicated directly with the case company.

This subchapter presented the results of the analysis of the combined stage "Setting up the Bidding List and Invitation to Tender and Information Exchange". In the next subchapter conclusions are drawn from the findings.

5.2.4.3 Conclusions of the stage

This subchapter draws conclusions on the governing dimensions and underlying components of the supplier's position construct in the project marketing network. The conclusions include critical events influencing the buyer's perception of the supplier. Figure 21 below presents the conclusions.

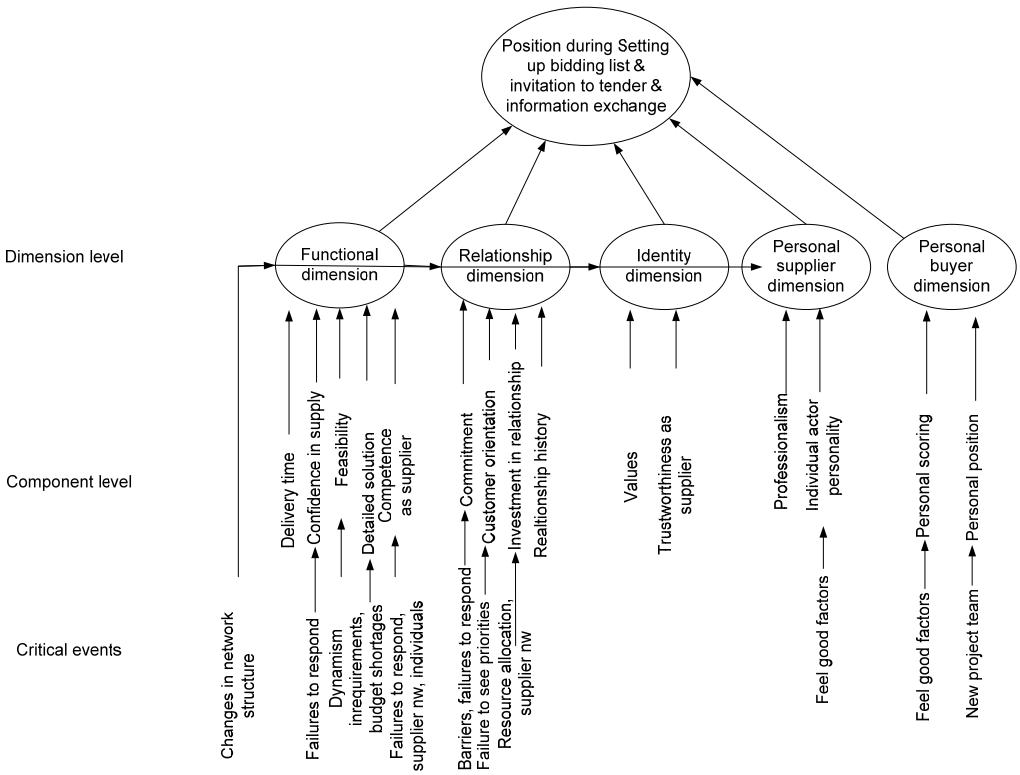

Figure 21. Supplier's position in a project network during the stage "Setting up the bidding list & invitation to tender & information exchange".

The stage was governed by three main dimensions: functional, relationship and personal. The three were connected in such a way that the stage mostly concerned the solution, but in order to detail the solution plenty of interactions were needed, which respectively brought up the relationship dimension together with the personal dimensions. The detailed solution formed the core of the functional position, but the feasibility of the solution and the implementation aspects both from the perspective of the supplier and solution perspective are important. The supplier cannot develop the solution alone. Cooperation at the organisational level and between individuals is vital, and it is reflected in the relationship dimension and personal supplier and buyer dimensions. For the first time during the process the earlier business relationships of the buyer started influencing the perceptions of the buyer. The positioning of the members in the buyer network influenced the process especially after the displacement of the old project team and project manager.

From the critical events perspective the stage was active and can be regarded as active.

Interaction and the supplier's ways of working generated several critical events, but compared with the earlier stages, from the focal company's perspective a lot of them were negative, making the focal company's position worse. What was significant during the stage was the influence of the changes in the project network structure. Again, from the focal company perspective all of the reported critical events caused a negative impact on the focal company's position.

5.2.5 Negotiation

5.2.5.1 Description of the stage

The time line of Figure 22 shows the major events during the stage.

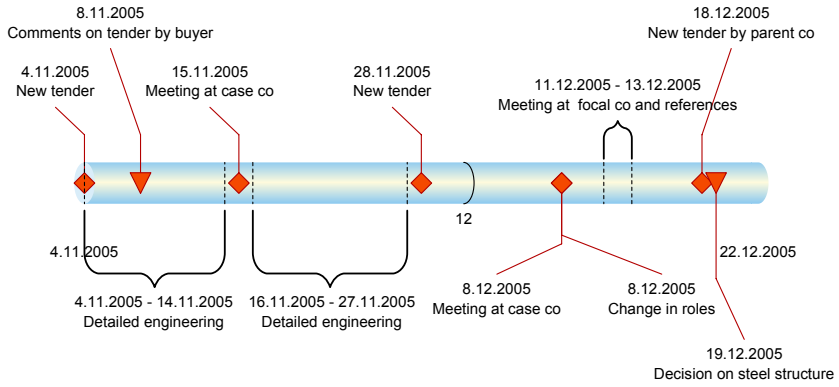

Figure 22. Time line of the stage Negotiation.

The current stage *Negotiation* started in early November 2005, when a new tender was submitted to the buyer. As earlier, the parent company submitted its part of the tender directly to the buyer. The total value of the tender was 5.8 M€ of which the focal company's part was two-thirds. The updated tender was technically following the requests of the focal company's designers to reserve more space for tolerances and machines, and as a consequence of that, the effective working area and storage capacity were reduced. Even though there had been a lot of detailed engineering during earlier stages the work continued, or actually went through a very intensive mode. The racking design was making progress concurrently with other parts of the project, and in order to keep schedules under control the project team had to complete rack design. The design was needed so as to make enquiries to potential steel structure suppliers. The project team had run a comparison between tolerances for structures proposed by the focal company against a UK standard, and had already asked for comments concerning

differences in requirements between practises.

There was another meeting arranged in mid-November, and the focal company was represented by the marketing director, agent, eventual project manager, head of mechanical design, and sales manager of the parent company. The agenda of the meeting included tender, user requirements specification, engineering matters, and commercial discussion.

After the meeting and discussions, a one to two week detailing period was taken in order prepare a new tender. Engineering focused on the interface between stacker cranes and rack, but also the system layout needed some changes to be incorporated. The project team wanted to see their standards and practises taken into account in the tender to be sure that the supplier understood their requirements and needs.

A new tender was submitted on 28 November, and it was the first one in which the parent company's part was included in the scope of the tender. The value of the tender was 5.7 M€ and the division between the focal company and the parent company was like in the previous tender. Also, from the operational perspective, the tender followed the previous one, and the interface between the stacker cranes and the steel structures had not been changed, which still resulted in lower storage capacity than in the original specifications during the feasibility stage. After the tender submission, the engineering discussion continued, and the case company was preparing to place the order for the foundation building.

On 8 December there was another meeting at the case company, and this time it was mainly commercial. The case company was presented by Proj and Purch, and the focal company by the marketing director, Agent, managing director of the focal company, and the sales manager of the parent company. The meeting was significant in the respect that Purch requested that the focal company and the parent company should change their roles, and from now on the parent company should be responsible for the tender and the project. The sales manager of the parent company became responsible for the final tender, and this was a problem, as he was going to leave the company in January.

A new 2-day meeting was planned for the following week, and it was to be held at the focal company. The first day of the meeting would be used to visit the same references as at the beginning of the process, and the second day to close the engineering discussion of the project. The case company was represented by Proj, Manu, another production person, Ele, and the structural designer from Engineering. The focal company was represented by the marketing director, Agent, eventual project manager, head of mechanical design, head of electrical design, and head of control systems. The sales manager and sales director of the

parent company also took part in the meeting.

After the meeting a final tender was prepared, and it was submitted by the parent company. The value of the tender was the same as that of the previous one, and the majority of the changes concerned the format of the tender and references to documentation by the case company. After the tender submission, the case company was supposed to make decisions quickly and in such a way that a letter of intent would be signed before Christmas, and the final contract would be signed by the end of January 2006. The selected supplier could start designing the equipment at the beginning of January 2006. Before entering into the decision making with the project supplier the case company had to place the contract concerning the steels structures and foundation.

5.2.5.2 Analysis of the stage

A new tender submitted on 4 November turned out to be much more significant than expected. The tender was from the focal company perspective and regarded as a mandatory update, as the project was approaching the decision point and order placement. The price level of equipment of the focal company was more or less unchanged, but the parent company had increased its price by over 20%. Due to internal discussions in the focal company part of the specifications had been changed, as the designing engineers wanted to increase the space needed for the equipment. The outcome of the new specification was that the effective height of the system was reduced by 1.4 m, which represented approximately 5% reduction in capacity. Changes were not perceived positively by Proj.

Proj also had an additional concern, due to the new specification of the focal company, which not only reduced the capacity, but also required tighter tolerances from steel structure manufacturing and installation than specified by UK standards. There was pressure to move ahead with the steel structure and place the order, but the focal company did not comment on the differences in tolerance requirements, and especially, if the UK standard could be applied in a timely way or not.

***Proj (email 4.11.2005)**: "Attached is all the deflections calculated for a single frame of the Racking System under various loading patterns (uneven & even loading considered. We are obviously awaiting your consideration of email of 31.10.05 and concurrence (or otherwise) with The Black Book, which covers rolling, fabrication & erection tolerances. Agreement with item 1 & item 2 means stacker cranes can operate properly within the structure provided by the case company. Is this the case?"*

The designers of the focal company were confused, and they saw risks in the solution

and wanted to take more time in order to assess the questions properly. Proj proposed a meeting should be held on 11 November in order to come to a decision regarding the questions and to push the project forward, but the marketing director was tied up with another project and not able to attend the proposed meeting. Therefore, Proj wanted to delay the meeting by almost a week. From the perspective of the focal company, not replying with answers was a serious event, and it created a negative atmosphere among the project team. The hesitation in the focal company was also detected by the project team, and it was reported on all levels.

***Dir**: "I said there was this view that they've got a long time to look at this, they should have the answers ready for us, and it came across that we were beginning to think about that, again. I think it did show [unawareness how to approach the matter]."*

Proj addressed the matter once again in an email sent 10 November, and he still waited for answers to the questions. The inability to respond severely influenced the perceptions of the project team. There were professional doubts concerning the quality of engineering, as specifications were suddenly changed, when all details were supposed to have been thought over. The incidents also resembled the focal company's commitment to investing in the relationship, when the competitor was simultaneously trying to catch up in the process, by identifying important questions raised by the project team, and especially by those mainly responsible.

***Proj**: "[Lux told us] Don't worry about this, because we've got this amount of space and this is telling us that deflection you've got in the building and on the phrongs won't affect the operation of the crane, and the reason it doesn't affect is that look at these calculations and look at these studies we've actually carried out. Then that all builds to making you feel more comfortable. Then I guess other party [the focal company] saying it'll be ok because once we get the order and we'll work this out, no doubt."*

Items related to engineering quality and detailed technical solutions were very much at the top of the agenda during the stage, and incidents related to them also reflected on other dimensions. Mechanical aspects governed interactions, and that may have been the reason, why electrical and control matters did not seem to get adequate focus. The focal company did not take electricians to meetings at the case company, and Ele was disappointed in the quality of the electrical documents submitted, and generally in how electrical matters were presented by the focal company. He saw the first positive signs regarding professionalism during the final meeting between the parties and reference visits in December, which was rather late

taking into account that Ele had emphasised the importance of first impressions and contact in perception of the supplier and its individuals. Robustness of engineering was highly appreciated in the case company, and Lux's reference installation was a benchmark for the focal company. Even though the stacker cranes were not similar to the one needed in the project, Proj was impressed by how they were designed and built.

***Dir**: "I know he was in terms of … he certainly...he thought the Lux robustness because Proj is a mechanical engineer. So, he was sort of very much like of Lux mechanical robustness of the kit. I have to say."*

Being able to convince and cooperate in complex technical matters also reflects on the relationships between individuals, firstly by building trust between the actors, and secondly via something the project team had named "feel good factor", which describes how pleasant or unpleasant they perceive working with individuals of suppliers. The project team shared their views with each other after meetings with the suppliers, concerning these kinds of highly intangible elements of interaction, which were involved according to the majority of informants.

***Ele**: "Fairly intangible most of it but it's a group feeling, and we obviously score that when we do the comparison. Feel good factor, various other factors, which are fairly intangible but scored as a group may well influence one way or the other."*

In the last meeting, the same technical questions were discussed again, and the main focus was in defining the interface between stacker cranes and rack. No common understanding had yet been reached between the parties concerning the tolerances needed for safe operation. Proj argued several times during the interview that the decision on the supplier had not yet been made, but the relationship between the parties did not get any better after the meeting, and it was confirmed by Dir that it was a crucial meeting. The project team felt the urgency to get things moving, as from the mechanical perspective the solutions of the focal company and Lux differed so much that there were two different design lines for the structures, and that kind of situation could not continue, as it was unnecessarily wasting valuable resources.

***Proj**: "And I felt reckless in the meeting at your office as I ...I think I probably it doesn't make point that I said to myself, if I go out now and leave these clearing.Clear it up just to make sure that you'd satisfy all the requirements, and I think at last they were."*

There were several incidents that took place during the reference visits prior to the meeting at the focal company. The original idea of the focal company was to impress the project team with the visits, much like was supposed to have happened during the first visit to reference projects. There had been some talks about competition, and the competitor had a reference project in the case company, and even if the reference was not like the one in the project, it heavily favoured Lux. Especially, the overcoming of problems and redeeming given promises was highly appreciated. It was regarded as a kind of merit in the relationship history that could pay-off also in the present project.

Ele:. *"The only thing...that knowledge influences the decision as far as I can see, was that we had a comment from the people down there that a lot of things went wrong but the company didn't try to walk out from any of them. And that for us… we know that it's gonna go wrong... the fact that the company is...you know accept their responsibility is a big plus."*

It was not only appreciated by Ele and Proj, but also Purch, as it made not only several references to the relationship history, but especially the positive aspects in it.

The reference visits to Sweden and northern Finland created great concerns for the project team. The solution in Sweden showed that the structures were damaged due to collisions between the stacker crane and the rack, which was a shock to some of the project team members, and generated an internal crisis between them. Due to the principles of the solution to be applied, no damages in the rack could be allowed, as they created a safety hazard. Also, the company did not want to purchase the method of locating loads in the rack that had been suggested, as since the first presentations at the beginning of the process, another kind of application had appeared on the market. Doing something similar as in the Swedish reference project would result in decreasing system capacity from the already too low level to totally unacceptable. The first group visiting the project had not paid such close attention to the operation of the system that the principle would have been detected. From the electrical and control perspective there were disappointments caused by the visit.

The other visit revealed also some problems, which were regarded as being serious if they were to appear in the project. Due to the physical dimensions of the reference project, there were some very unique approaches with regards the stacker cranes, with these approaches reducing the trustworthiness of the technical solution by the focal company, but also placing a shadow over its professional skills. Problems detected in the reference projects together with the behaviour of the representatives of the focal company and the hosts at

reference sites made some of the project team members doubt the focal company.

***Manu**: "And we were a bit frustrated that we were simply given the company line, because whenever we asked, the guy that was there, the reference project's guy, he asked your guys first. It was a bit of that, what there was going on, me being very simple."*

The internal relationships of the project team were probed, especially at the time, when the meeting at the focal company took place. Manu and Proj had been quarreling about the project, and they arrived in Finland on different flights. Manu had been hoping to discuss the problems seen during the reference visits, but Proj wanted to concentrate on the tolerances and the interface between the stacker cranes and rack. Solution related matters according to him had nothing to do with the focal company, and they had to be handled internally. He had the opinion that it is too late to start talking about the fitness of the concept.

It could be seen that Purch had negatively perceived work earlier done by the old project team, and he claimed that there should be more competition in the project, and wanted to have Lux, as quickly as possible, on the same level, so that the final comparison between the suppliers could be carried out. Hence, he pushed Lux back into the process and perceived the earlier relationship between the case company and Lux very positively.

Commercial parts of the meetings also provided the project team with the possibilities to shape their perception of the focal company. There were multiple items, which made the interactions in this area less fluent. The first meeting with Purch had already turned out to be difficult, and the focal company did not quite know how it should react to the challenges raised by Purch. Opening the discussion by asking the percentage of discount in the prices was a chosen tactic by Purch. Through doing this he wanted assess if the supplier was committed to working for the relationship and willing to jointly work for a common objective. He spoke about barriers, which could appear in multiple forms, as linguistic, or as behavioural.

In addition to face-to-face interactions there also seemed to be difficulties for the parties to understand each other in writing. Purch complained that tenders made by the focal company were not able to illustrate that the supplier understood what was needed and required by the case company and the project. He assumed that it must be linguistic problems that resulted in the poor quality of tenders, and he strongly suspected that in the level of English in the focal company was lacking. The focal company had great difficulties in understanding the problems related to the tenders, as they followed the same format as

elsewhere. One example of a communication break was related to general terms and conditions by the case company and the acceptance of them.

***Excerpt from tenders by the focal company**: "On general level the conditions are acceptable as is but they have to be reviewed jointly to confirm the interpretation."*

There were several incidents related to the terms and conditions, and Purch was surprised to hear that they had been accepted after the first tender, as this was not something had was not used to with other process equipment suppliers. Obviously the blindness or barriers were located on both sides, and possibilities for cooperation had some preconceptions. Purch's perception of the tenders by the focal company remained rather negative.

***Purch:** "The weakness with your proposal was that the competitor was very well known to case company. They had just finished the project on the site. And that had been completed very well."*

The managing director of the company took part in the last commercial meeting at the case company in order to show a customer orientation, and that the project was important to them. As the relationship between Purch and the marketing director had not developed positively, there might have been possibilities to improve the dialogue by involving other individuals in the discussions. Purch, however, perceived the initiative fully failed, and the incidents during the meeting only confirmed his less than positive perception of the focal company. The managing director of the focal company was at the meeting, in which mainly commercial matters were negotiated, but instead of improving the relationship, the new actor actually made the position of the focal company worse. The dialogue was close to hostile, at least from the perspective of the focal company, and the atmosphere was reflected in the perception by Purch.

***Purch**: "What sticks in my mind was the communication barrier. I honestly felt that you didn't understand my English. So, when I was trying to explain to that chap [MD of focal company], I was over explaining, and I wasn't quite sure whether that was because you were trying to be...you were positioning yourself commercially, or if you didn't have a clear understanding of my English. That was what stuck in my mind. Obviously I knew that you was the...I knew that he was the owner of the company. So, I got the impression maybe you are trying to use communication as a barrier to agree what I want to because you've been very protective with the company. To understand what I am saying you listen, I didn't quite understand, whether you knew what I was trying to achieve or we were just been very stiff*

commercially and not trying to give too much away with regards to the price, things like that. That was the sort of feeling I got."

Proj had been under pressure, which was caused by the costs of the project, which had already been significantly exceeding the accepted budget, when the project had first been accepted, and when he had taken over the lead role. The situation did not seem to improve adequately, as the means to reducing costs worked against them. The matter was discussed, internally, in the focal company, and it was not clear, if the bad financial situation of the parent company was causing the pressure to increase prices, when the probability of securing an order seemed good at this point.

***Proj (email 7.11.2005)**: "I am trying to reconcile the prices given 02.02.05 'Layout 1' and prices given 04.11.05 'Layout 2'. Our thoughts were that Layout2 provides opportunity to reduce amount of conveying System c200m and might therefore expect cost to reduce. Instead your 04.11.05 price has increased £216k (not including any of the option prices. Is there a reason for this?"*

The parent company tried to justify that the higher price was due to the heavier products specification and changes in equipment. However, it sounded that Proj was still not happy with the explanations. His biggest concern was the budget, which still could not cover the cost of the investment. The cost of the project was a hazy parameter, as firstly there was the pressure of getting everything in line with the budget, and secondly purchasing, and Purch had the objective of reducing the price tendered by the focal company, and thirdly even with the tendered price the focal company was cheaper than Lux.

***Manu**: "They were more expensive than you [On Lux price]."*

Based on these conflicting views on the price level of the focal company, it seems that actually the price was acceptable, but the price was not the most important element in the process. The main focus was on other dimensions and components of the project.

Table 31 sums up the coding of the stage Negotiation. A detailed coding summary is presented in Appendix 5.

Table 31. Distribution of coded passages in the stage Negotiation.

Dimension	Components	Number of coded passages
Personal level	Professionalism Trustworthiness Personal scoring Personal motives	61
Functional	Confidence in supply Detailed solution	45
Relationship	Commitment Customer orientation Trustworthiness Relationship history	43
Experience	References	36
Buyer network		8
Supplier network		7
Identity		1

The stage Negotiation can be argued to be a many-faceted stage. On the *personal level* the stage turned out to be significant. There were two dimensions related to person in the project network: *personal supplier dimension* and *personal buyer dimension*. One cannot argue that there were more personal elements involved than e.g. during the two first stages, but the nature of personal level involvement developed in a different direction. During the interaction, the personal supplier dimension suffered due to its components of *trustworthiness* and *professionalism*, because of the events during interactions and due to the failure to respond properly to the buyer's requests. Also the *personal buyer dimension* achieved a foothold in the process. During the current stage, on the one hand, some of the members of the new project team felt that earlier relationships with other suppliers should be appreciated more, and there seemed to be *personal motives* for acting in that way. The focal company also failed by ruining the personal level relationships with the purchasing function of the case company, and they would not be *scored* high due to it. Thus, the individual actors of the focal company were perceived professionally and from the trust perspective less attractive compared with the competition. Personal *motives* on the buyer's side evidently followed the events of the process. From the career perspective, possibly the worst that can happen to a project manager, is that he chooses a supplier that fails to complete a project, and that was the risk that many in the project team saw in the focal company. The other alternative, invested in the relationship and allocated resources, and they had already completed a project successfully for the company. One was better off by staying in the comfort zone with a known supplier. Hence, the personal risk was lower, if an earlier *relationship history* was respected more and *scored* a bit higher.

From the technical perspective most of the time spent during the stage was related to detailed technical solutions. The focal company changed significantly its solution, and consequences comprised reduction of capacity and difficulties in rack design. The *solution to problem* component of the *functional position* dimension can be argued to have become more incompetent during the stage for the focal company. Another component visible in *functional position* was *confidence in solution* by the case company. Problems seen in reference projects together with bad performance in engineering a detailed and competent solution reflected on the overall solution by the focal company. The case company referred often to a network of suppliers compared with a single source supplier, and in this process disadvantages in the format of not working as a single entity became evident. A single company capable of supplying a whole project was the clearly preferred alternative by the case company.

Relationship was also a governing dimension, and there was specifically one component that was clearly different from the previous stages, *relationship history*. For the first time during the process there was clear and matching competition in the process. There was an existing relationship with a supplier, other than the focal company, and it seemed have a strong argument for winning the project, especially considering it had already implemented a successful project. The *commitment* to work for a common objective, the project, was an element that was expected. Failure to show *commitment* by not giving their best effort or delaying the process influenced the component. Equally, rigidity and open reluctance to show willingness to compromise influenced the *commitment* shown by the supplier as perceived by the buyer. A necessary pre-requisition of a successful relationship is trust between the parties, and in the current process *trustworthiness* of the supplier was probed due to suspicious elements during the visits to reference projects. *Trustworthiness* was also on trial due to the shortcomings in responding and negotiating about technical details in the meetings. Hence, to maintain a trustworthy status in the eyes of buyers, the buyers must feel that they receive full attention, the best skills and access to all necessary knowledge all the time. In projects like the current one, risks are always present, and they exist both at the organisation and personal level. Risk avoidance is essential in the cognition of the project team.

The *experience dimension* turned out to be rather decisive during the current stage. The original idea of the focal company was to in a way finalise the project and contract by visiting *reference* projects again. There was the impression that both the *reference* projects used earlier in the process were impressive enough to be also used with the new project team. There was, however, one significant difference between the two groups of visitors. The new

project team had been detailing the project so thoroughly that they were able to detect even the smallest details and especially problems. Internally the project team went through hard times, when some of the members started questioning the fitness of the concept for the project. Even if the conceptual suitability was finally not doubted, it still may have reflected on the focal company, which after all had proposed the solution. Not even the second *reference* project was able to impress the project team. There were again problems detected, and the problems seemed to have a direct link to the solution of the project and questions raised in the technical meetings. In both reference projects the behaviour of the hosts created suspicions among the project team members, as there was much internal communication between the hosts and the focal company. As a means to convince the project team on the focal company's capabilities and engineering quality, the two visits to the reference projects failed, or influences were not as expected. It can be concluded that a *reference* visit influences positively on a buyer's perception, if it removes negative prejudices or strengthens a supplier's favourable perception, and negatively where it fortifies a negative perception. Hence, there was a change in the role of references, because they were no longer demonstrated only experience in certain things, but they also influenced other components and dimensions, such as the functional dimension via trustworthiness and confidence in the solution.

Critical events

Table 32 presents the summary on critical events during the stage and gives examples on the different types of events.

Table 32. Statistics on critical events during the stage Negotiation.

Type of events	**Number of coded passages in data**	**Examples**	
		Positive	**Negative**
Events related to visits to reference projects	16	- Getting access to users - Hands on data on details	- Problems detected in reference projects - Type of reference projects - Features of reference projects - Failure to add knowledge on solution - Doubts on honesty
Events in interactions between supplier and	7	- Feel good after discussion	- Commitment to do the best possible

buyer			- Communication barriers - Rigidness against adjustments
Events related to supplier's way of working	5	-	- Allocating resources - Hesitation in responses - Delays in responses - Rigidness concerning technical solutions - Priorities
Events related to conflicts in the buying network	4	-	- Suitability of solution - Priorities for meeting agenda - Dispute on earlier actions in process

There was one type of event governing the stage, and the type of critical event was related to the visits to the reference projects. During the visits there were different kinds of critical events that took place. Some problems were detected by the buyer, and also some features, which were not preferred in the solution to be implemented in the buyer's project, were also detected. Actions by some individuals caused the buyer to suspect the supplier's honesty regarding the reference projects. As in earlier stages, critical events related to interactions and supplier's ways of working were taking place. The buyer network continued its internal dispute and those events created tension within it, but also reflected on the suppliers as well.

5.2.5.3 Conclusions of the stage

Figure 23 sums up the stage "Reception and analysis of suppliers' proposals and negotiation on all points". Following this, the conclusions of the stage are drawn.

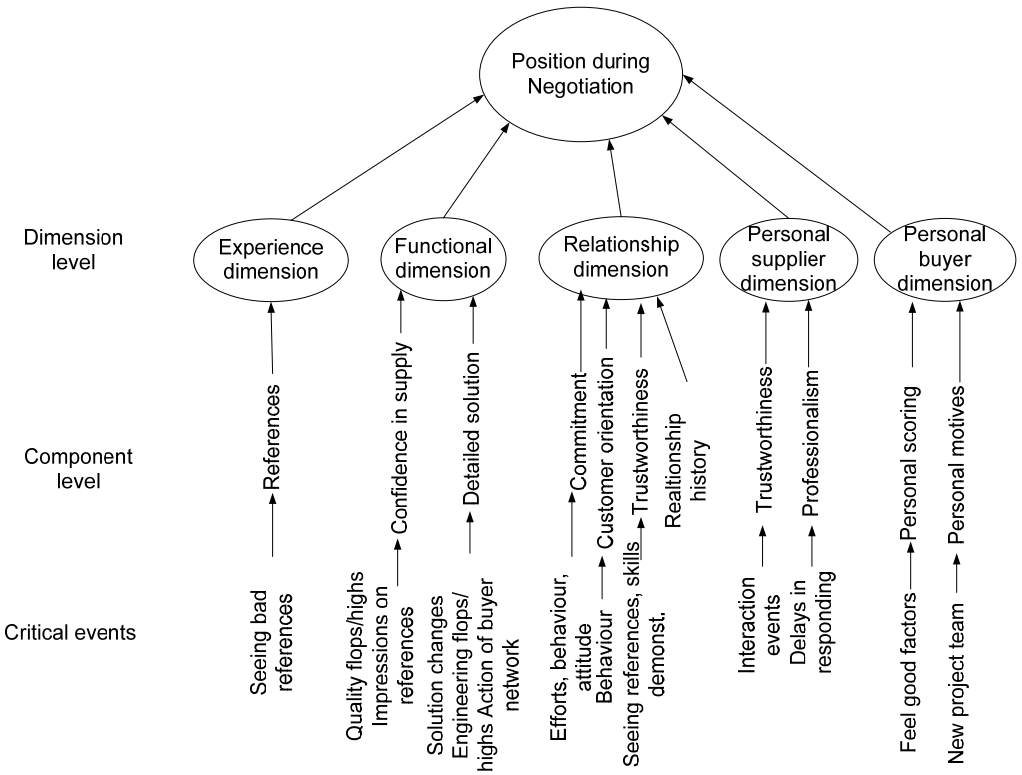

Figure 23. Supplier's position in a project network during the stage Negotiation.

In this subchapter we went through perhaps the most important stage with regards the outcome of the process perspective. The positions of the two remaining suppliers started shifting, and the directions were opposite. The focal company was gradually drifting towards the follower position, whereas the competition, on the other hand, was taking the lead. In the next subchapter we will look at the final stages studied in the present study: the final evaluation and the selection of the supplier.

Personal dimensions turned out to be central in addition to the relationship dimension. Individual relationships and personal motives shifted the positions of the suppliers. The focal company failed to create adequate confidence in the new project team both professionally and as working counterparts. The solution and its different elements, hence the functional dimension, remained on the top in the process and was also involved in the other dimension, either directly or indirectly. Interactions concerning details of the solution were the key to changes in the position. Experience was again during the stage important, but only via its reference component, which turned out to be difficult for the focal company to handle. The results of the visits to reference projects demonstrated the changes in the buyer network,

which during the process had learned about the solutions and how to assess their pros and cons in their case.

5.2.6 Final evaluation, selection of supplier and contract

5.2.6.1 Description of the stage

The stage discussed is a combination stage. The stage comprises final evaluation of the two remaining suppliers, selection of one for contractual negotiations, and finally signing a contract with the selected supplier. The reason for not separating the three stages is simply that the positions that the focal company and Lux had during the previous stages changed, so that the focal company was kept aside from them and the interactions continued only with Lux. The focal company was going to loose a business opportunity, and Lux was going to sign a contract, as long as they did not make any dramatic mistakes during the stage. The following time line in Figure 24 sums up the major milestones during the combination stage.

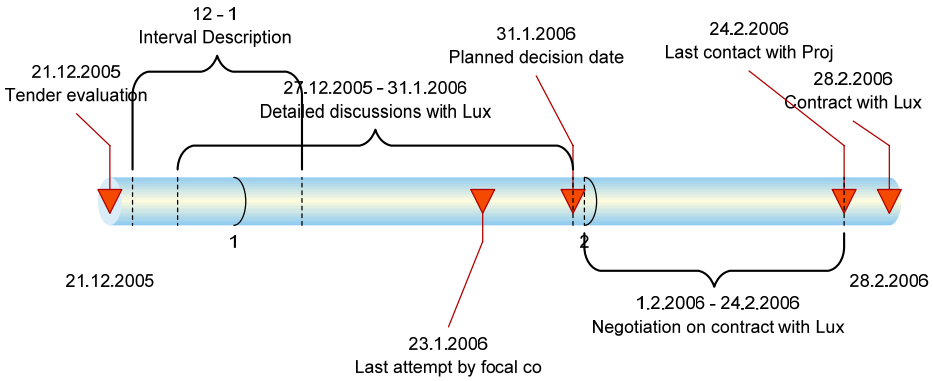

Figure 24. Timeline of the project marketing stage "Final Evaluation, Selection of Supplier and Contract.

The focal company and the parent company had submitted the final version of the tender on 19 December, which ended the previous stage of the process being studied. The case company had a formal evaluation process for tenders, and evaluation was an ongoing activity as soon as the tender had been submitted. From the perspective of the focal company the final stage was rather frustrating, as there were no face-to-face interactions with the case company. Also all other communication practically stopped, and the case company did not wish to have any meetings with the focal company. The case company focused on meetings with Lux, and there was no room for other activities.

There were some meetings arranged in the focal company, but it was preparing for the

bad news that there would not be any project in the case company. Designers in the company continued to do some work on the project and especially on the tolerances between stacker cranes and rack, and as a result the original capacity from the beginning of the process could be reverted. The new development was communicated to Proj on 23 January, but Proj refused to meet and discuss the project with the focal company. The planned decision date was 31 January. Negotiations with Lux, however, continued until almost the end of February, when finally the contract was signed with them. On 24 February Agent was in contact with Proj, who said that there would be a formal letter confirming the order placement, and the justifications for supplier selection. That letter was not, however, received. From the perspective of the focal company the project was over at the end of February 2006.

5.2.6.2 Analysis of the stage

Due to it being Christmas time it was not expected by the focal company that there would be a lot of communication with the case company at the end of the year, 2005. Proj had said during the meeting in mid-December that they would be on holiday at the end of the year, and would get back in January, and it was preliminarily agreed that a meeting would be held on 11 January. Agent got the information from Ini on 9 January that the situation had changed.

***Agent (email 9.1.2005)**: "I was talking to Ini this morning. As an answer to my direct question about serious competition, he responded, yes there is, and it is Lux. Ini had been in meetings arranged by Proj. Proj is nastily mysterious and short while talking about the competitive situation. When I called him last week, he was emphasizing the urge to get the contract for the rack placed, and therefore he wanted to extend the validity of the stacker crane and conveyor tenders until the end of January. Proj's referral to all tenders means that also stacker cranes and conveyors are evaluated."*

If Proj's reluctance to be in any closer contact is compared with communication frequency with the focal company, there is a clear indication that there was a clear change in the relationship. Table 33 shows the amounts of different types of communication during the later stages of the project

Table 33. Communication frequencies with marketing director during later stages of the project.

Stage / Sender/caller	Setting up the bidding list, invitation to tender & information exchange	Receival of proposals, analysis and negotiation on all points	Final evaluation, selection of supplier, and contract
Ini	9 emails	4 emails	-
Proj	22 emails	34 emails	1 email
Others in case co.		5 emails	-
Meetings	3 at case company	3 (2 at case company/one at focal company)	-

It seems obvious that there has been a significant change in the process after the last meeting and the latest tender submitted. From a level of 33-43 messages and 3 meetings per stage, interactions dropped to a single email, which was a response to an email by the marketing director.

The last attempt by the focal company to improve its attractiveness as a project partner by reverting to the original capacity was not perceived too enthusiastically by Proj, which on the other is understandable in the light of earlier events in the process. The case company had tried to relieve the tolerance requirements by the focal company during the past autumn, but the tolerances had remained and the confirmation on them was taking a long time. Now, suddenly, the whole tolerance discussion was forgotten, and new less strict ones were proposed. It was not professional or increasing trust in the project team of the focal company.

***Marketing director on 23.1.2006 to Proj**: "We have done further thinking on the structures of the stacker crane. The outcome is that by relocating rope pulleys, increasing torsion rigidity of carriage, applying two hoisting machineries instead of one, changing the guiding mechanisms of the forks. This would result in getting back the two rack tiers, which had to be removed due to the tolerances required by the earlier design. Do you think we could meet you to discuss the matters, say, this week Wednesday or Thursday, or some other time suitable to you?"*

Proj's response, which was the only direct contact in 2006 until the contract had been signed with Lux, clearly showed that the supplier had already been selected. There was no reason to be in contact with the focal company anymore.

***Proj on 24.1.2006**: "Thanks for this. It would of course be useful and beneficial to incorporate these suggestions into the scheme. As I have previously stated the decision on stacker supplier is pending and will be made next week. We are tied up this week with other pre-arranged meetings and would suggest that we pick these points up with you, should we proceed with the focal company. Again I apologise for matters being delayed and thank you*

for your patience with us, but these are important decisions for us, which I think you appreciate."

Manu, as the responsible user of the project was emphasising the importance of capacity, but he did not know about the last attempt by the focal company, and there seemed to be no need to change the status. The selection was already made, and the main concern was now to complete the process and advance as quickly as possible to implementing the project.

Another confirmation on the early selection was mentioned in tender evaluation documents of the case company. The person compiling the evaluation sheet had made the last updates to the sheet on 21.12.2005 (complete sheet in Appendix 5). The formal supplier evaluation was based on the comparison of the solutions proposed by the two finalists. Comparison was based on criteria and weighting by Proj, and there was a lot of internal discussion about it, and the project team always reached a consensus on the evaluation.

Dir: *"Well the new team constructed the metrics and the weightings and a lot of debate was initially about the metrics and the weightings because the old team, if you like, felt that the weightings deliberately swang towards Lux."*

Some even felt that the process was even more dramatic and was aimed at a desired result.

Manu: *"He [Proj] cheated in the scoring by the way, but that's part of the way. These are all right, how you weigh the bloody things, whether you weigh electrical integrity against, how much I'm getting warehouse. I'm building a warehouse to put stuff in. I mean, I do weigh them differently."*

No matter how the evaluation of the suppliers was done, it took into consideration solutions proposed by both of them. Different elements of both solutions were scored, weighted, and summed up into a total score. Lux scored higher than the focal company, and the difference was close to 10%. Table 34 below sums up the relative importance of each area, and gives also the scores of suppliers in them. A detailed comparison sheet is presented in Appendix 5.

Table 34. Scoring of suppliers' tenders, weights of different areas.

Discipline	Focal company weighted score	Lux weighted score	Max	%
Layout	167	187	240	23
Mech - Stacker Cranes	216	244	280	27
Mech - Transfer Equipment	112	144	160	15
Electrical & Control	152	111	235	23
Warehouse Management	65	94	125	12
Total	712	780	1040	100

The evaluation of the tenders emphasised the robustness of mechanical engineering and in that respect Lux was highly appreciated. Proj especially liked their way of engineering equipment, and he communicated it rather openly within the project team.

***Manu**:"Then it was Proj weighting on each one, and scored you one for robustness."[with a scale 1 to 5]*[17]

There were some attributes, in which scorings between project team members varied greatly, and the team tried to come up with explanations for why such differences surfaced. Such variation in perceptions was said to "*suck juice from the decision"*, and arbitrary was not seen as a means to gain consensus.

Technical and engineering matters were one part of the evaluation process, and the technical experts of the project team were participating in this process. Hence, the scoring process of the solution aims at providing the preferred technical solution, but it does not evaluate the implication of the solution directly. The implication part was assessed during the earlier parts of the process during the interactions and reference visits, and in the case of Lux learning from internal sources of the case company. Rmill had reported on Lux's performance concerning its implementation of projects, and the reports were positive.

***Proj:** "You might say the fact that a company [Lux] that was already done business, and their work is just a few meters off the road, might also have an advantage on a company who has not done business before. Even, if it is the same, at least you get to know that this their capability, and this is what they are good at, and this is what they are not so good at, and maybe you can work on those not so good at, and that always gives you a bit more of comfort, I would guess. And I think that might have reflected somewhere in the scores, that would have been the advantage."*

Technical evaluation was one step in the evaluation process, and most of the project

[17] Author's addition

team members did not make any assessment on the economical perspectives of the project. Proj and Purch looked after the cost comparison of the two suppliers. Even though Purch had earlier attached himself rather heavily to the focal company concerning price and the reduction of it, there were several references to confirmation that cost was not a governing attribute in the final selection. Instead, the suppliers' positions at the end of the process were based on other factors.

Dir: *"I think the key feature was the equipment we wanted, and with regards to price, it was a secondary feature at that stage. That was a secondary feature from the decision making point of view."*

Proj: *"There might have been differences in the technical offering which may say probably favours one party over the other [A over B] but commercial offering, if party B was 10% or 20% cheaper than A, there would be no reason to select the less favourable technical solution."*

Manu: *"Lux was more expensive, but by negotiations they came in, I don't know what the final price was, because I was not involved in that but it was acceptable to us."*

Hence, even if the budget and prices were crucial earlier in the process for the case company, in the end, those factors did not seem to weigh significantly in the selection process. The solution, the functional position from the technical and the implementation perspective, governed more than the economical aspects and feasibility. The case company had a supplier in their hands, whose solution was more expensive, even significantly so, but whose solution was scored higher than the one, which had been the basis of the project since the beginning of the process.

The fact that the higher scored solution was more expensive was not actually a problem, because it was by a supplier, which had an existing relationship with the case company. The earlier relationship had influence on how the competing suppliers were scored, but the relationship itself was of more importance.

Proj: *"And I think that might have reflected somewhere in the scores, that would have been the advantage."*

Proj: *"You might say the fact that a company that was already done business, and their work is just a few meters off the road might also have an advantage on a company who has not done business before."*

At the same time the project team had a similar process going on concerning the rack,

and its supplier selection. There were two alternatives for constructing the rack. Firstly, there was a supplier with a known track record, an existing business relationship with the case company, but with a significantly higher price than the other one. Secondly, there was a smaller supplier that had not done business with the case company before, but which had a much lower price than the known supplier. The case company went for the known supplier.

Dir: *"So we had this scenario where we had somebody coming very cheaply and who used to build small sheds versus this bigger organisation who could do everything, and who had a relationship with case company, and there was a huge difference in price."*

The explanation for leaning towards a known relationship is related to evaluating the risks expected due to the selection. If a relationship and a project has succeeded once, there is no reason to expect that it would not succeed another time. One has to remember, what kind of stakes each stakeholder has in the process. Firstly, the case company is going to buy a project, which is vital to their business process. Secondly, on a personal level, flagging for a selection, which turns out to be a disaster, is a twofold disaster. The career of the person who was responsible for the unsuccessful project cannot carry the load of them being known as "the one" responsible for the failure.

Proj: *"At least you get to know that this is their capability and this is, what they are good at, and this is what they are not so good at. And maybe you can work on those not so good ats and that always gives you a bit more of comfort, I would guess."*

For those, who evaluate financial capabilities of the suppliers, or risks related to the healthiness of the business, structural matters are important. Supplier networks provide higher risks than organisations having all resources in-house. Especially indicating problems concerning roles within the supplier network increases the negative influence of the structure. The case company prefers a single source supplier compared with a supplier network.

A very interesting question is: Who actually makes the decisions in a project like this? Or from the perspective of the present study: Who defines the positions of the suppliers in a project marketing network? The answer in this case is not an easy one to give, due to the multi-step approach applied.

Technical evaluation of the tenders and the suppliers were conducted by the project team. All members had equal weight in scoring the tenders, and the outcome was the group's recommendation to those in higher positions in the organisation. Commercial matters were handled by the project manager (Proj) and the purchasing function (Purch). Based on the two

lines, technical and commercial, the project manager had a recommendation for the steering group, which comprised directors representing relevant business units and engineering. Proj was the only one from the project team in the steering group. In practise the head of the steering group (Dir in this case) had the final word on the steering group's recommendation for the managing director for making the final decision.

To get back to the question posed a bit earlier: Who is the key in the decision making process in the project described? Proj takes both the technical and the commercial perspective to the steering group, and actually the rest of the project team does not know what is going on in the other lines of the decision making process.

Once the matter is taken to the steering group by the project manager the probability that the decision would be against the project manager's recommendation is not relevant. On the other hand, Proj was relying on the project team. Dir showed appreciation and respect to Proj's approach and skills in the project, and he would not risk the outcome of the project by ignoring Proj's opinion. Accordingly, the final word made by the managing director hardly goes against the steering group's recommendation. Hence, we can conclude that the the heaviest perception on the suppliers' positions is possessed by Proj in this case.

Table 35 sums up the coding of the stage Final Evaluation, Selection of Supplier and Contract. A detailed coding summary is presented in Appendix 5.

Table 35. Distribution of coded passages in the stage Final Evaluation, Selection of Supplier and Contract.

Dimension	**Components**	**Number coded passages**
Decision making		57
Functional	Solution to problem Confidence in supply	30
Personal level	Personal scoring Personal motives	15
Relationship	Trustworthiness Known performance Relationship history	13
Identity	Resource base	5
Supplier network		4
Buyer network		2

The final stage of the project marketing process studied turned out to be more simple than most of the previous ones, as there were practically no interactions between the focal company and the case company. Communication frequency dropped down to almost zero, and the case company did not show any interest in the focal company. Hence, it looks justified in

concluding that even if the decision with regards the supplier had not been done, the project team was aiming in a certain direction.

Technical comparison of the two competing solutions resulted in a higher scoring for Lux, and especially their engineering aspects were preferred. So, *functional position* was the starting point in the selection process. The difference between scoring was less than 10%, but taking into account that one of the suppliers already had a relationship with the case company, the *relationship dimension* seemed to govern the perception by the case company. Due to the common history, *relationship history*, it was regarded less risky if Lux were to implement the project, than starting a new relationship with an unknown entity. Cost wise the chosen direction was less favourable, as Lux had been more expensive throughout the whole process. Still, the case company was ready to pay for the higher confidence in the supplier.

The *identity dimension* was not illustrated in the data very clearly, but there were shades of it in multiple areas. Structurally, Lux was more attractive, as they were going to build equipment by themselves, and there was not a supplier network involved. Hence, their *resource base* was preferred. Especially the corporate and management level involved seemed to have doubts about having multiple suppliers working for a common goal - the project. They had had bad experiences in the past, those experiences reflected on the preferred approach for implementing the project.

Personal level factors, *personal buyer dimension*, have had a significant role in the process all along the way, since the very beginning, but the end of the process seemed to be of higher importance with regards the cognition of individual actors. Individual perceptions influenced the scoring of the tenders, but due to the nature of the decision making process there was one individual higher positioned than anybody else, the project manager. He was personally a stakeholder, chairing the project team, which scored the tenders, and his *personal motives* and *scoring* were heavy in the decision making. He was also, together with Purch, conducting the commercial negotiations and evaluation of the suppliers. Proj presented the recommendation for a supplier in the steering group, and this was significant for his career and position in the case company. The project would either succeed or fail based on his recommendation, and no project manager wants to increase the risks of failure, even if the lower risk can mean higher costs. But, still the project team was assisting in the decision making.

The change level during this stage was different, partly because there were no interactions between the case company and the focal company, but partly also because from

the perspective of the case company the position of the focal company was established during the previous stages. Those events that had taken place up until the beginning of the stage had already created a perception, which the case company, and especially Proj did not want to change. The final attempt to change the position, by creating more capacity due to changes in engineering were ignored, as Proj wanted to freeze the positions of the suppliers and proceed with Lux. Practically speaking, there was no change level present during the final studied stage.

5.2.6.3 Conclusions of the stage

This subchapter draws conclusions on the governing dimensions and underlying components of the supplier's position construct in the project marketing network. The conclusions include the dimensions and components through which they influence the supplier's position in the project network. Figure 25 presents the conclusions concerning the stage.

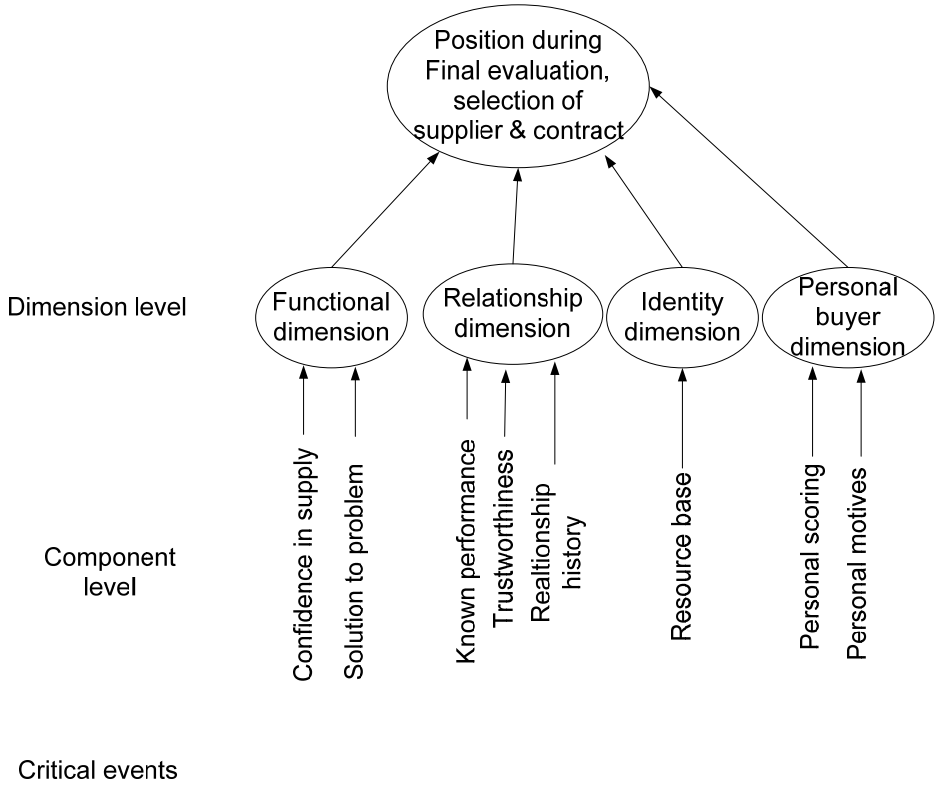

Figure 25. Supplier's position in a project network during the stage "Final evaluation, selection of supplier and contract".

The final stages in the studied process only confirmed the outcome of the earlier stages, and the buyer was in a way only looking for a confirmation on the already frozen positions of the suppliers. The functional dimension was officially the dominating one, but just as important, were the relationship and personal buyer dimensions. Earlier relationship with Lux was a huge advantage for them, and on the personal level positioning the suppliers differently would have increased the uncertainty related to the supplier. Increased uncertainty from the key individual perspective would have been equal to taking a higher personal risk, and there was no reason for doing that. The identity dimension supported the chosen direction, as a supplier with in-house resources was preferred over a supplier network.

From the critical events and interactions perspective the stage appeared to be quiet, as the buyer kept contact only with one supplier. The focal company had meetings, and practically no communication with the buyer, which was focusing on finalising the details of the project with Lux.

6 CONCLUSIONS AND DISCUSSION

The previous chapter presented the case study from the steel industry. We witnessed a complete project marketing process, and the data analysis related to each stage of the project marketing process was analysed, and the findings from the data were reported. The analysis was conducted separately for each stage. In the current chapter conclusions from the findings are drawn, and synthesised into a process level perspective to the problem being researched, the supplier's position in a project marketing network. The following three subchapters shall answer the research questions posed in the introductory chapter of the present study.

6.1 Network position during the project marketing process

The first research question posed in the introductory chapter was: *How is the supplier's network position composed in the project marketing network during the project marketing process up to and until contract placement?*

The supplier's position can be presented as a hierarchical construct as the variety of influencing factors can be placed on different levels. The position itself presents the highest level, and it represents how *preferred a supplier is from the buyer's perspective for the project compared with other suppliers.* The supplier's position in the project marketing network is an outcome of a combination of organisation related and individual actor related *dimensions* representing a factor constellation which forms the position of a supplier in a network. Dimensions represent the intermediate level in the construct hierarchy. The dimensions are formed from *components*. Components represent the lowest level in the hierarchy. We will first discuss the organisation related dimensions (*functional*, *experience*, *relationship*, and *identity*) and their underlying components, and thereafter the individual actor related dimensions (*personal supplier* and *personal buyer dimensions*) and their underlying components. Figure 26 shows the structure of the position construct during a project marketing network in detail.

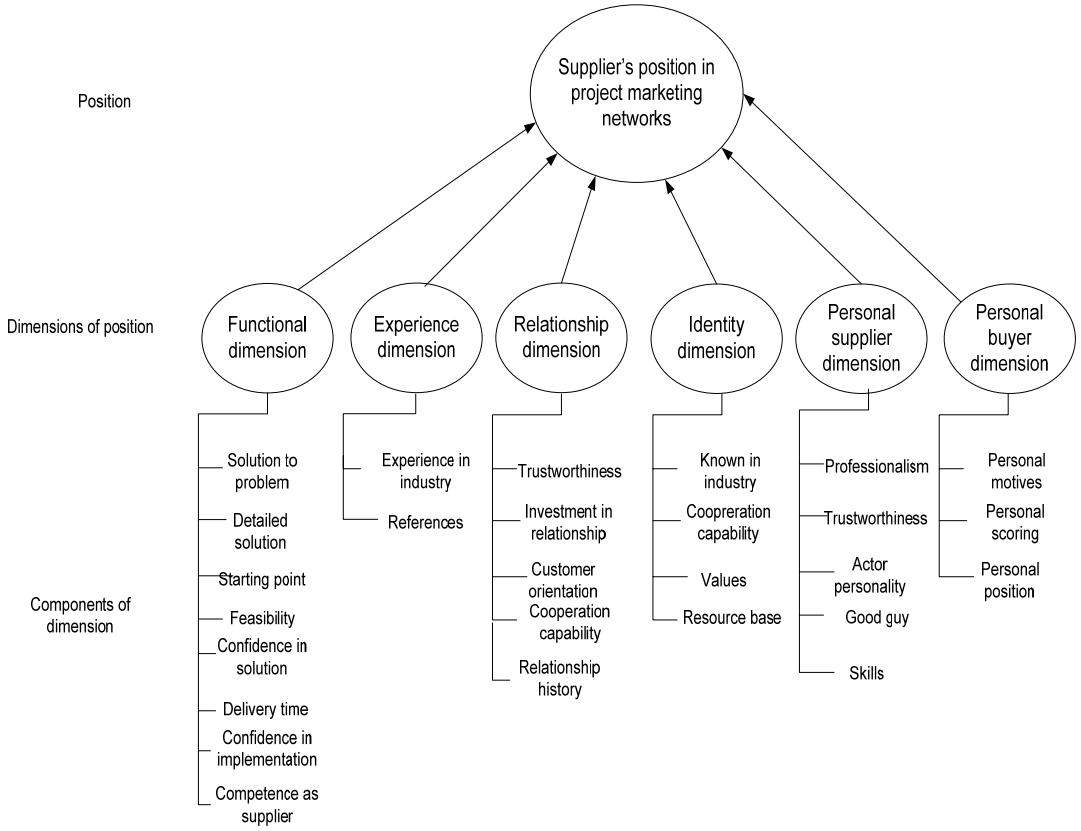

Figure 26. A detailed view of the supplier's position in the project marketing network.

The problem is the catalyst which can create an opportunity for a project and subsequently a business opportunity for a supplier, in the situation where the supplier's position is better than the position of the competition. The *functional dimension* and its components define the solution related elements of the position. The dimension can be split into two groups of components: firstly *the solution* to the problem, and secondly *the implementation* of the solution. The solution related group comprises the following components: *solution to problem*, *detailed solution*, *starting point*, *feasibility*, and *confidence in solution*. The implementation related group comprises the components of: *delivery time*, *confidence in implementation*, and *confidence in supplier*. The initial problem makes the buyer search for solutions to the problem. There is a *starting point* in the search for the solution, and it may be a reasonable and feasible way for overcoming the problem. If the suppliers share the initial solution, then the buyer's task is to select the supplier based on its purchasing criteria. In a case like the one presented, the initial solution was replaced with a

novel one, which was unknown to the buyer, and it was a new starting point for the long process. The *solution to the problem* governs the cognition, and different aspects in the solution are involved, including the *detailed solution*, financial aspects in the format of *feasibility* of the solution, and also matters related to *implementing the solution* in practise. A solution proposed by a supplier can be an outstanding one, but as long as it is only a drawing or a description of how it is supposed to work, the buyer has to assess if the solution can be implemented and if the solution finally will be able do what it is claimed to do. Implementing a solution is split into a number of components: *delivery time*, *confidence in implementation*, and *competence as supplier*. Regardless of how good a solution is, it must be possible to implement within an acceptable time frame first on the general level, and thereafter an individual supplier must be able to manage the project within the time frame. One of the suppliers (Ger) was rejected, when they proposed a delivery time that was much longer than anticipated by the buyer and the other suppliers. In the same way, the implementation process of the project must be acceptable, and must, for example, not disturb the activities of the buyer's process unnecessarily. There is also one component of the functional dimension, measuring the buyer's confidence in the supplier's competences to execute the implementation process as promised.

Experience is a twofold dimension: firstly, it is related to *experience in a certain industry* and the solving of certain types of problems in the industry. *Experience* is demonstrated by the supplier via *reference projects*, and on the other hand, *reference projects* are the only practical way for the buyer to verify the capabilities of the supplier prior to placing an order. Reference projects can also provide the buyer with a possibility to examine how the supplier has earlier handled relationships with project buyers. During the project marketing process, experience is reflected also in the actions of the individuals on both sides of the table. The supplier aims at convincing the buyer by referring to experience in other projects, and on the other hand, the buyer justifies the supplier's trustworthiness and capabilities against experiences in other projects.

The third organisation related dimension of position is *relationship*. The *relationship dimension* can be viewed from two different perspectives: firstly, from a new relationship perspective, and secondly, from an existing relationship perspective. These two perspectives form the components of the relationship dimension. The buyer is trying to assess whether the supplier can be trusted, and especially in a project, in which a novel solution is involved, trusting and *trustworthiness* of the supplier is vital. The supplier can build trust by *investing in*

the relationship, which can be defined as the supplier's allocation of efforts and resources for becoming the preferred supplier of the project. The experience dimension and its components are to some extent embedded in trustworthiness, as especially *experience* demonstrated with *references* is also signalling trustworthiness. *Customer orientation* can be argued to measure how well the supplier is willing to work in the project based on the buyer's priorities. *Cooperation capability* measures the supplier's capacity to adjust to the working procedures of the project buyer. If there is already a relationship between the supplier and the buyer, the *relationship history component* becomes important. Relationship history can be defined as the project buyer's perception of a supplier in earlier projects or project prospects. In an environment full of uncertainties, being able to predict a possible outcome of a project with the help of existing data seems the preferred way. It is not necessarily that an old relationship will provide a better performance by the supplier, but it is merely the possibility to know in advance what to expect, that matters. It is the known and expected performance that the buyer is looking for.

The *identity dimension* is connected to the organisation, the supplier as a company. It is typical that in an industry, for example the steel industry, there is a group of suppliers, which is *known* by the buyer's, and they have an image *in the industry* based on their *values*, *co-operation capability* and *resources*. In case there are no known suppliers for a solution, the buyer may have to look for alternatives outside its comfort and experience zones. With new suppliers, the *identity* will be formed during the marketing process.

Until now we have discussed the organisation related dimensions and components of position. There is, however, a more personal perspective present in the project marketing network. Both the sides, the supplier's side and the buyer's side, are represented by individual actors that are the ones interacting. It is not the organisations that work together, but it is the individuals, whose personal views also shape the positions of the suppliers in the network. Thus, it is logical that there are dimensions representing both of the views. The components of the two dimensions cannot be identical, as the supplier's side is promoting and hoping to sell a project and the buyer's side is trying to balance between the organisational dimensions and the personal elements originating from e.g. personal ambitions, and motives.

The *personal supplier dimension* covers the supplier's side of the personal level. On the supplier's side the buyer is paying attention to *trustworthiness* of the individual actors. Can the buyer trust a critical project in the hands of the supplier's individuals in such a way that the outcome will be acceptable? *Trustworthiness* is built gradually during the interaction

process and is not necessarily based on any single indicator. Instead it is the outcome of a series of incidents, which confirm or do not confirm that the supplier's actors act like expected and in the way they said they would. In a project concerning novelties like presented in the case, the skills and *professionalism* of the supplier's actors are paid attention to. The solution is to a great extent based on the *skills* of individual actors, and it reflects on the position of the supplier in the network. There are two components, which define how the message from the supplier to the buyer is conveyed. The *personality* of the supplier's individual actors is important, as his/her way of presenting the ideas and solutions, and generally to manifest for the supplier is decisive to how the supplier is perceived by the buyer. Another component is related to how the buyer feels working with the supplier's individuals, if they are *good guys* or not.

There is also a *personal buyer dimension*, and it is governed by two components: *personal motives* and *personal position*. The *personal position* of an individual actor in the buyer's organisation causes the individual to act is a certain way. The *personal position* can also be a *motive* to act in a certain way. By reflecting a personal position on the way suppliers are positioned, it can provide the means by which to improve the actor's own position in the organisation, or it may be a way of maintaining the position. *Personal motives*, as in the case presented, were related to improving one's position and maintaining it by reducing risk related to the project. *Personal motives* can also be directed by perceptions of the individual actors on the supplier's side by the buyer's actors.

Based on the findings in the data, the perception of the suppliers by the customers can be either a coalition perception by a group of actors, or a perception by a much smaller group of actors in the buyer's organisation. The group can even include only a single member.

6.2 Changes of network position between the stages of the project marketing process

The case revealed that the position of a supplier in a project marketing network is not a static phenomenon. Instead, there is a change process involved. In the previous subchapter we came to a conclusion with regards the composition of the position concept, but all the dimensions and components do not necessarily have an influence at the same time in the marketing process. In the same way, the perception of the supplier by the buyer is based on a variable number of actors during the project marketing process. The second research question

was: *How does the composition of the supplier's position in project marketing networks change between the stages of the project marketing process?*

6.2.1 Differences between stages

Figure 27 sums up the development of a supplier's position in a project marketing network during a project marketing process. The discussion following Figure 28 aims at synthesising the findings from the data on a more general level.

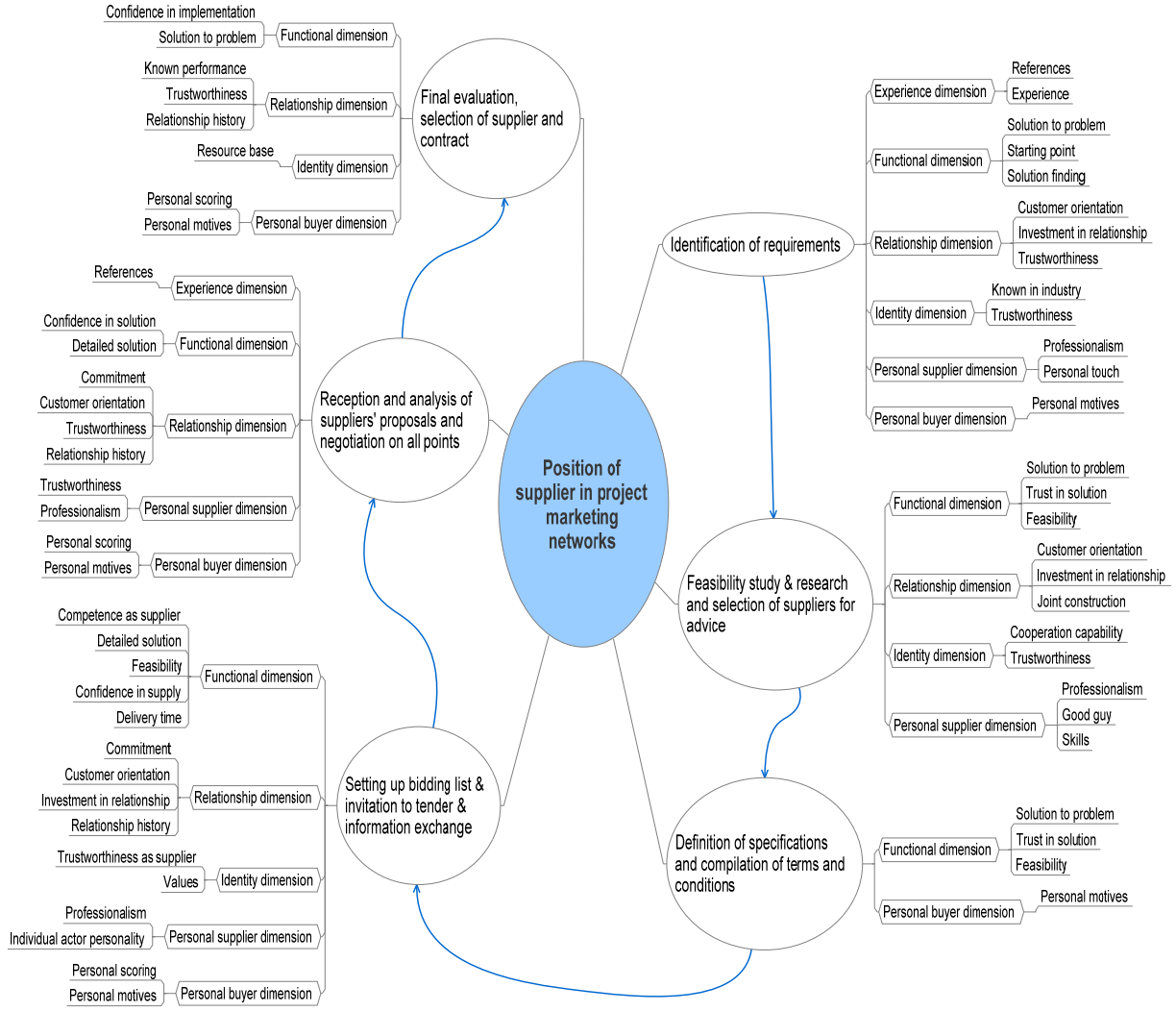

Figure 27. Development of supplier's position construct between the stages of the project marketing process (proposed Position Stage Dimension Component PSDC model).

A customer can practically be lost at the very beginning of a project, which is represented by the stage *Identification of requirements*, and therefore an urgent need for information governs the customer's actions and mind. The customer is looking for a solution to a problem and the functional dimension is at the top of the cognition. Suppliers propose different approaches and the customer tries to find the most attractive ones, beginning with the most obvious ones. The customer tries to comb the markets and the relevant industries in order to find suppliers, which are known and have experience in solving similar problems in the industry. Hence, the experience dimension is vital. Seeing or hearing about a supplier or a reference project for others in the industry can significantly change how a supplier is perceived by the customer, and therefore the identity can shape the supplier's position. Once a supplier with an attractive solution and experience in solving similar problems is found, the customer starts evaluating the supplier's willingness to develop the relationship, and invest in it. In addition to organisation level dimensions, also the personal level dimension is important. Supplier's individual actors interact with the customer, and it is their personality and professionalism that is evaluated and that influences on the customer's perception of the supplier. As all economical activities are carried out by individuals, the actors on the buyer's side can have a central role in the process. It is difficult to know what kinds of personal motives exist, and which can control how the individual actors act during the process, and why they act the way they do. What was notable during the stage was that the position of the supplier, and consequently some significant decisions were based on perceptions by a single actor on the buyer's side. There were also collective perceptions involved, but especially at the very beginning the control was in the hands of a single actor, and the position of the supplier depended mainly on that single individual actor. If he was convinced by the solution to the problem, the process could continue.

As soon as there are some potential solutions to the problem available, the process takes a turn towards some new perspectives. During the *Feasibility study & research and selection of suppliers for advice*, the functional position is still central, but in addition to the solution alone, the feasibility of the solution becomes important. The buyer tries to figure out, if the solution can be trusted to solve the problem, and a more comparative assessment of the solution is conducted. Identity of the suppliers remains one of the key issues via its components cooperation and trustworthiness. The parties build a relationship, and the supplier's will and capability to convince the buyer about the importance of the relationship, by working to develop of the relationship, are vital. The parties should jointly construct an

eventual project, as joint construction is an important component of the relationship. Still, all actions are carried out by the supplier's individual actors, and therefore the professional and social skills of the supplier's individual actors are focused upon by the buyer's actors. Honesty and the correct attitude towards taking part in the buyer's learning process can greatly enhance the perception of the supplier by the buyer. The buyers' personal dimension was not identified in the data. Evaluation of the feasibility of the project and proposals to solve the problem were based on a collective perception instead of a more single actor centric situation valid during the previous stage.

When the buyer is moving forward with the project and preparing formal documents during the stage *Definition of specifications and compilations of terms and conditions* focus is shifted to two areas. Firstly, as from the beginning of the process, the functional position is vital, as the purpose of the stage is to create pre-requisites for a comparative situation with multiple suppliers involved. Secondly, the supplier involved up until this point, has to continue showing motivation to assist the buyer during the stage, even if the stage includes the possibility that the buyer will start to involve more suppliers in the process. The functional position is, however, governing the stage, and the solution to the problem and its feasibility are the keys. The buyer presents the project to the management of the company, and any flaws in convincing them about the feasibility of the solution or competing solutions may have an influence on how the actual solution is positioned. The difference in the stage is that the supplier is not actually the principal actor, and instead the solution is in the limelight. The supplier's part is to stay in the background and maintain its position by working together with the buyer, and prepare the ground for the next stages in the process. The activities carried out on the buyer's side were spread within the organisation, and respectively perceptions were based merely on collective cognition.

When the project moves to the next stage, in which the actual variety of potential suppliers is evaluated, and the official negotiations start, the number of influencing dimensions of position increases. The stage *Setting up the bidding list & invitation to tender & information exchange* provided many possibilities for changes in the positions of the involved suppliers. The functional dimension is still important, but its nature changed towards details and highly technical matters, and merely conceptual discussions conducted earlier were replaced with quickly changing technical requirements by the buyer. Changing requirements put the competence of the suppliers on trial, and provided the buyer with possibilities to change its perception. The supplier was either able to create confidence in the

supply, or generate distrust while failing to perform during the interactions. Concrete project implementation elements were also involved and especially timing and financial matters were relevant. The identity dimension started gaining a foothold, as the principal matters relating to values on the buyer's and supplier's side were discussed and compared. Identity was built up from the values and trustworthiness of the supplier. There were no single events that influenced on the identity, and instead the dimension was more incremental by nature. If the identity dimension was incremental by nature, the relationship dimension provided more radical developments. During interactions, both the organisational and personal level events shaped the perceptions of the buyer. The buyer was expecting the supplier to show commitment, customer orientation and willingness to invest in the relationship, and failures to perform and reluctance to adjust influenced on these components and finally on the relationship dimension. It was also obvious that the supplier network, or its unclear roles and performance shaped the relationship dimension. There was a whole new component appearing during the stage, relationship history. The buyer's relationship with another supplier started influencing on the relationship dimension, and there was a continuous comparison going on between the suppliers. Personal level dimensions had importance both on the supplier's and buyer's side. Individual actors of the supplier had an influence on the perception of the supplier by the buyer via their personality and professionalism, and the buyer's individual actors evaluated how they felt working with the other party. The feelings shaped the buyer's evaluation process of the suppliers. On the buyer's side the positions of the individual actors were significant, especially now that the project was concrete, and it would be implemented. Decisions made by individual actors would influence on the success of the project implementation, and consequently on the positions of the actors after the project. New individuals on the buyer's side had their preferred ways of implementing the project. The perceptions on the buyer's side were formed by a group, the project team working as a cohesive unit, but still each individual actor followed his/her own procedures of perception.

The stage *Reception and analysis of suppliers' proposals and negotiation on all points* followed the previous stage from the position perception perspective, but there was a kind of finality to it. The functional dimension was still receiving much focus, and the events during the stage could either confirm or reshape the perceptions formed up until now. Confidence in the solution was based on the quality of the engineering work conducted and impressions gathered during visits to reference projects. Relationship and its components are vital during the stage, as this is the last chance for the supplier to convince the buyer on its commitment,

customer orientation and trustworthiness. Incidents during interactions and reference visits can turn perceptions in either direction. Relationship history is important from two perspectives: firstly, until now even a new relationship has some historical value, and this kind of fresh relationship with suppliers can be compared, and secondly, in case there would be a longer relationship with a supplier, it provides another kind of basis for making comparisons. The significance of experience increased again closer to the level it was at in the beginning of the process. There is, however, a difference on the buyer's side in the capability to evaluate the reference projects compared to the beginning of the process. After intensive and detailed engineering activities learning has taken place, and the buyer has more skills by which to assess the references. From the buyer's perspective visiting reference projects later in the process is much more valuable than at the beginning, when pure enthusiasm can replace objectivism in evaluation of projects. Much like during the previous stage, the supplier's individual actors can influence the perception of the supplier by the buyer via their ways of working and interacting. Professionalism and trustworthiness are the influencing components in the personal supplier dimension. The personal motives of the buyer's individual actors are more central, when the project marketing process is moving towards the end. Scoring of suppliers is based on how the actors see the suppliers from their own perspective and preferences. Especially uncertainties related to suppliers or their solutions create concerns. This stage still includes group perceptions, but the individual elements influence the coherence of the project team.

The stage *Final evaluation and selection of supplier and contract* was based on perceptions that had been formed during the earlier stages of the process. What was relevant at this point was the risk avoidance perspective. The functional position, with its components solution and confidence in implementation was important. In a way, the other dimensions were related to the functional dimension, due to the relationship history in which one of the suppliers possessed a known performance, and therefore the buyer could rely on them. The supplier had performed and implemented a project before in a satisfactory manner, and the historical knowledge was governing the cognition of the buyer. Identity of the supplier with the historical merits supported the perception, as the resources of the supplier were perceived positively. The governing perception was practically based on a single actor in the buyer's project organisation. The project manager's objective was to avoid any unnecessary risks in the supplier selection process, and relying on a known relationship served this objective well.

Even though the approach in the present study has been to split the project marketing

process into stages and analyse them, the process still produces one entity in which the separate stages are embedded. The supplier's position during a stage may be change significantly, but it is, however, always inherited to a certain extent from the previous stages. The final position of suppliers from the perspective of the present study, namely ending with the granting of the implementation of the project to a supplier, is accumulated during the project marketing process and shaped by events during the final stages.

6.2.2 Relative importance of dimensions

In order to be able to assess the relative importance of the dimensions of the supplier's position construct during the project marketing process, the number of coded passages in the data, are shown in Table 36. It gives the passages for those dimensions that were involved in most of the stages.

Table 36. Relative importance of dimensions based on number or coded passages/percentage of passages.

Dimension/Stage	Identification of requirements	Feasibility study & research & selection of suppliers for advice	Definition of specifications and compilation of terms and conditions	Setting up bidding list, invitation, information exchange	Negotiation	Final evaluation, selection of supplier and contract
Functional	47 / 30%	42 / 25%	11 / 69%	70 / 37%	45 / 24%	30 / 48%
Experience	38 / 24%	2 / 1%	0	3 / 2%	36 / 19%	0
Identity	26 / 16%	33 / 20%	0	5 / 3%	1 / 1%	5 / 8%
Personal level factors	19 / 12%	36 / 22%	5 / 31%	43 / 23%	61 / 33%	15 / 24%
Relationship	28 / 18%	53 / 32%	0	65 / 35%	43 / 23%	13 / 20%
Total	**158/100%**	**166/100%**	**16/100%**	**186/100%**	**186/100%**	**63/100%**

The functional position remains among the most important dimensions during the whole process. Experience and especially references are significant at the beginning of the process and at the point, when the negotiations are approaching the end. Identity plays a role at the beginning of the process, when solutions and suppliers of solutions are searched for. It would be wrong to say that the identity of the suppliers has no meaning at the end of the process, but it seems not to define, which supplier shall be selected. Dimensions that are related to individual actors remain on an important level during the entire process, but are highest during the most active interactions. The relationship dimension also stays on a high level

during the whole process, but its peaks appear during the stages, when the buyer has the highest need to learn about the solution.

6.3. Critical events during the project marketing process

In the previous subchapter we focused on how the composition of the supplier's position in the project marketing network evolved and developed while trying to solve a novel problem in the buyer's activity chain. This subchapter answers the third research question stated in Subchapter 1.2, namely: *What kinds of events shape the supplier's position in the project marketing network?*

Table 37 sums-up the typology of the critical events occurring during the project marketing process. It also presents examples of the different types of events.

Table 37. Critical events during the project marketing process.

Type of critical event	**Number of coded passages in data**	**Examples**	
		Positive	**Negative**
Incidents related to buyer's individual actors	2	- making one feel important	- humiliation
Incidents related to supplier's way of working	29	- responding quickly to requests - reacting to requests - doing best effort	- ignoring buyer's requests - response time to requests - investment in project - quality of work - allocating resources - hesitation in responses - delays in responses - rigidness concerning technical solutions - priorities
Incidents in interactions between supplier and buyer	27	- impressive presentation/solution - demonstrated professionalism - feel good factors - personal competences access to resources - showing lack of knowledge - showing honesty - showing professionalism	- unworkable solution - feel good factors - reluctance to adjust - commitment to do the best - communication barriers
Incidents related to network structure	15		- roles in supplier network

			- coherence of supplier network - quality of work in supplier network - changes in buyer network - introduction of competition - change in competition
Incidents related to changes in buyer's requirements	5	- surprises in costs - dynamism in requirement specifications	
Incidents related to solutions proposed	3	- unacceptable solution by competition	- changes in performance
Incidents related to conflicts in buying network	4		- quality and coverage of work - variation in preferences
Events related to visits to reference projects	16	- gaining access to users - getting hands on data and details - seeing good reference	- problems detected in reference projects - type of reference projects - features of reference projects - failure to add knowledge on solution - doubts about honesty
Events related to conflicts in buying network	4		- Suitability of solution - Priorities for meeting agenda - Dispute on earlier actions in process

Table 37 above indicates that there are four major groups for types of critical events occurring during the project marketing process, which are capable of shifting supplier's position.

The *first major type of critical events* is related to the supplier's way of working. Such events can either be positive, hence improving the supplier's position, or negative and making the supplier's position worse. Positive events include, for example, responding quickly to requests and doing their best efforts in order to help the buyer. Negative critical events, in turn, include events such as ignoring the buyer's requests, not allocating adequate resources, resulting in bad quality in work, and not adjusting to changes.

The *second major type of critical events* was related to the interaction process between the supplier and the buyer. The events of this type can be either positive or negative. Positive events include events, such as communicating in an outstanding way, behaving professionally, being honest, and giving the feeling to the buyer that one is easy to work with.

Negative events may comprise reluctance to adjust, building barriers between the buyer and the supplier, and not showing commitment to doing one's best.

The *third major type of critical events* was related to the network structure in the project marketing network. In the present study all these types of events were negative, and included events, such as unclear roles within the supplier network, lack of coherence in the supplier network, introduction of competition, and changes in the buyer network.

The *fourth major type of critical events* was related to visits to reference projects. A supplier can either create a positive or negative critical event with the visits. A good reference visit from the supplier's perspective improves or fortifies the buyer's confidence in the supplier or solution to the problem. A bad reference visit, on the other hand, creates doubts about the supplier's capability to implement a project, suitability of the solution, and features of the solution.

6.4 Implications for the development of theory

The purpose of the present study was to increase the understanding of the supplier's position in the project marketing network. Theory development has in essence been the driving force. The theoretical implications of the study are derived by answering the three research questions presented in the introduction. The implications can be argued to be derived from the entire research process, as in an abductive research process the researcher moves between the empirical and the theoretical worlds (Dubois and Gadde 2000), with both worlds being equally important and inseparable. It may be that an answer to a specific research question may derive more from one source than from another, but the entire research process is important in the study.

The researcher, in order to be able to argue about the theoretical contribution to existing theories, has to define a theory. Ghauri, Gronhaug and Kristianlund (1995) define it as "*A set of interrelated concepts, definitions, and propositions that present a systematic view of specifying relations among variables with the purpose of explaining and predicting phenomena*". The theoretical contribution (value of proposed change) according to Whetten (1989, 492) can be defined based on how the proposed change affects the accepted relationships between variables. Halinen (1994) called the theoretical contribution as value added to existing theories. Salo (2006, 222) has stated that evidence of a theoretical contribution exists when the concepts provided and their relations offer comprehensive factors and explanations of the phenomenon.

The first theoretical contribution of the study concerns the proposed new structure of the position concept. This study proposes that a supplier's position in a project marketing network is composed from the functional dimension (representing the solution), the experience dimension (representing the supplier's experience in the industry and solution), the relationship dimension (representing the relationship with the buyer), the identity dimension (representing the buyer's identity in the business), the personal supplier dimension (representing the supplier's individual actors), and the personal buyer dimension (representing the buyer's individual actors). The position concept in the INA research does not in any way take the solution to the buyer's problem into account (see e.g. Johanson and Mattsson 1985 & 1992; Henders 1992; Turnbull and Cunningham 1996), even though the problem and the solution to it are the driving forces for the existence of a project. The project marketing literature (see e.g. Jansson 1989; Cova, Ghauri and Salle 2002; Gustafsson 2002) widens the coverage of the position concept by including the solution perspective, but the importance of the individual actors remains unexplained. The role and importance dimension proposed in the INA literature (see e.g. Johansson and Mattsson 1985; Henders 1992) were not identified in the project marketing context. The experience dimension seemed to be very important in creating trust in the supplier's capability to supply the project. Research on references (see e.g. Salminen 1997; Salminen 2001; Salminen and Möller 2006) has indicated the importance of experience and especially reference projects, but it has not been included in the discussion concerning the position concept. The supplier selection literature to some extent proposes compatible attributes for supplier assessment (see e.g. Yussef and Zairi 1996; Choi and Hartley 1996; Dulmin and Mininno 2003) as in the findings of the present study (relationship, capabilities, identity related elements, and implementation of the supply), but the results provide a wide variation of proposals. Still the match between the present study and the supplier selection literature is not very close, as personal level elements are not included in it. What also contributes to the discussion about the position concept is the proposed hierarchical structure of it. The underlying components of the dimensions make it possible to operationalise the dimension and subsequently also the position.

The second contribution of the present study concerns the dynamic nature of the position concept. The processual approach to analysing the data results in findings that propose the concept of the position is not stable during the project marketing process, which is different from the earlier proposals concerning the position (see e.g. Johansson and Mattsson 1985 & 1992; Jansson 1989; Henders 1992; Turnbull, Ford and Cunnignham 1996;

Cova, Ghauri and Salle 2002). There have been some concerns regarding the snapshot type of use of the position concept (see e.g. Henders 1992), but even so the existing literature considers the position concept as a static one, and the dynamism present in a process in the project context is not taken into account like in the proposed PSDC model. The weight of the dimension and underlying components of the dimensions vary during the stages of the project marketing process. The marketing process itself is a dynamic process (see e.g. Holstius 1987; Cova and Holstius 1993; Cova, Salle and Vincent 2000; Cova, Ghauri and Salle 2002a&b), and in this respect the dynamism of the position concept along with the marketing process, seems logical.

The third contribution of the present study concerns the sources of change in the position of a supplier in a project marketing network. Critical events and changes initiated by them are not new in academic literature, but the majority of the existing research focuses on other contexts than project marketing, such as services (see e.g. Halinen, Havila and Salmi 1999; Edvarsson or Strandvik 2000; Havila and Salmi 2000). Owusu (2003) has discussed critical events in the project context. The contribution of the present study concerning critical events as sources of change is twofold. Firstly, it confirms the presence of the critical events also in the project marketing context, but secondly the present study proposes that the actions and behaviour of individual actors is a significant source of critical events in the project marketing context in addition to events related to organisations, as was proposed earlier (see e.g. Owusu 2003).

6.5 Managerial implications

The starting point of the study was a practical problem in the marketing of projects in a very traditional industry. Existing theories could not explain the formation of the supplier's position in the project marketing network, and there was a clearly identifiable gap in the knowledge. This subchapter sums up the managerial implications based on the results of the study and the conclusions drawn from the results. It has been mentioned several times in this study that the phenomenon being researched seems complicated and very challenging from both a theoretical and managerial perspective. The complicity is tightly tied with the context in which the phenomenon occurs.

The first managerial implication is derived from the conclusion drawn about the composition of the supplier's position in the project marketing network. There is no single dimension or component that explicitly defines the supplier's position in such a network.

Instead, the complicity of the position governs, and the number of dimensions and underlying components is high (see Figure 26 in Subchapter 6.1). The position is a result of the cooperative influence of the dimensions and the underlying components, and it should be taken into account while planning the marketing strategy for a project.

The second managerial implication is related to the structure of the position concept presented in Figure 26 (see Subchapter 6.1). A project marketer can assess a prospective project and its suitability based on the proposed position concept. By evaluating the components and consequently the resulting dimensions and finally the outcome, it is possible to evaluate the supplier's position, to see if a project is a potential one for the supplier.

The third managerial implication regards the dynamism of the position concept in the PSDC model in Figure 27 and Table 36 (see Subchapter 6.2). A supplier of a project can evaluate based on the model, what kinds of dimensions control the formation of the supplier's position during each stage of the project marketing process. It is vital to understand that we are dealing with a process, and an essential element of a process is continuous dynamism, or simply change. What is valid to one period, or stage in the process, may not apply during other stages, or may require changes in the marketing strategy. The marketing strategy should be prepared to adapt to the changes in the project marketing network, but the challenge is to identify changes and to be not only reactive, but also proactive.

The fourth managerial implication concerns the experience dimension and especially one of its components, references. The references are the most important way of convincing the buyer that the supplier has experience in the industry and solution finding. The visits to reference projects have different natures depending on which stage during the process the visit takes place. Visits during the initial stages are more general and the buyer is not necessarily able to evaluate the reference projects in detail. If the visits take place near the supplier selection, it is probable that due to the learning process, the buyer network is capable of identifying details requiring expertise as well (see Subchapter 5.1.5). The planning of the use of the references must take learning into account.

The fifth managerial implication concerns the follow-up to the project marketing process and especially the frequency of communication with the buyer network. A sudden change in it reflects a change in the relationship and the position of the supplier, as is illustrated in Table 33 (see Subchapter 5.1.6.2).

The sixth managerial implication is related to critical events capable of starting a change process, which influences the components of the dimensions, the dimensions, and finally the

supplier's position in the project marketing network (see Table 37 in Subchapter 6.3). The supplier cannot avoid critical events, and actually positive critical events are preferred in order to enhance the position. Negative critical incidents are the challenge for the supplier. The supplier cannot try to plan any corrective actions, if the critical events are not identified. The identification of the events requires a monitoring of the process so that the corrective actions can be started as soon as possible. Once the relationship with the buyer's project team is developed and the monitoring has generated adequate basic information, the marketing strategy can shift in a proactive direction. As a consequence, it may be possible to avoid some of the negative critical events, and generate positive ones, and shift the supplier's position to becoming a preferred business partner.

6.6 Suggested further research

There are avenues for future studies concerning the supplier's position in a project marketing network. This subchapter briefly proposes some areas, which provide interesting topics for further research.

Firstly, personal relationships seemed to be a very interesting world in the project marketing networks. The influence and importance of the relationships between individual actors should be explored. For example, social network theory could be applied in the studies.

Secondly, visits to reference projects had significant importance in the project marketing process. To explore the usage, influence, and governing factors of reference visits from the supplier's position perspective would further contribute to understanding the complexity of the position construct.

The third area proposed for further studies is the operationalization on the supplier's position construct. Being able to define the relationships between the parameters (position, dimensions, components) would provide with deeper understanding of the phenomenon of the present study.

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APPENDIX 1: PILOT CASE STUDY INFORMANTS

Informant	Position	Interview Date	Duration	Notes
P1-1	Managing Director of Mill	30.6.2005	120 min	
P1-2	Manager of Development Program	30.6.2005	70 min	
P1-3	Project Manager	30.6.2005	60 min	
P2	Project Manager	4.7.2005	45 min	On phone
P3	Project manager	4.7.2005	60 min	On phone
P4	Project Manager	6.7.2005	40 min	On phone

APPENDIX 2: PILOT CASE STUDY INTERVIEW FRAME

Interviewee
Position in organization
Education
Experience in project business

Project
Characterizing project business
Features
Differences compared with other b-to-b business
Challenges
Else

Suppliers
How do you position suppliers for selection in projects, is there any difference between projects? How about e.g. the storage system?
Dimensions
What is the influence of earlier knowledge on suppliers?
How do you compare resources/activities etc. in house the supplier or available via partnerships or relationships?
How do compare a group of companies working together versus a single company
What elements do you take into account?
Which elements are negative, positive, neutral?
How much weight on partners of the contractor?

Partnerships
How do you evaluate single partners of a contractor (systems integrator)?
What features are important: positive, negative, neutral?
Is there any feature in supplier's partners which would make you not select that supplier?

Personal relationships

What kind of role do personal relationships have in project business?

How do they influence on how the supplier is perceived?

Is there any difference in contractor/partner persons?

Which elements have a positive/negative influence on the supplier's perception?

APPENDIX 3: PILOT CASE CODES

	PRIMARY DOCS						
CODES	1	2	3	4	5	6	Totals
aikaisemmin tehnyt	0	0	1	0	1	2	4
aikaisempi asiakassu	0	0	0	0	0	1	1
aikaisempi hyvä koke	0	0	1	0	0	1	2
aikasempi huono koke	0	0	1	0	0	4	5
aikasempien lopputul	0	0	0	0	0	1	1
ammattitaito	0	0	2	0	0	1	3
attitude	0	0	0	1	0	0	1
best design	0	0	0	2	0	0	2
best solution	0	1	0	1	0	0	2
buyer's experience	1	0	0	0	0	0	1
comparison	0	1	0	0	0	0	1
competitive core	1	0	0	0	0	1	2
cooperation history	1	0	0	0	0	0	1
cooperation skills	1	0	0	0	0	0	1
creativity	3	0	0	0	0	0	3
decision making	1	0	0	0	0	0	1
detailed criteria	1	0	0	0	0	0	1
ensivaikutelma	1	0	0	0	0	1	2
experience	4	1	2	0	0	0	7
face	1	0	0	0	0	0	1
financial status	0	0	0	1	0	0	1
flexibility	0	0	0	1	0	0	1
good solutions	1	0	0	0	0	0	1
halu yhteistyöhön	0	0	0	0	0	1	1
henkilöityminen proj	0	0	0	0	0	1	1
henkilökohtainen ote	0	0	0	0	0	1	1
henkilökohtaisten su	0	0	1	0	0	0	1
impression	0	0	0	1	0	0	1
industry norm	0	1	0	0	0	0	1
industry specific	1	1	0	0	0	0	2
innovativeness	0	0	0	1	0	0	1
introduce new soluti	1	0	0	0	0	0	1
kynnys	0	0	0	0	0	1	1

lost	1	0	0	0	0	0	1
luottamuksen menetys	0	0	0	0	1	0	1
management	1	0	0	0	0	0	1
management skills	0	1	0	0	0	0	1
manager's personal m	0	2	0	0	0	0	2
managing project	1	0	0	0	0	0	1
mielikuva	0	0	0	0	0	1	1
motive to network	1	0	0	0	0	0	1
negative	1	0	0	0	0	0	1
negative influence	1	0	0	0	0	0	1
negative signal	2	0	0	0	0	0	2
network	1	0	0	0	0	0	1
network influence	1	0	0	0	0	0	1
panostus	0	0	0	0	0	2	2
people kill	1	0	0	0	0	0	1
perticipant's person	0	1	0	0	0	0	1
positive	2	0	0	0	0	0	2
positive network sig	1	0	0	0	0	0	1
pre-feasibility stud	0	0	0	0	0	2	2
price	2	3	0	0	1	0	6
process	1	0	0	0	0	0	1
professional buying	0	2	0	0	0	0	2
project specific	0	0	0	1	0	0	1
quality of work	0	0	0	1	0	0	1
reference usage	1	0	0	0	0	0	1
references	0	1	1	0	0	0	2
reliability	0	2	0	0	1	0	3
risk due people	2	0	0	0	0	0	2
riskien minimointi	0	0	0	0	0	1	1
roles	1	0	0	0	0	0	1
rule of game	1	0	0	0	0	0	1
shortlist	1	0	0	0	0	0	1
success	1	0	0	0	0	0	1
supplier's attitude	3	0	0	0	0	0	3
supplier's people	1	0	0	0	0	0	1
surviving strategy	1	0	0	0	0	0	1
taloudellinen uskott	1	0	1	0	0	0	2
trust	2	0	0	0	1	0	3
trustworthiness of r	1	0	0	0	0	0	1
twofold	1	0	0	0	0	0	1
tärkeä	0	0	0	0	0	1	1

uskottavuus	0	0	0	0	0	1	1
vakuuttavuus	0	0	0	0	1	1	2
weight of references	0	1	0	0	0	0	1
wide experience	1	0	0	0	0	0	1
yksi harvoista	0	0	0	0	0	1	1
Totals	53	18	10	10	6	26	123

APPENDIX 4: CASE INTERVIEW FRAME

1. Interviewee data
    - Position in the company
    - Working history
    - Participation in project

2. Phase: Identification of a need
    - Tell about the project in August 2004…September 2004
        i. Initial idea magnet cranes
            1. how did that come
            2. tell about the finding ideas & suppliers
                a. how do you find them
                b. what is important about the supplier
                c. persons
                d. how do make your opinion of supplier and their representatives
                    i. what is most important/least important
                e. how do you see different companies working together
                    i. main/sub
                    ii. agent
                    iii. origin
                    iv. what is important
        ii. Tamminen contacting, how do see agent's role
        iii. First meeting/presentation
            1. Different ideas brought in
            2. What is important then, why
            3. Tell about your impressions after the first meetings
            4. What did you like/dislike, why
            5. Anything special you can recall (positive/ negative)
                a. Why was it important

3. Phase: Pre-feasibility study

    - Tell about that phase
        i. Assisting questions
            1. Participating companies
            2. Negative experiences
            3. Positive experiences
            4. What is important in companies/individuals in that phase, and why

5. Which factors are most important in making opinion of suppliers
6. What is the topmost impression now of the suppliers
7. Do you recall positive/negative incidents influencing perception of suppliers

4. Identification of potential sellers

- Tell about that phase
    i. Assisting questions
        1. Tell about finding suppliers
        2. What matters, why
        3. In which order are the dimensions
        4. Role of individuals
        5. Role of partnerships
        6. Do you recall positive/negative incidents influencing perception of suppliers

5. Negotiations

- Tell about that phase

1. Participating companies
2. Negative experiences
3. Positive experiences
4. What is important in companies/individuals in that phase, and why
5. Which factors are most important in making opinion of suppliers
6. Role of individuals
7. Role of partnerships
8. What is the topmost impression now of the suppliers
9. Do you recall positive/negative incidents influencing perception of suppliers

6. Supplier selection
    - What was the decision finally based on
        i. Most / least significant factor
        ii. Was the project group unanimous
    - Do you recall any incident being on top in selection

APPENDIX 5: CODE LIST OF CASE

Bidding list and invitation to tender & info exchange		0
	Sources	References
Buyer network		
back to starting point	3	4
bad planning	2	6
internal problem	1	3
internal relationships	2	6
project status	1	4
surprise	1	1
uncertainties	2	2
Comparison		
assesment process	4	9
competition	3	6
Experience		
experience	1	2
successful reference	1	1
Functional position		
capacity	2	8
challenges	2	6
competence as supplier	4	10
compromise	2	2
confidence in equipment	2	2
delivery time	1	1
detailed solution	5	25
feasibility	5	16
Identity		
confidence in support	1	1
criteria on supplier	1	3
h & s	1	1
Personal level factors		
explanation	2	2
individuals	4	12
interaction	3	4
person scoring	4	10
personal position	2	4

professionalism	2	11
Relationship		
commitment	5	10
customer orientation	4	9
defence lines	1	1
failure to convince	3	8
investment	2	2
joint construction	3	12
nice to work with	2	8
relationship history	1	2
response		
better performance	1	
communication capabilities	3	
convincing	3	
disappointment	2	
dissatisfaction	2	
honesty	1	
more convincing	1	
Supplier network		
new actor	1	1
roles	2	2
source of change	1	1
team work	2	3
Feasibility study + research and selection of suppliers for advice		0
At stake		
at stake	2	4
gate keeper	1	1
need to learn	1	2
Comparison of suppliers		
comparison of suppliers	2	8
gambling	1	1
selection of supplier	1	2
Functional position		
feasibility	2	8
implementing solution	2	3
solution to problem	2	21
trust in solution	1	10
Identity		
accept situation	1	1

building blocks	1	8
co-operation capability	2	14
trustworthiness as supplier	1	10
Managing process		
coherence	1	1
decision maker	3	4
internal matters	1	2
manager's decision	2	2
missbehaviour	1	1
need of partners	1	1
normal procedure	1	1
roles	1	1
Personal level factors		
anti person	1	3
capability to demonstrate capability	1	7
fully personal	1	5
guts to say	1	1
honesty	1	2
personalization	1	3
preferred personal	1	1
trustworthiness on personal level	1	11
weight of personal relationship	2	3
Relationship		
attitude	1	1
change	1	2
customer orientation	2	12
favourable position	1	3
good guy	1	5
investment in relationship	3	17
working climate	2	13
Skills		
communication	2	7
network organization	1	1
professional touch	1	6
wider professionalism	1	12
Uncertainties		
customer uncertainty	3	21
panic	1	5
Final evaluation, supplier selection and contract		

Buyer network		
internal disbute	2	2
Decision making		
comparison	2	4
decision maker	6	22
decision making	6	24
group	2	2
justification	1	1
reporting	1	1
selecting	1	3
Functional position		
attributes	5	25
change	1	1
engineering	1	4
Identity	1	5
Personal level		
convincing	1	1
personal scoring	4	12
variation	1	2
Relationship		
known risks	2	3
relationship history	3	10
Supplier network		
professionalism	1	1
roles	1	3
Identification of requirements		0
Position	3	3
Experience		
bad reference	1	1
experience	3	15
experiences with suppliers	1	2
good reference	1	3
references	3	12
see references	2	3
share references with others	2	2
Functional position		

competing solution	2	4
solution finding	2	7
solution to problem	3	25
starting point	3	11
Identity		
enough resources	3	4
financial stability	1	1
known in industry	3	13
trustworthiness as supplier	3	8
Personal level factors		
personal touch	2	8
professional	1	10
salesman	1	1
Relationship		
bonds between persons	2	2
buyer's investment	1	1
customer orientation	3	5
first contact	1	2
gatekeeper	1	2
honest	1	2
Investment in relationship	3	3
relationship with competitor	2	3
trust	1	8
Role		
network v single	1	1
Uncertainties		
at stake for persons involved	2	7
buyer uncertainty	2	4
help	1	3
lack of knowledge	1	1
Reception and analysis of proposals and negotiation		0
Buyer network	2	2
internal	2	4
internal conflict	1	2
internal disagreements		
Experience		
bad reference	2	7
disappointing reference	2	4

distrust in reference	1	4
false policy	1	1
good reference	2	3
investing in relationship	1	2
joint construction	2	2
learning from reference	1	2
reference	1	1
reference expectations	1	1
relationship history	3	6
uncertainty	1	1
weight of reference	1	1
worrying reference	1	1
Functional position		
capacity	1	4
concept	1	2
conceptual risk	1	1
confusion	1	3
cost	1	2
criteria	4	9
distrust in solution	1	1
engineering quality	2	7
engineering risk	1	1
hard facts	1	1
how to interpret	1	1
loosing trust in solution	1	1
panic	1	2
performance	1	1
preferred design	1	2
solution	3	5
unreliable solution	1	1
weighting engineering	1	1
Identity		
hard facts	1	1
Personal level		
contradiction	1	1
convince	1	2
disapppoitment	2	2
failure to convince	2	6
favourite	2	6
feelings portion	2	3
human needs	1	1
impression	2	3

influence of persons	1	3
interest	1	1
interpretation	2	5
key meeting	2	2
memorable	2	3
open communication	1	1
personal motive	5	10
personal preferences	1	1
personal roles	1	1
personal roles (2)	1	1
persons	1	1
position collapse	1	1
professionalism	3	5
understanding	2	2
Relationship		
best effort	1	1
commitment	3	4
communication break	2	5
customer oriented	3	3
different wavelength	1	1
dream supplier	1	1
experience	1	1
failure to cooperate	3	3
failure to respond	1	2
honesty	1	1
identification	2	2
irritation	1	1
negative impression	3	4
suspicions	2	2
tactics	1	1
time advantage	1	1
trust	2	3
trustworthiness	2	4
why again	2	3
Sources of changes		
interaction		7
internal conflict		3
network structure		1
reference project		16
solution related		1
way of working		5
Supplier network		

network doubts	1	1
network negative	1	1
one face	1	1
one responsible	1	1
policy	1	1
roles	1	2

APPENDIX 6: CASE COMPANY - Tender evaluation - all disciplines

Scoring:		
	Not provided/totally inadequate	0
	Unsatisfactory, difficult/expensive to improve	1
	Partly meets requirement, but difficult to improve at detail design	2
	Partly meets requirement, could be improved at dtl design	3
	Meets requirement, but no reserve.	4
	Exceeds requirement	5

Discipline:- LAYOUT

Comments per tenderer:

Attribute Considered	**Focal Company**	Score	**Lux**	Score	Weight	**Focal**	weighted Score	**Lux**	weighted Score
Height of transfer equipment under doubl	6250	4	5856	5	3	4	12	5	15
						0	0	0	0
Infeed	Good	5	Ground level + gap	4	5	5	25	4	20
§						0	0	0	0
Outfeed	High (2.1m)	3	G/Level	5	5	3	15	5	25
						0	0	0	0
Reject	Best (E side)	5	Mid Bay	5	3	5	15	5	15
						0	0	0	0
Positioning	On aisle entry	5	At transfer	4	3	5	15	4	12
						0	0	0	0
Measure 1	OK - Desp bay	5	Desp bay	5	3	5	15	5	15
						0	0	0	0
Measure 2	OK - reject rack		OK - reject rack		3	0	0	0	0
						0	0	0	0
Measure 3	OK, W side		At transfer		3	0	0	0	0
						0	0	0	0
Speed in/out	Fast	5	Just meets cycle time	4	5	5	25	4	20
	(Bottleneck @ vert conveyor?)					0	0	0	0
Stacker crane cycle speed	42-55 sec	5	51-67 sec	4	5	5	25	4	20
						0	0	0	0
Utilisation (Max possible?)	88%	3	Possible 98%?	4	5	3	15	4	20
						0	0	0	0
Racking levels	some loss	1	OK	5	5	1	5	5	25
						0	0	0	0
							167		187

Discipline:- Mech - Stacker Cranes

	Comments per tenderer:						weighted		weighted
Attribute Considered	**Focal company**	Score	**Lux**	Score	Weight	**Focal**	Score	**Lux**	Score
Drive power (kW) - Travel	100kw	4	94kw (2x47)	5	2	4	8	5	10
- Hoist	100kw	4	190kw (2x95)	5	2	4	8	5	10
- Forks	2.2kw each (no off?)	4	8 x 4kw ea = 32kw	5	2	4	8	5	10
Weight	55 te gross	4	70 te	5	2	4	8	5	10
						0	0	0	0
Positioning accuracy	X,Y +/-5mm; Z +/- 2mm	4	Y= +/-1mm	5	5	4	20	5	25
						0	0	0	0
Main components - Traverse	OK - 1 drive	4	OK - 2 drives	5	5	4	20	5	25
- Masts	OK	4	OK	5	5	4	20	5	25
- Lifting carriage	OK - folding cab roof	4	OK - 2 hoists?	5	5	4	20	5	25
- Top Carriage	Not described	4	OK	4	5	4	20	4	20
	Larger GA drq reqd		Larger GA drq reqd			0	0	0	0
Overall dimensions - height	not given		28.25m			0	0	0	0
- length	not given		not given			0	0	0	0
- width	not given		not given			0	0	0	0
Top prong to top of building	2750	5	3255	4	3	5	15	4	12
Lowest level (above floor)	2100	4	1700	5	3	4	12	5	15
Aisle equipment	Bottom buffers	4	Bottom buffers	4	3	4	12	4	12
						0	0	0	0
Safety Equipment - X	L/switches	4	L/switches	4	5	4	20	4	20
- Y	L/s + Lift type em. Brake	5	anti tilt & slack rope det.	5	5	5	25	5	25
- Z					4	0	0	0	0
Mtce access	open ladder/harness	3	open ladder/harness	3					
							216		244

Discipline:- Mech - Transfer Equipment

Attribute Considered	Comments per tenderer: **Focal company**	Score	**Lux**	Score	Weight	**Focal**	weighted Score	**Lux**	weighted Score
Desp bay R/T ($)	Indiv. drives, 2m pitch (opt)	5	Indiv. drives, 2m pitch	5	3	5	15	5	15
	Rollers similar to extg.		Rollers similar to extg.			0	0	0	0
	(Q - individual drives?)					0	0	0	0
	(Q - if a motor trips, will the associated roller(s) freewheel?)					0	0	0	0
Measurement (*)	"Photocell grid"& R/T encoder	3	Photocells, x,y,z +/-50mm	4	3	3	9	4	12
	Accuracy/resolution not given					0	0	0	0
Weigher	Not described	0	Lifting table, +/- 0.1te	4	3	0	0	4	12
						0	0	0	0
						0	0	0	0
	(Q - Better descriptions needed of all weighing & measuring systems)					0	0	0	0
R/T to chain conveyor	----------All similar to $----------					0	0	0	0
						0	0	0	0
Chain conveyor	11 chains	4	1 drive.	4	4	4	16	4	16
	4 sections, 2 drives ea		No. of chains not stated			0	0	0	0
			(drg shows 12 driven in pairs?)			0	0	0	0
			(Clarify?)			0	0	0	0
Reject rack & Measure 2	----------All similar to $ & *----------					0	0	0	0
						0	0	0	0
Measure 3 - Length/Position	Photocells	4	Fixed & moveable buffer plates*	5	3	4	12	5	15
- Width	Photocell & chain conv. Encoder		Not described			0	0	0	0
- Height	Ultrasonic		Not described			0	0	0	0
- Weight	Not described		Not described			0	0	0	0
			* Posn. +/-10mm, L+/- 25mm			0	0	0	0
Bundle infeed - Elevate	Vertical chain conveyor	4	2x C frame o/hd carriers	5		4	0	5	0
- Transfer	Overhead carriage with R/T		common to above			0	0	0	0
- Into racking	4 Roller tables-high level		4 infeed carriages			0	0	0	0
						0	0	0	0
Bundle Outfeed - Out of racking	4 Roller tables-low level	4	4 outfeed carriages	4		4	0	4	0
- Into Fin Bay	Carriage with lift/lowering R/T		Common to t/f in			0	0	0	0
						0	0	0	0
						0	0	0	0
Group table	R/T & 4 section chain bank	3		5	4	3	12	5	20
Fencing provision		4		4	5	4	20	4	20
Maintainability		4		5	5	4	20	5	25
							104		135

Discipline:- Electrical & Control

Attribute Considered	Comments per tenderer: **Focal company**	Score	**Lux**	Score	Weight	**Focal**	weighted Score	**Lux**	weighted Score

						0	0	0	0	
PLC Equipment	Still Compact Logix or Siemen	4	Control Logix	4	5	4	20	4	20	
						0	0	0	0	
PLC Software	Not covered	3	Not covered	0	4	3	12	0	0	
						0	0	0	0	
HMI's	3 Warehouse terminals	5	W/house terms and Panel View	4	3	5	15	4	12	
						0	0	0	0	
Inverters	Siemens	3	Siemens	3	2	3	6	3	6	
						0	0	0	0	
Operator desks and controls	Little mention	2	Little mention	1	3	2	6	1	3	
						0	0	0	0	
CCTV	Not covered	1	2 per stacker	4	2	1	2	4	8	
						0	0	0	0	
Networking	Basic detail only	4	Basic detail only	2	2	4	8	2	4	
						0	0	0	0	
General cabling	Not covered	2	Some detail	3	3	2	6	3	9	
						0	0	0	0	
Despatch display	Still 12 character only	1	Understood	4	3	1	3	4	12	
						0	0	0	0	
Barcode readers	Understood	4	Not covered	0	3	4	12	0	0	
						0	0	0	0	
Measuring stations	Understood	5	Detailed	5	4	5	20	5	20	
						0	0	0	0	
Statutory & Corus regulations	Some - no BS 7671	4	Basic detail only	2	4	4	16	2	8	
						0	0	0	0	
Electrical safety systems	Little mention	2	Little mention	1	5	2	10	1	5	
						0	0	0	0	
Documentation	Little mention	4	Little mention	1	4	4	16	1	4	
						0	0	0	0	
							152		111	

Discipline:- Warehouse Management

Attribute Considered	Comments per tenderer: **Focal company**	Score	**Lux**	Score	Weight	**Focal**	weighted Score	**Lux**	weighted Score
Reference to URS	Some detail	3	Specific reference	5	5	3	15	5	25
						0	0	0	0
Expandability	No mention	0	Little mention	1	3	0	0	1	3
						0	0	0	0
Computer Hardware	Ok	5	Ok	5	4	5	20	5	20
						0	0	0	0
Software - Operational	Some detail	2	Some detail	2	5	2	10	2	10
						0	0	0	0
Software - Technical	Not preferred	2	Generally ok	4	4	2	8	4	16
						0	0	0	0
Software - Ownership	ESCROW proposed	3	All source code included	5	4	3	12	5	20
						0	0	0	0
							65		94

	Focal	weighted Score	**Lux**	weighted Score
LAYOUT		167		187
Mech - Stacker Cranes		216		244
Mech - Transfer Equipment		104		135
Electrical & Control		152		111
Warehouse Management		65		94
Grand total		704		771

APPENDIX 7

CASE INTERVIEWS

Informant	Informant position	Interview date	Interview duration
Dir	Director of operations in case company, project steering group member	10.11.2006	60 minutes
Proj	Project manager since August 2005, project steering group member	10.11.2006	90 minutes
Manu	Production development manager in Profiles (user of the project)	9.11.2006	120 minutes recorded + 90 minutes lunch
Ini	Project manager until August 2005, design engineer since August 2005	9.11.2006	45 minutes
Ele	Electrics and controls specialist in the project since August 2005	9.11.2006	60 minutes
Purch	Corporate purchasing manager in capital investment projects	9.11.2006	50 minutes

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