



Antecedents of project partnering in the construction industry – The impact of relationship history



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ABSTRACT

This paper aims at increasing the understanding of construction partnering and relationships in project marketing by analyzing the impact of previous relationships among project stakeholders on the choice of partnering and of partners. Based on a conceptual framework combining the insights of the Industrial Network Approach with the model of project co-development proposed by Crespin-Mazet and Ghauri (2007), the paper analyzes a focal partnering project and its connections to other projects. It concludes that the context of the relationships seems to influence the customer's selection of partnering and partners. The paper's contributions address the relative importance of the project's functional challenge and relational congruence in the project network on the customer's procurement choice. For a first partnering agreement, this choice seems primarily influenced by the project's functional challenge while the subsequent choice of partners relies on high relational congruence. Once a positive experience of project partnering gained, the customer's choice seems primarily influenced by the relational congruence in the project network so as to harvest previous investments (resource adaptations) made in their relationship with a given partner. The paper highlights several contributions to the construction partnering literature and project marketing literature.

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1. Introduction

Since the mid-1980s and its introduction in the USA (Bresnen & Marshall, 2000; Cain, 2004; Sai-On, Thomas, Shek-Pui, & Henry, 2003), partnering in the construction industry has become an increasingly applied type of business model and project marketing strategy (Crespin-Mazet & Ghauri, 2007; Hong, Chan, ASCE, Chan, & Yeung, 2012). Introduced as an attempt at being more innovative and at overcoming the industry's performance problems due to adversarial relationships (Barlow & Jashapara, 1998), partnering corresponds to an alternative coordination mode (Dubois & Gadde, 2000) to the sequential project development process. Based on better process integration and supply chain management (Beach, Webster, & Campbell, 2005; Saad, Jones, & James, 2002), partnering promotes the use of collaborative, more open and less hierarchical relationships between project stakeholders (Alderman & Ivory, 2007). Cheng, Li, and Love (2000) identify several critical factors in a partnering agreement e.g. effective communication, conflict resolution, adequate resources,

management support, mutual trust, long-term commitment, coordination and creativity. For Nyström (2008), trust and mutual understanding are the most important components.

Concerning its benefits, partnering is often presented as an opportunity to increase productivity and quality, reduce transaction costs and project times, improve customer satisfaction and stability (Bresnen & Marshall, 2000), facilitate joint risk management and allocation, reduce disputes (Rahman & Kumaraswamy, 2004) and enhance learning (Love, Tse, Holt, & Proverbs, 2002). However, these benefits can only be achieved if partnering is applied in the "right situations for the right reasons" (Eriksson, 2010: 905). Hence, several contributions also stress partnering failures and implementation problems, and note the industry's difficulties to move from an adversarial to a cooperative mode (Eriksson & Pesämaa, 2007) due to a lack of understanding of the prerequisites of partnering (Saad et al., 2002). The lack of a universal definition of partnering is also perceived as one of the major sources of its implementation problems (Eriksson, 2010). This is explained by several factors: the complex and multi-faceted aspect of partnering (Nyström, 2008), the lack of maturity of the concept (Li, Cheng, & Love, 2000) and the lack of homogeneity in terms of implementation and practices. As a consequence, various approaches of partnering can be found in the literature (Eriksson, 2010): some focus on its philosophy and informal aspects (involving commitment, trust, good faith, etc.)

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while others focus on its procedures, processes and tools to engineer partnering on a specific project (Bygballe, Jahre, & Swärd, 2010; Lu & Yan, 2007).

The literature (Barlow & Jashapara, 1998; Eriksson, 2010; Saad et al., 2002) also highlights significant differences in the scope of partnering (project-bound versus more long-term relationships). The early definition of partnering proposed by the Construction Industry Institute (CII), (1991: 4) refers to a long-term commitment between two or more organizations which requires “changing from traditional relationships to a shared culture” and is characterized by “the development of trust, dedication to common goals and an understanding of each other’s individual expectations and values”. Even though this definition is deemed to be widely adopted (Bygballe et al., 2010; Hong et al., 2012), most of the contributions on construction partnering refer to short-term, cooperative agreements between parties on a single project (Bygballe et al., 2010). This induces a discrepancy between what partnering was meant to be and what it actually seems to be in practice. This has led some authors to distinguish between two types of partnering in construction: project partnering and strategic partnering depending on the number of projects for which the relationships are established (Cheng & Li, 2001; Langdon & Consultancy, 2006). In project partnering, the scope of the relationship is a single project (Manley, Shaw, & Manley, 2007; Walker, Hampson, & Peters, 2002) while strategic partnering is based on long-term business arrangements and commitment across several projects (Chan, Chan, & Yeung, 2009). According to Cheng, Li, Love, and Irani (2004), strategic partnering is process-oriented as it emphasizes the continuity of reciprocity among parties, while project partnering is more result-oriented through its focus on the achievement of the project’s goals and performance. Some authors consider project partnering as a first step towards strategic partnering (Cheng et al., 2000) but recent research seems to contradict this view. Gadde and Dubois (2010: 254) advocate that: “prevailing supply arrangements established to handle the particular conditions in the construction industry make it unlikely for partnering to reach outside the individual project”.

Hence, there is still a lack of clear understanding about the dynamics of relationships leading to the choice and successful development of partnering both within a project but also across projects. In this paper, our intent is to help fill this research gap by contributing to two main streams of research: firstly, construction partnering literature, through an analysis of the relationship dynamics supporting the customer’s choice of partnering and partners and secondly, project marketing literature, by analyzing the “sleeping phase” of customer–contractor relationships (Hadjikhani, 1996) between various project episodes.

2. Research problem

Bygballe et al. (2010) show that that most partnering literature over the last 20 years focuses on project partnering between a contractor and a customer (i.e. the dyad) with little emphasis put on relationship dynamics and their historical development over time. As summarized by Bygballe et al. (2010: 242): “None of the papers deal with partnering in a strategic, multi-actor and purely evolutionary sense”. Hong et al. (2012) confirm this analysis through a critical review of partnering research in construction journals from 1989 to 2009.

This short-term and dyadic vision seems however more and more challenged as it is deemed to restrict the performance and adoption of partnering on a wider scale and also fails to grasp the factors that foster or hinder the successful development of partnering at a strategic level (Gadde & Dubois, 2010). To grasp the duality of the dynamics of interaction between actors both at project level and strategic level in project deals, Dubois and Gadde (2000a) introduce a distinction between the temporary network (project network) and the permanent network or milieu of stakeholders (Cova, Mazet, & Salle, 1996). Dubois and Gadde (2002a) show that in the construction industry, most adaptations occur at temporary network level to adjust standardized inputs to

local and site specific conditions whereas the permanent network is generally characterized by a lack of adaptations and limited interaction between actors (standardized exchange; search for independence). They thus advocate that tightening the couplings in the permanent network i.e. establishing long-term relationships across projects and loosening the couplings in the temporary project network could enhance performance rather than hinder it. Love et al. (2002) focus on the positive effects of partnering in terms of learning, and also emphasize the requirement for a long-term orientation to enable continuous improvements based on constant interaction and experience feedback: “When partners are not known to each other, there may be (implicitly or otherwise) ambiguity over, e.g. project goals, and any agreement reached is likely to be tentative and open to re-interpretation” (Love et al., 2002: 199). Finally, Bygballe et al. (2010) outline that the adaptations required in a partnering project might limit adaptations in other projects, and therefore the benefits that could be gained from closer collaboration at a strategic level. All these contributions converge towards the need to analyze the history of relationships between the actors involved to better understand the choice of partnering and partners in a partnering agreement, but also the factors leading to the successful development of this procurement mode.

Based on the definition that partnering is a formal agreement covering a single project, the purpose of this paper is to increase the understanding of project partnering in the construction industry by analyzing the impact of previous relationships among the actors of the project network (customer, contractor, key suppliers) on the choice of a partnering agreement and on the choice of partners. Based on the detailed case study of a partnering project related to three other projects (both non-partnering and partnering), this paper addresses the following research question:

How does the history of relationships between actors influence the choice of partnering and of partners on a specific project?

Concerning the choice of partnering, we are particularly interested in understanding the relative importance of the project’s functional challenge (risks) and relational congruence in the project network dictating the customer’s decision for such a procurement mode (Crespin-Mazet & Ghauri, 2007) and in seeing how the two factors are combined. Concerning the choice of partners, our aim is to analyze how the various adaptations made by the actors over the course of their relationship influence the selection of the actors with whom the partnering agreement is developed.

The paper is organized as follows. A literature review on the role of business relationships in project business, on their substance in terms of resource adaptations and on the antecedents of project partnering as a procurement strategy in the construction industry help us ground a conceptual framework for addressing our research question. This framework is based on an inter-organizational and interactive perspective, the Industrial Network Approach – INA – and more specifically on its resource dimension (Håkansson & Waluszewski, 2002). Thereafter follows the methodology used to collect and analyze data based on an in-depth case study of a partnering agreement and the relationships developed between its key actors within, before and after this project. The case study and its analysis highlight the paper’s contribution in terms of partnering antecedents, i.e. the interaction processes that precede the choice of partnering as a procurement mode as well as the choice of partners. The paper concludes on the effect of relationship history in the project network on the choice of partnering and partners; it also develops research limitations as well as implications for further research and for managers.

3. Theoretical considerations

This section builds on several streams of research: the project marketing literature developed by the International Network for Project Marketing (INPM) (Skaates & Tikkanen, 2003), the partnering literature within construction research, and the Industrial Network Approach

developed by IMP scholars (Axelsson & Easton, 1992; Håkansson, Ford, Gadde, Snehota, & Waluszewski, 2009; Håkansson & Snehota, 1995).

3.1. Relationships and project business

The researchers from the INPM have for a long time emphasized the importance of relationships in project business while recognizing that the management of such relationships needs to be adapted to the discontinuity of relationships characterizing project business. Several scholars from this network, which is affiliated to the IMP group of researchers (Ojansivu, Alajoutsijärvi, & Salo, 2013; Skaates & Tikkanen, 2003), consider relationship management as one of the major strategic issues faced by project marketers. Based on several studies (Hadjikhani, 1996; Skaates, Tikkanen & Lindblom, 2002), they show that the success or failure of individual projects often effects the long-term development of buyer–seller relationships. They therefore recommend to project marketers to analyze the implications of single projects for subsequent project marketing efforts. This implies viewing the project as an episode in the relationship between a project buyer and a supplier and managing relationships, not only during project development phase but also during its ‘sleeping phase’ i.e. in between two project episodes (Hadjikhani, 1996). These relationships often go beyond the scope of the customer–contractor relationship and may involve both business and non-business actors (Cova & Salle, 2005). Their management takes place over a longer period of time than the project itself and encompasses “multiple project activity in a broader economic, social and political business network” (Owusu & Welch, 2007; Tikkanen, 1998; Tikkanen, Kujala, & Arto, 2007).

For a given supplier, the management of this “portfolio of relationships” covers two levels (Tikkanen et al., 2007): the customer relationship portfolio to create and maintain relationships with attractive and profitable customers, and the network relationship portfolio to “create a strong position in the network and to gain access to external resources and competencies that are required for delivering value to the customer” (Ibid: 200). Having stated the importance of relationship management in project business, these scholars however do not actually detail how these relationships develop in practice and how this impacts the choice of partnering and of partners on future projects (Tikkanen et al., 2007).

3.2. Relationships and partnering

Several recent contributions suggest that previous cooperation and informal ties between parties may informally influence the choice of partners in a partnering deal. Gadde and Dubois (2010: 257) note that “buyers and suppliers in construction in most cases have been involved in business with each other” even though they may not be tied by any formal commitment. The relationship is however characterized by its intermittence due to the discontinuity of transactions characterizing project deals (Cova, Ghauri, & Salle, 2002) which leads to “sleeping phases” in the relationship and to uncertainty regarding future business (Hadjikhani, 1996). Kaluarachchi and Jones, (2007: 1053) studied a strategic partnering initiative and showed the importance of understanding the dynamics of relationships so as to avoid “a breakdown of trust and confidence between partners”. They highlight that lack of clear communication and continuous improvement systems prevent learning from each other and result in difficulties in achieving the performance objectives of partnering. Eriksson and Nilsson (2008) illustrate that previous experiences between a contractor and a client (called “social embeddedness”) might have a positive influence on the development of partnering and in particular on the development of trust: “The social embeddedness was probably a prerequisite for some procurement decisions. In joint specification it helps a lot if the contractor has previous experiences of the client and its demands, and joint selection of sub-suppliers is enhanced if client and contractor have mutual knowledge and previous experience of the chosen companies” (Ibid: 232). For them, a long-term perspective of partnering is required

to continuously improve procurement procedures. Finally, Castro, Galan, and Casanueva (2009: 819) studied the antecedents of construction project coalitions and also concluded that “previous social and economic relations can generate the necessary information and trust for the selection of whichever partner is considered the most suitable for the development of the joint project”. For them, firms are more likely to form associations with other firms when they have previously worked together on similar projects. Previous cooperation and informal ties between parties are thus increasingly recognized as influencing the selection of partners in partnering deals.

3.3. Relational congruence as an antecedent of partnering

The bulk of literature in construction highlights the characteristics of the project in terms of complexity, risks and uncertainty as the most important factors explaining the choice of partnering by a customer. As summarized by Eriksson (2010: 915): “partnering should be used in complex and customized projects with high uncertainty and long duration coupled with severe time pressure. The higher the levels of these project characteristics, the more cooperation and less competition is required”.

In their model of project co-development (i.e. project partnering) in the construction industry, Crespin-Mazet and Ghauri (2007) formally integrate these risks into what they call the “project’s functional challenge” but also highlight the importance of the “relational congruence in the project network” as an antecedent for the choice of project partnering. Relational congruence corresponds to the level of trust, commitment and shared goals characterizing the relationships between the supplier, the customer and other key actors in the project network. For the authors, “the customer’s willingness to engage in co-development (or partnering) requires the development of relational congruence in the project network as well as a high level of project’s functional” (Crespin-Mazet & Ghauri, 2007: 161). Contrary to most partnering contributions, the authors thus go beyond the customer–contractor dyad and enlarge the scope of partnering to the project network (Bygballe et al., 2010; Dainty, Briscoe, & Millett, 2001; Dubois & Gadde, 2000; Hong et al., 2012). Depending on their interests, project network actors may try to influence the customer’s choice of partnering. The success of such endeavors depends on their resources and position in the network (Easton, 1992; Hägg & Johanson, 1983). This analysis based on the actors’ resources and network position has led Crespin-Mazet and Ghauri (2007) to conclude that the ARA model – Actors, Resources and Activities – based on the INA is appropriate when studying the dynamics of interaction between actors in the project network and in particular to “integrate the history of the relationships between its actors” (Ibid: 161). Even though they do not explicitly list this factor in their model, they stress the relevance of an historical approach to the relationships between the actors involved in a partnering project.

The interests of the INA for our research question have also been emphasized by Bygballe et al. (2010: 246) as it is deemed to “provide valuable insights into the substance and function of relationships in construction and can form an important basis for further development of the partnering concept”. For the INA, business relationships are seen as a way to provide access to and relate the resources of two or more firms (Baraldi, Gressetvold, & Harrison, 2012) knowing that the value of a resource depends on the other resources with which it is combined (Håkansson & Snehota, 1995). As described above, partnering requires close couplings between actors and specific interfaces of their resources (e.g. close coordination, common decision making processes, process integration) and for the INA, the deeper, the more specific and the stronger these interfaces are (Baraldi & Waluszewski, 2005), the more difficult it is to break them (Håkansson & Waluszewski, 2002: 34). In short, the depth of resource interfaces cements the relationship and increases its longevity.

3.4. Relationships as resource adaptations

A large number of empirical studies performed by scholars within the INA have shown that firms base a substantial part of their operations upon the resources of other firms, and thus continuously engage in resource interaction across firm boundaries (Håkansson, 1982; Henders, 1992; Laage-Hellman, 1997). These resources have been classified as being either mainly technical, e.g. products and facilities, or mainly organizational, e.g. business units and business relationships (Håkansson & Waluszewski, 2002).

Baraldi et al. (2012: 267) list four “core assumptions” about resources and their value(s) for actors: 1) resources can only be considered as such if both suppliers and buyers can assign a current or potential value to them (double facet), 2) the contexts in which resources are developed, produced and used play a key role in providing them with particular features and economic value(s), 3) their current value is always dependent on which other resources they interact with, and 4) their features and value(s) change depending on which “new” resources they interact with. The combination of a resource with other resources (which grants it value) requires interactions between suppliers and buyers (Baraldi et al., 2012). Therefore, the most important resource of a firm is its business relationships with other firms, as this is the means through which other resources can create benefits (Håkansson & Johanson, 1987; Håkansson et al., 2009). In this perspective, the substance and value of business relationships lie in the resource adaptations that they enable which shape the features and values of the total set of resources of the interacting firms (Ibid.).

As engaging in business relationships is the most central value-creating process for firms, the resource adaptations which this entails have important consequences for the firms and their actions. In trying to achieve more efficient operations and decrease the risk of new investments, firms often engage in repeated resource adaptations over time (Håkansson & Snehota, 1995), which creates more or less “heavy” or “deep” interfaces between the actors and their resources. Therefore, business relationships can be difficult to abandon; first, they can represent large investments (Håkansson & Waluszewski, 2002), and second, they only hold a specific value as long as they are maintained or further developed (ibid; Pardo, 2012). Consequently, to gain return on investment of resource adaptations, firms need to continue to interact in specific ways. One typical feature of such continuing business relationships is the development of trust. Through the social interaction of combining various resources, individuals become committed and gain confidence in each other; “trust emerges as one of the salient factors influencing the interaction in intercompany relationships” (Håkansson & Snehota, 1995: 10). Baraldi et al. (2012: 267) state that “the longer the interactions that have combined two resources together, the higher the chance that the resources have been more closely adapted by means of modifications”, and that the depth of resource interfaces is “proportional to the level of mutual adaptation and the amounts invested in a specific resource combination.” The difficulty to “break” a business relationship is proportional to the level of mutuality of the parties, the amount of investment made in resource adaptations, and the period of time for which the parties have interacted. These three factors are also directly connected to the benefits that can be gained from the business relationship, i.e. from a certain level of interaction (e.g. Håkansson & Prenekert, 2004), such as cutting costs through more effective inter-firm operations (Håkansson & Waluszewski, 2007), learning/teaching (Cantillon, 2010), new knowledge (Håkansson, 1990; Håkansson & Waluszewski, 2007), innovation (La Rocca & Snehota, 2014; Lundgren, 1994) and the development of trust among the actors involved (Håkansson & Snehota, 1995).

Furthermore, while interaction between two parties can have indirect effects for their respective suppliers and customers, the direct engagement of third parties have been shown to result in several parties adapting, learning and developing collectively (Håkansson et al., 2009). In this “highest level of interaction”, a network of actors mutually adapt

their resources in the creation of a specifically designed resource constellation (Håkansson & Prenekert, 2004).

3.5. Conceptual framework

Our conceptual framework combines the insights of the INA on the substance of business relationships (i.e. resource adaptations over time) with the model of project co-development proposed by Crespin-Mazet and Ghauri (2007). As shown in Fig. 1, the target of our framework is how the substance of business relationships affects the factors of relational congruence in the project network and the customer's perception of project's functional, and in turn how these three factors affect the customer's behavior in terms of choice of partnering as a procurement mode and choice of partners.

3.5.1. Customer's purchasing behavior

Consistent with the findings of Crespin-Mazet and Ghauri (2007), the choice of project partnering by the customer is here viewed as requiring a high level of perceived functional challenge together with a high level of relational congruence in the project network. The choice of a given partner mostly depends on the relational congruence with this partner which in turn is the result of both on-going interactions on that given project (i.e. during the upstream stages of project development and negotiation) but also of interactions and adaptations made on previous projects. The substance of these past relationships influences the level of risks perceived by the customer both at functional level (functional challenge) and relational level (relational congruence). Faced with a risky and challenging project, the customer will be more inclined to work with a partner with a track record in efficiently managing similar functional risks on previous projects and who has shown themselves to be trustworthy, committed and sharing identical goals and values with the customer. If positive, the history of its relationships with a given supplier then acts as a risk reducer for the customer.

3.5.2. Substance of relationships between the customer, the contractor and the project network

We are analyzing two sets of factors that will generate a more or less high level of perceived project's functional challenge by the customer and of relational congruence in the project network. First is the level

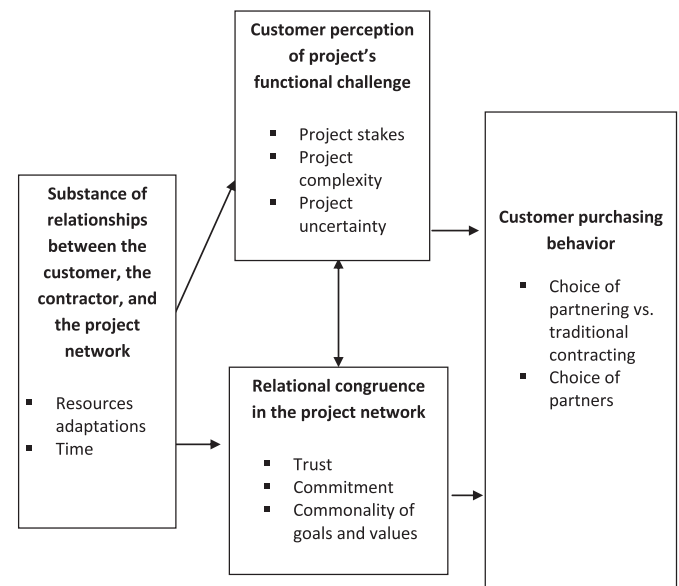


Fig. 1. The conceptual framework. adapted from Crespin-Mazet and Ghauri (2007)

of resource adaptations made by the actors to efficiently work with each other. These resources may be technical (products, facilities) or organizational (business units and business relationships). When combined, these resources may be adapted by the actors providing the substance and value of business relationships. They represent investments for the actors who try to “amortize” them over time whenever possible. Hence time is the second factor characterizing the substance of relationship. The length of interaction (various episodes) influences the level of resource adaptations that can be made by actors (investments) and consequently, the desire to perpetuate the relationship across projects so as to harvest them.

3.5.3. Customer perception of project's functional challenge

We use here the same set of factors as the three proposed by Crespin-Mazet and Ghauri (2007): 1) project uncertainty in terms of product, process (e.g. the product delivered does not match the design), and purpose (e.g. the client's needs change from what was originally envisaged); 2) project complexity in terms of delay (timing), team coordination (team size, number of specialized trades, specific environmental conditions on the site etc.), and level of innovation versus standardization of the product to be realized; and 3) project stakes in terms of project impact on the customer's activity. The higher the stakes, complexity and uncertainty of the project, the higher the perceived risk for the customer and hence the more positive their attitude towards project partnering. The customer's perception of project's functional challenge may depend on its own characteristics (composition of the Decision Making Unit and attitude towards risk), but also on the characteristics of its relationship with the contractor (a trustful and cooperative relationship decreases the perception of risk).

3.5.4. Relational congruence in the project network

This is the level of trust, commitment and commonality of goals and values between the actors involved in the project network (supplier, customer and other key influential actors). Relational congruence is here seen as the result of resource adaptations and the engagement in long-term business relationships between the actors forming the project network. Here, we analyze more specifically the relationship between the contractor and the customer and how this relationship relates to other resource adaptations in the project network (e.g. key suppliers).

4. Research method

As previously pointed out, the study and understanding of relationship development in a project context is a challenging task due to the specificities of project business and in particular, due to the discontinuity of demand. In such a complex situation so dependent on the context of relationships, a qualitative research approach seemed the most appropriate (Denzin & Lincoln, 2000). Case studies are widely used as a method among researchers within industrial marketing (Beverland & Lindgreen, 2010; Piekkari, Plakoyiannaki, & Welch, 2010), since they are suitable for understanding “the interaction between a phenomenon and its context” (Dubois & Gadde, 2002b: 554). A case study thus seemed appropriate to provide an in-depth description of the customer's rationale for choosing partnering and partners and to integrate the particular context formed by the relationships existing between its actors (Dubois & Araujo, 2007; Easton, 2010; Eisenhardt, 1989).

The case study originates from an explorative study initiated in 2012 of a large construction and pioneering project in Sweden, the first proton therapy clinic in the Nordic countries – the Skandion Clinic. The main aim behind the study was to investigate innovation in the construction industry where partnering was only one of several identified ‘innovations’ (novel ways of interacting). Our empirical starting point is thus a single project, the Skandion Clinic, for which the customer chose partnering as a procurement method. The project is here viewed

as an episode in the development of relationships between, first and foremost, the contractor and the customer (primary focus) and secondly, with key suppliers. We selected the project for two reasons: it was a first partnering deal between the customer (Akademiska Hus) and the contractor (NCC Construction), and the actors already had an established relationship. The project also displayed uniqueness in terms of design and purpose of the building and a high level of functional risk (Crespin-Mazet & Ghauri, 2007). Starting from the Skandion Clinic project, the authors realized that this partnering agreement was related to three other construction projects that were completed before (Blåsenhus and BioCentrum), and after (Uadm). Hence understanding the Skandion partnering agreement involved stretching the study over four projects which proved to display the same project network: the customer (Akademiska Hus), the contractor (NCC), the installation companies (Bravida and Salléns), the planning coordinator (Sweco) and the frame supplier (UPB). The research process corresponds to an “abductive” approach as it involved systematic combining (Dubois & Gadde, 2002b) through a continuous combining of empirical insights with existing theory from different fields. In this process of combining empirical findings with theory, the authors needed to adjust the research question, expand the empirical scope of the study and enrich an existing model within one of the theoretical fields (project marketing) by the use of another (INA). The conceptual framework was developed simultaneously with the assessment of the empirical findings and, as such, was both a result of the case study and a way to analyze it. This (abductive) approach thus allowed for theory development.

The paper is mainly based on primary data retrieved through face-to-face interviews. In total the authors performed 20 interviews between 2012 and 2013, lasting an average of 1 to 1.5 h (see Appendix 1). All respondents held managerial positions and were actively involved in the projects, which increases the validity of their insights. Since the main focus has been to understand the partnering agreement between the customer and the contractor, 10 of the 20 interviews involved representatives from this dyadic relationship. The interviews were semi-structured (Hesse-Biber & Leavy, 2011) and questions were designed to trace the key project actors as well as the substance of their relationships in terms of resource adaptations made both within the focal project but also before and after. The interviews were recorded and transcribed accordingly.

We used the conceptual framework outlined in Section 3.5 to analyze transcribed data. The analysis concentrated firstly on resource identification, then secondly, on how these resources have been adapted through the development of the dyadic relationship and across several projects. Moreover we also identified and analyzed how resource adaptations were related to other actors in the project network. Hence the analysis covered resource adaptations over time between the contractor and the customer as well as the influence of the project network. This enabled us to investigate both the substance of relationships and its influence on the customers' perceived project's functional challenge and relational congruence within the project network.

5. The case study

5.1. An extraordinary construction project – the Skandion Clinic

The origin of the Skandion Clinic can be traced to a national investigation in 2002 pointing to the need for Sweden to establish proton therapy as a future cancer treatment method (less side effects than traditional radiation). Kommunförbundet Avancerad Strålbehandling (KAS)¹ was established in 2006 to run the Skandion Clinic, the first proton therapy clinic in the Nordic countries aiming at treating patients

¹ The Municipal Alliance for Advanced Radiotherapy representing seven county councils.

from all over Sweden. In 2010, KAS issued a formal competitive bid for the construction and management of the Skandion Clinic. The total cost was estimated at around US\$ 104 million; US\$ 52 million for the cyclotron – the radiation equipment – and US\$ 52 million for construction. Designing, constructing and running a clinic referred to as “a small nuclear power plant in the centre of Uppsala” would be extremely demanding and uncertain as the building needed to adhere to several requirements due to the heavy, energy-consuming radiation equipment.

Akademiska Hus (AH), a public property developer and owner of higher education buildings, was willing to bid for the construction of this project. However, the Construction Manager at AH concluded that “we [AH] will get a lot of work if we do not have the entrepreneur with us” referring to the high level of risks associated with the clinic along with the fact that it was outside the developer’s core business. According to the respondents, for AH the advantage of partnering is its flexibility, the capacity to adapt building documents during the construction process along with the shared risk–great benefits when faced with a highly uncertain and complex project. Just prior to the Skandion Clinic, AH issued a partnering bid concerning the construction of the VHC Clinic.² AH decided to emphasize the project organization and reference projects as the main evaluation criteria of the proposals.

To evaluate the project organization, key managers of the contractors were interviewed twice by a behavioral therapist. Skanska, a contractor that had worked with AH during several years, won the bid by a narrow margin to NCC. However, NCC is the construction company that AH has contracted most in Uppsala during the last 20 years and according to the Construction Manager: “Akademiska Hus and NCC can work easily together”. Therefore, shortly after NCC lost the bid, AH contacted NCC asking them to make a proposal for another partnering project (the Skandion Clinic,) without a formal bidding process and with the aim to keep the same project organization as suggested for the VHC project. The Construction Manager at AH describes this “bidding” process as: “NCC won the bid in indirect competition”. In April 2010, AH and NCC won the bid to jointly manage the construction of the Skandion Clinic. This was the first partnering project between AH and NCC and the two parties saw Skandion as a “partnering pilot”. In order to present the context in which Skandion as a partnering project took place, the following section outlines two large construction projects prior to Skandion involving both the customer (AH) and the contractor (NCC).

5.2. Construction projects prior to Skandion Clinic – Blåsenhus and BioCentrum

As mentioned above, AH and NCC had worked together long before the initiation of the Skandion project. The relationship stretches 20 years, and when initiating the Skandion project they had recently cooperated in two large construction projects in Uppsala; Blåsenhus (2007–2009) and BioCentrum (2009–2011). These two projects, providing laboratories and auditoriums for the local universities, were both within the core business of AH and comparable in terms of size and complexity. Even though they were contracted under a traditional type of contract, where AH managed the planning and NCC coordinated the production of the buildings, several adaptations were made during production. The Construction Manager at AH describes this in the following way: “Within the fixed price and strict contract agreement the companies established cooperation in a rather innovative way”, and continues: “The companies worked with cost savings throughout the projects”. AH especially encouraged NCC to suggest new ideas to increase performance in terms of costs and delays and as a consequence NCC made several adjustments regarding specific production solutions (e.g. new materials, new installation processes and revised scheduling).

These changes facilitated the production activities on site for NCC, leading to time savings for the production but also cost reduction of the building for AH. To a large extent, NCC used the same project organization in both of these projects in an effort to increase efficiency and capitalize on their previous experience with AH. According to the Construction Manager of AH, these adjustments were only possible due to the long-term relationship between the two companies. Hence, previous projects to Blåsenhus and BioCentrum had been important in establishing the relationship between the two parties.

For Blåsenhus and BioCentrum, AH was responsible for choosing suppliers and selected the same installation companies; Bravida installed the ventilation and plumbing while Salléns installed the electricity. Both companies had provided their services on earlier projects executed by AH. A new Latvian frame supplier (UPB) was procured in Blåsenhus and also used in the subsequent project, BioCentrum. According to the Project Manager, the frame supplier supplied the cheapest bid for both projects, emphasizing too the “excellent” delivery of services in both projects.

5.3. The Skandion Clinic partnering agreement in practice

The Skandion project’s partnering agreement stated that AH was responsible for planning while NCC was responsible for coordinating production, just as in the previous projects Blåsenhus and BioCentrum. However, the way that the parties now could interact as a consequence of the partnering agreement affected the project in several ways. Firstly, NCC was invited to join the planning organization and the company was assigned an advisory role, which meant that NCC had the possibility to influence building documents. To supervise the planning, AH appointed the consultancy firm Sweco, a company with whom they had been working for more than 15 years. Sweco coordinated technical consultants with expertise in 3D installation drawings (Inkcord, ProjektEL, PQR), a technical constructor (WSP) as well as the architect (Link Arkitektur). All the technical consultants had worked with AH before.

Due to the project scope, specific requirements of the radiation equipment manufacturer (IBA) along with specific requirements of the user (KAS), parallel planning and production was required. Moreover, the completion of the clinic had to be done within a tight time schedule. So secondly, together with Sweco, AH and NCC decided to divide the building into separate work packages to coordinate the work more efficiently. Thirdly, AH and NCC introduced the use of Building Information Modelling (BIM)³ to plan and coordinate the whole project. This decision was a result of the relationship and the partnering agreement between AH and NCC, and it was the two partners that were main stakeholders in setting up guidelines related to BIM, supported by input from the architect (LINK) and Sweco. The Project Leader from AH describes it as: “This is the first project in which we really use BIM to a larger degree”. The ambition was that the construction of the Skandion Clinic would serve as a pilot project for the development and continued use of a BIM-manual for future AH projects, which not only affected AH internally but also current and future partners, such as NCC. AH demanded that the BIM-model would be possible to use in the management of the building along with collision control and inserting the drawings from the planning consultants, while NCC demanded that the BIM-model would be used for volume calculations and financials. To use the BIM-model, AH and NCC provided BIM-training to all employees including the entire production team on site.

The partnering agreement also included the use of ‘open books’ between AH and NCC with shared responsibility for the economic outcome of the project, or as the project leader at AH puts it: “It is a

³ The BIM-model coordinates the drawings supplied by technical consultants: it enables both the planning and production team to visualize parts of the building in several dimensions, to extract quantities and analyze installation clashes among other things.

² The Centre for Veterinary Medicine and Animal Science.

totally open and transparent relationship". Together AH and NCC visited several reference projects which the Project Manager comments: "I see these visits as an investment but the problem is to show how much more sales or outcome you will get". The two partners also jointly supervised procurement of materials and subcontractors "down to nuts and bolts", a process that required a lot of time and resources. The Project Manager mentions that "We hope to work like this again but then it will hopefully be a bit smoother". AH and NCC also decided to jointly select installation companies not just on the basis of price but also based on their organization due to the great challenge associated with the type of installations needed in the clinic. The selected companies needed to have a large capacity, a factor underlined by the Project Manager: "You cannot buy from small companies ... as this project is rather [technically] advanced, there has to be enough knowledge [among the companies]". He also concludes that: "We mainly evaluate on price but we also evaluate on key individuals...on the specific foremen along with the project leader of the installation companies... you want to be assured that the workers can handle larger projects". Hence, key individuals of the installation team were important determinants in the final selection. In selecting the suppliers AH and NCC decided to use the same installation companies as in two previous projects, Blåsenhus and BioCentrum (Bravida for ventilation and plumbing and Salléns for electricity). They also decided to use the same Latvian frame supplier (UPB) as in Blåsenhus and BioCentrum. Since all these companies had been working with AH in the past, they were well aware of the technical and economic requirements of both AH and NCC. The Project Leader of AH, reflecting on the partnering agreement, concludes: "All is based on the organization; this demands more man-hours in all phases".

Due to the partnering agreement, new types of meetings, so called NAV-meetings "were established through cooperation". NAV-meetings⁴ were introduced to increase and ease-up the interaction between the planning organization and the production team along with the radiation equipment supplier, IBA. A NAV-meeting consisted of representatives from AH, the planning coordinator (Sweco), IBA's project leader and NCC's production team. These regular meetings enabled alterations of building documents and finding specific solutions as part of a cooperative process, for instance changes were made to the façade through this way of interacting but also due to the use of BIM. When needed, other companies involved in production such as installation companies and main suppliers joined the meetings. Moreover, AH and NCC introduced regular workshops to give each other feedback, follow up the project and create a platform of revision. According to the Construction Manager at AH, tight cooperation through regular meetings is a key success factor of such agreements: "...without interaction, there is no cooperation". In retrospect and due to the Skandion project partnering experience, the Construction Manager also commented that if Blåsenhus and BioCentrum were to be built today, a partnering agreement with the entrepreneur would be a "hot alternative".

5.4. The choice of a second partnering agreement – the University Administration Building

In 2011, during the production of the Skandion Clinic, AH contracted two new construction projects: the University Administration Building, (Uadm), and Ullshus. Both projects contained a certain level of uncertainty: technical constraints and the risks of large public opposition (Uadm) and the integration of wood in the building (Ullshus). AH decided once again to engage in partnering and for efficiency purposes AH issued only one bid for both projects; contractors were encouraged to make proposals for both projects. The bids were not only evaluated in terms of price (25% of the total evaluation) but also in terms of project

organization (50%), and references (25%). The construction company providing the best bid was free to choose its project. These evaluation criteria clearly reflect that partnering projects "do not compete with a fixed price, instead other parameters are important" as stated by the Construction Manager at AH. For the partnering projects, NCC was ranked first and chose the Uadm project (US\$ 63 million for a total surface area of 22,000 square meters).

For the Uadm project (which is yet to be completed, 2015), NCC was assigned a more important role concerning planning with more influence on the planning documents. NCC was also included in the project at an even earlier stage than in the Skandion Clinic project. NCC presented a similar organization as in Blåsenhus, BioCentrum and the Skandion Clinic by appointing the same project manager, along with several project engineers and key foremen. Once again the partnering agreement resulted in joint procurement between AH and NCC and the partners also selected the same suppliers as for Blåsenhus, BioCentrum and the Skandion Clinic: Sweco, Bravida, Salléns and UPB. Due to the experience from the Skandion project, the Project Manager at NCC mentions the importance of ensuring that not only the partnering parties need to be involved to begin with but also that: "We are all going in the same direction, even the planning organization needs to be part of the partnering mindset and we need to think cooperation 100% of the time". As a result of this logic, Sweco and the installation companies have been invited to join partnering workshops throughout the initial phases of the project and other meetings related to the partnering agreement. Moreover the formal partnering actors have also established NAV-meetings, and the BIM-manual developed in the Skandion project is used as guide for the implementation of BIM in the Uadm project.

6. Analysis

Concerning the choice of partnering as a procurement mode on a specific project, our research is in line with the findings of Crespin-Mazet and Ghauri (2007) suggesting that two main factors influence the customer's procurement decision: the customer's perception of the project's functional challenge and the relational congruence in the project network. Our case however enables a deeper analysis of the relative importance of these two factors on their impact on the customer's choice of partnering and partners.

6.1. The choice of partnering and of the formal partner

The case illustrates that the customer accepted to consider entering into a partnering agreement for the first time mainly due to the very high functional challenge of their project. It seems that the perceived project's functional challenge was a prerequisite to incite the customer to engage in project partnering and substantially modify its traditional procurement habits (accepting to become more dependent on a given contractor and to reject arm's length negotiation). This confirms existing research on the importance of the project risks in terms of time, technical complexity and uncertainty (Eriksson, 2010) on the choice of project partnering. The case also describes that it was only once this procurement decision was made that the customer looked for partners with which their relational congruence was high. In this case, the relational congruence seems to have mostly influenced the choice of partners rather than the choice of partnering. The empirical data illustrate that the customer realized that the success of a partnering project relied on a high degree of interaction and thus, on the selection of a suitable partner. The customer's behavior and in particular its criteria for assessing partnering candidates (project organization and individuals involved), reveals the efforts made by the customer to find the right partner. The customer invested a lot in developing evaluation criteria for the partnering agreement and controlling the bidding process so that capable contractors would be favored. NCC lost the VHC clinic bid to Skanska, chosen for its better capacity to reduce the

⁴ Referring to meeting with "core actors".

project's functional risk. However NCC's investment in formulating the proposal for this project was not in vain. The quality and efforts made were highly valued by the customer (AH) and incited them to modify their procurement mode in directly offering NCC to develop a joint proposal instead of issuing a competitive bid. The customer could thereby capitalize on previous investments; great value was assigned to the adaptations made by both parties in their previous relationship. These actions also meant that the partners (NCC and AH) did not start from scratch but from an established way of interacting.

6.2. Relationship history and resource adaptations between the two partners

The partnering agreement was based on an established relationship between the customer and the contractor featuring several resource adaptations made in the context of traditional bidding projects. Adaptations of various technical resources created benefits for both parties in terms of increased production efficiency on site. Also organizational adaptations were made. As an example, the contractor provided the same key individuals for all projects (both partnering and non-partnering). Mobilizing the same organizational resources in all these projects increased the contractor's chances of winning future bids since it was an important evaluation criterion. It also assisted the contractor in improving the productivity as well as enhancing learning across projects. The fact that the customer allowed the contractor to incorporate new production solutions despite traditional contracting reflects trust between parties. The evidence that such resource adaptations created benefits for both parties seems to have facilitated the evolution from traditional contracting to partnering.

The use of 'open books' provided mutual economic insight and responsibility, which in turn seems to have generated increased transparency, trust and commitment between the two partners. This created a good basis for cost reductions and joint risk management which were prerequisites for dividing project earnings. Moreover, during the Skandion project, the customer and contractor developed another organizational resource, the NAV-meetings. Through these meetings, organizational units and relationships in the project network could be connected and coordinated, resulting in benefits such as cost savings, information sharing and increased efficiency in handling planning and production. Also through formalizing feed-back workshops, the two parties created possibilities for better adjusting their resources throughout the project. In the end, the parties could harvest increased mutual learning, efficiency and project quality across projects. Moreover, the partnering agreement in Skandion introduced BIM as a new technical resource which generated tighter interaction but also extra investments in organizational resources such as staff training. Apart from the main contracting parties, the implementation of BIM to a great extent depended on the capacity of the suppliers and sub-contractors to use the model. BIM impacted the organization of the construction process in terms of meetings, coordination and spreading information among the actors of the project network. The main benefits of implementing BIM as a new resource, and adapting the resources of the project network accordingly, were enhanced learning, reduced project lead times and further exploitation of opportunities on future projects.

6.3. The importance of the project network – relationship history on network level

However, relational congruence does not only refer to the customer's relationships with the contractor and other actors in the project network (e.g. suppliers, subcontractors) but also to the contractor's relationships with these project actors, i.e. interrelated business relationships. The dyadic relationship between AH and NCC and the partnering agreement did not only depend on adaptations and trust between these two parties but also on the commitment of a set of other actors. The business relationship between the customer and the

contractor was related to a set of other relationships histories outlining a project network re-appearing in several projects. This network consisted of the technical consultant, the installation companies as well as the Latvian frame supplier. These suppliers were selected based on their technical and organizational resources which had been co-developed over time and across projects. By inviting the same suppliers, the customer and contractor also aimed at cutting costs, encouraging learning across projects and harvesting earlier investments. For instance, the installation companies were well aware of the customer's technical requirements which facilitated the work on site.

6.4. Continued use of partnering – the impact of relational congruence in the project network

The rationale for understanding the customer's behavior (perceived functional challenge impacting first the choice of partnering and then relational congruence impacting the choice of partners) does not seem to hold true for the subsequent partnering agreement signed with the same contractor. Our case highlights that once their first partnering agreement was successfully executed with a given contractor, the customer decided to adopt a similar purchasing behavior and organization for the subsequent project even though the project was not perceived to have a high level of functional challenge. The increased interaction between the customer, the contractor and other project network actors was related to a set of resources that were being adapted and developed across several projects (BIM, NAV-meetings, feedback workshops, project organization, staff training, and procurement policy). The actors identified the benefits of working increasingly closer together across several projects and thus increased the level of interaction across the network over time. One example is how the introduction of partnering in Skandion made the partners develop their relationship further by introducing joint procurement. As a jointly developed organizational resource, this approach assured that the knowledge, experience and contracts related to suppliers and sub-contractors of the two partners could be mutually used and adapted in order to guarantee the access to services at the right quality, price and time. Since it was the first project with joint procurement, the purchasing process was time-consuming but was a valuable investment as it enabled a faster procurement process in the subsequent project – Uadm. In the words of Eriksson and Nilsson (2008), these actions both required and contributed to further "social embeddedness" which facilitated the operations of the project network.

Another example of how investments in one project could be used in the subsequent one is the introduction of BIM. While requiring quite encompassing training and re-organizations of traditional ways of working, this investment could also be further exploited in the subsequent Uadm project. This illustrates that while the project's functional risk remains the key factor explaining why partnering is firstly initiated, the relationship history can have an important effect on both the choice of partnering and partners, on subsequent projects even when the functional challenge is lower.

This seems to convey the idea that, once the customer has had a positive experience with the partnering mode with a given partner, it can better assess its benefits such as time management, cost reduction, commitment and trust, i.e. both in terms of functional challenge and relational risks reduction. The benefits of a cooperative approach and of working with qualified partners whom they trust seem then sufficiently important to justify the choice of partnering even though the project risks are perceived as moderate. In this case, it is the substance of relationships existing with trustful partners that is primarily valued as it reduces both relational risks and the perception of functional risks. It is the choice of partners and the desire to work with them over time to harvest the investments made in previous relationships that come across as the most important factor for understanding the customer's behavior in this case. Hence, the choice of partners is not

just based on competitive bidding procedures but mostly, on the history of their relationships with partnering candidates.

Consistently with the findings of the INA, we can interpret this procurement behavior as the customer's desire to harvest the high level of investments and resource adaptations made in a previous partnering agreement on subsequent projects. As suggested by the case, this is all the more justified as partnering requires a great commitment of resources and high level of resource adaptations to adjust one's organizational and technical resources to those of the partner and of other actors of the project network. The case illustrated that the network of qualified suppliers and subcontractors originally constituted a resource associated with the customer, and that this supplier network resource was progressively interfaced with those of the contractor to enable joint production; this network was then transformed over time (new Latvian supplier entering; improved coordination) to progressively become a common asset of the partners' dyad. It is to benefit from such a common asset and resource adaptations that the customer was incited to continue working with the same partner on a subsequent project. The choice of partnering is then a means to more easily access and leverage these resources in the project network than under a traditional contracting agreement.

7. Conclusions

Our research question aimed at better understanding how the history of relationships between actors influences the choice of partnering and of partners on a specific project. The research has illustrated that the context of the relationships in which project partnering develops impacts the customer's procurement behavior in terms of partner selection and to a lesser degree, the choice of project partnering as a procurement mode. This research enables the framing of preliminary insights that could enrich both construction partnering literature and project marketing literature if confirmed by further research.

The case reveals that the construction of the Skandion Clinic was a functionally challenging project in relation to the risks associated with a highly complex building, a tight time schedule and lack of experience from similar projects. As suggested by Crespin-Mazet and Ghauri (2007), a high level of functional risk is one of the main factors explaining why customers engage in partnering. Even though the main determinant in deciding to engage in partnering was the functional challenge of the clinic, the relational risk was also important in choosing the partners. The customer and the contractor had an already established relationship characterized by earlier investments and resource adaptations such as coordination of routines, implementation of new solutions etc. Hence, it was not only the features of the single project which played a decisive role in the choice of partnering and partners but also the history of the relationship between the two parties. The relationships to other actors in the project network also played a decisive role in assessing the project risks and selecting partnering as a procurement mode. Having a network of relationships with qualified suppliers characterized by high relational congruence seems to have facilitated the customer's decision to initiate a new type of procurement through partnering. The customer knew that within the network, there were actors with complementary resources such as technical expertise and experience that could be used to realize a risky project. However, this then also became the main reason for selecting partnering in a much less risky project, clearly demonstrating the potential effect of relational congruence on continued use of partnering as a procurement mode.

7.1. Contribution to construction partnering literature

Project partnering can be regarded as a stage in a long-term relationship that, when initiated, results in a higher level of interaction than classical project contracting. As the initiation of partnering requires deep interaction and adaptations, any previous adaptations made on

earlier projects reduce the risk to initiate partnering. In addition, any earlier adaptations have most likely resulted in mutual learning and trust between the two parties. The choice of partners thus appears to be based on earlier adaptations, trust and commitment. It has also been indicated that once partnering is initiated in one project, and thus deepened interaction and further investments have been made, it can become the preferred type of contract and way of working in sequential projects with the same partner(s). This means that due to the increased level of interaction needed to engage in partnering, there are benefits to be gained by further exploiting the investments made.

These initial findings are based on a single case study spreading over four projects and are therefore highly related to a specific context. This naturally limits their validity in terms of applicability to other contexts and partnering projects. Our research enables however to lay the following propositions that could frame the agenda of future research projects in other contexts:

- A high level of perceived project's functional challenge associated to a high level of relational congruence in the project network is required to adopt a first project partnering agreement. High to very high level of risks seems to act as prerequisite to lead the customer to change procurement mode; partnering then comes across as the best purchasing alternative to decrease those risks. Once this initial procurement mode is chosen, the choice of partners to work with depends on the level of relational congruence with the contractor and the project network. This relational congruence is all the more important that selected partners have a history of interaction characterized by resource adaptations, trust, commitment and common values.
- Once a first partnering agreement has been successfully run, the relational congruence in the project network seems the most important factor explaining the choice of project partners and of project partnering. The customer has been able to assess the value of partnering and of highly cooperative relationships on a previous project in terms of project performance (costs and time-savings, project quality) and in terms of comfort in managing the project (reduced conflicts). Even though the project per se may not be complex or challenging, the customer is more inclined to adopt partnering to obtain the same benefits and capitalize on previous resource adaptations made in the relationship with a given partner. Hence, the continued use and development of partnering across projects increase the efficiency of resources and activities over time and generate "economies of scale". The choice of project partnering is then the best alternative to leverage the tight couplings made on previous partnering agreements and relationships with a given partner.

7.2. Contributions to project marketing literature

While having acknowledged the importance of relationships in project business, the researchers from the International Network for Project Marketing (INPM – Skaates & Tikkanen, 2003) have not analyzed their impact on the customer's purchasing behavior in terms of contractual mode (e.g. partnering, Design & Build, traditional contracting) or choice of suppliers and other partners on a given project. This paper thus paves a way to new insights regarding project marketing literature by unveiling the impact of "sleeping relationships" on the customer's purchasing behavior. It suggests that relationships with key value-added partners (such as a contractor and suppliers) constitute an asset that can remain "sleeping" in between two projects but can be awakened and harvested in future deals (Hadjikhani, 1996). These prior investments seem to have an impact on the way projects are contracted and more importantly on the choice of suppliers or other types of partners. Instead of adopting a short-term, project focus, a more dynamic approach of

relationship development is thus required. This involves managing the relationships not only during the project development phase but also across projects i.e. in between two project episodes. This reinforces the conclusions of Tikkanen et al. (2007) concerning the management of a “portfolio of various relationships” in project business, as well as the importance of exploiting the “social embeddedness” addressed by Eriksson and Nilsson (2008).

7.3. Managerial implications and further research areas

Several managerial implications both for project customers (procurement strategy) and for project suppliers (project marketing strategy) can be tentatively inferred from this exploratory research.

- For a customer, the adoption of a first partnering mode seems most suitable when the project's risks are high (uncertainty, complexity and stakes) to justify the change of procurement mode. As the choice of partnering requires tight couplings between the resources of project actors (Dubois & Gadde, 2002a), the selection of partners for such a project then aims at optimizing the level of investments made to interface and adapt the client's resources. This is achieved by selecting partners with whom they have already closely cooperated and developed adaptations with. If the first experience of project partnering with a given partner is successful, it then seems more efficient to continue harvesting the investments made in the relationship by selecting the same partner and the same choice of procurement strategy on subsequent projects. This is all the more true that the level of couplings is high. This suggests that the procurement strategy of a given project buyer should aim at managing a network of qualified partners with whom they progressively interface their resources tightly over the course of several projects (partnering or not) so as to increase efficiency and project performance.
- Similarly, a supplier should manage its customer relationship portfolio depending on the type of projects the company is targeting. If the supplier has developed a strategy and resources adapted to conducting highly risky projects with corresponding contractual modes (partnering, Public Private Partnership, Design & Build), it should apply a relational approach rather than a transactional or project-oriented approach. This involves targeting customers

which conduct many projects and can generate repeat business (relational approach to a transactional approach). It also means considering the investments and adaptations required to win and successfully conduct a specific project as a valuable investment to increase its chances of winning future partnering projects with the same customer. The return on these investments should thus be calculated at the customer level rather than solely at the project level. Hence, in terms of project screening (selection), the relationship quality and the level of adaptations made in developing this customer relationship over time seem relevant criteria to integrate in a project screening grid. This reasoning has been developed for partnering projects but could probably also hold true for other types of contractual modes characterized by a high level of project functional challenge and relational challenges. In such cases, the customer looks for reinsurance by working with partners of trust who already made investments and commitments in developing their relationship. Here again, this means adopting a strategic perspective of project business rather than focusing on winning deals in a short-term vision.

As for further research, there is a clear need for more empirical studies investigating the relative importance of a project's perceived functional challenge and relational congruence in the selection of partnering and project partners. In particular, there is a need for longitudinal empirical studies analyzing how these two factors develop over a long series of projects and/or over a long period of time and their impact on the customer's behavior (perception of risks, choice of procurement mode and choice of partners). This is challenging as longitudinal type of studies are time- and resource demanding. Still this is highly necessary for the further understanding of how relationship history influences the interaction and procurement mode in the construction industry, within and across projects.

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Appendix 1. Interviews

Organization	Role of organization	Position	Duration	Date
AH	Customer	Project leader	1 h	10/10/2012
NCC	Contractor/construction company	Project manager		
Sweco	Supplier of consultant service	Planning coordinator	1.5 h	02/11/2012
NCC	Contractor/construction company	Project engineer	1 h	02/11/2012
KAS	Tenant	Chief physicist	1 h	04/11/2012
AH	Customer/owner	Project leader	1.5 h	21/11/2012
IBA	Med-tech supplier	Project leader	1.5 h	21/11/2012
NCC	Contractor/construction company	Site manager	1 h	22/11/2012
Bravida	Supplier of electricity installation services	Project leader ventilation	1 h	04/12/2012
NCC	Contractor/construction company	Project manager	1.5 h	19/04/2013
AH	Customer	Construction manager	1 h 15 min	13/10/2013
AH	Customer	Project leader	1 h	16/10/2013
AH	Customer	Project leader	1 h	22/10/2013
Link Arkitektur	Supplier of the architectural drawing	Architect	1.5 h	10/25/2013
Art	Supplier of consultant services within art	Art consultant	1 h	10/25/2013
Sweco	Supplier of consultant service	Planning coordinator	1 h	10/29/2013
KAS	Tenant	Director	1 h 15 min	10/30/2013
NCC	Contractor/construction company	Site manager	1 h	08/11/2013
AH	Customer	Project leader	1 h	08/11/2013
IBA	Med-tech supplier	Project leader	1.5 h	14/11/2013
Link Arkitektur	Supplier of the architectural drawing	BIM Coordinator	1 h	27/11/2013

Appendix 2. The studied construction projects

Project (incl. function and size)	Build. tenant	Constr. company	Type of contract between AH and NCC	Cost	Time	Key suppliers (who appointed them)
Blåsenhus (auditorium, offices) 22,000 sq m	Uppsala University (UU)	NCC	Classical contract with 3 work packages (groundwork, building construction and frame supplements)	US\$ 52 million	2007–2009	Sweco (AH): coordinating planning UPB (AH): prefab frame Bravida (AH): installation of ventilation Sallens (AH): installation of electricity
BioCentrum (labs, auditorium, offices): 22,500 sq m	Swedish Agricultural University	NCC: Similar organization as for Blåsenhus	Classical contract with 3 work packages (groundwork, building construction and frame supplements)	US\$ 54 million	2009–2011	Sweco (AH): coordinating planning UPB (AH): prefab frame Bravida (AH): installation of ventilation Sallens (AH): installation of electricity
Skandion Clinic (radiation treatment therapy clinic, admin & patient hotel) 14,000 sq m	KAS	NCC: Similar project as for Blåsenhus and BioCentrum + site manager with experience from partnering	Partnering	US\$ 52 million (construction) US\$ 52 million (medical equipment)	2010–2015 (initially in 2008)	Sweco (AH): coordinating planning UPB (AH + NCC): prefab frame Bravida (AH + NCC): installation of ventilation Sallens (AH + NCC): installation of electricity + IBA (KAS): medical equipment + Link Arkitektur (AH) + drawings suppliers: VSP, InkCord, PQR, ProjektEL (AH)
Uadm (admin and offices) 22,000 sq m	Uppsala University (UU)	NCC: Similar project organization as for Blåsenhus, BioCentrum, Skandion	Partnering	US\$ 63 million	2014–2017 (initially 2011)	Sweco (AH): coordinating planning UPB (AH + NCC): prefab frame Bravida (AH + NCC): installation of ventilation Sallens (AH + NCC): installation of electricity + 3XN Architects (AH)

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