

Creating relational capital through socialization in project alliances

Creating
relational
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Abstract

Purpose – The purpose of this paper is to elaborate the understanding of socialization in the context of temporary operations and organizational settings, using project alliance – the most contemporary approach to the management of large and complex projects – as an example. In particular, the paper also assesses how informal and formal socialization mechanisms are used to facilitate relational capital in such a setting.

Design/methodology/approach – Data were collected by two case studies of complex infrastructure projects in a Northern European city. The analysis focuses on how socialization is managed across organizational interfaces within the alliance organization during the project tendering and development phase to create relational capital.

Findings – The findings indicate that significant emphasis is put on socialization in project alliances. However, while in the tendering phase both informal and formal socialization mechanisms are used to create relational capital; in the development phase informal socialization mechanisms are associated with higher levels of relational capital and formal socialization mechanisms are used to maintain the level of relational capital.

Originality/value – While operations and supply chain management research argues that socialization is critical to manage organizational interfaces and to create relational capital in buyer-supplier relationships, research has mainly focused on ongoing operations. This study complements the prior research by developing further insight into socialization in the context of temporary operations and organizational settings; such settings create a unique empirical context, posing different managerial challenges as the results also indicate.

Keywords Socialization, Case study, Project alliance, Organizational relationships

Paper type Research paper

1. Introduction

Large project deliveries imply significant managerial challenges to ensure the development of common goals, values, and trust among the complex temporary network of participating organizations with diverse and complementary skills, backgrounds, and limited prior co-operation (Gann and Salter, 2000; Geraldi *et al.*, 2011). Contrary to the traditional project set-ups where multiple dyadic contracts are established between the participants, “project alliances” are a unique multi-party contractual structure, involving the formation of a temporary project alliance organization (Walker and Lloyd-Walker, 2015). The alliance organization is formed on the basis of shared risks and rewards and in addition to the contractual structure, also incorporates various other practices such as early involvement of key parties, transparency (e.g. open book accounting), and joint decision-making (Jefferies *et al.*, 2014; Lahdenperä, 2012; Walker and Lloyd-Walker, 2015)[1]. Recent evidence indicates



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that project alliances are the most efficient and effective way to manage large and complex projects (Stuart, 1997; Suprpto *et al.*, 2016). In order to succeed, project alliances, however, require timely and fast development of trust, respect, and interaction among the organizational members that oftentimes have no shared history of co-operation and collaboration (Hietajarvi and Aaltonen, 2017; Walker and Lloyd-Walker, 2015).

In order to facilitate the development of mutual trust, common goals, and interaction among organizational members, operations and supply chain management (OSCM) research points to the importance of various socialization mechanisms (Cousins *et al.*, 2006; Cousins and Menguc, 2006)[2]. Socialization – the interaction and communication between different organizations facilitates the building of personal familiarity, improved communication, and problem solving (Gupta and Govindarajan, 2000) – is one of the fundamental issues in the management of organizational relationships. Research on socialization in OSCM has developed the understanding of socialization in dyadic buyer-supplier relationships (BSR) in the ongoing manufacturing context (e.g. Cousins *et al.*, 2006; Cousins and Menguc, 2006). While the development of trust and social interaction across organizational interfaces in the ongoing operations context is critical, we know very little about socialization in temporary operations and organizational settings, such as project alliances, characterized by lack of joint history of interaction and pre-existing joint working experience, pre-determined limited duration of the operations and of the entire relationship, as well as the inherent dynamism related to a project lifecycle (Bakker, 2010; Burke and Morley, 2016; Lundin and Söderholm, 1995). This is a significant gap as socialization has been found to depend on the “shadow of the past,” i.e. history of interaction (Lawson *et al.*, 2008; van de Vijver *et al.*, 2011). Furthermore, it cannot be assumed that a theory developed in one context (i.e. ongoing operations) holds in a fundamentally different context (i.e. temporary operations and organizational settings) but requires elaboration and testing (Boer *et al.*, 2015).

In this study, we address the question:

RQ1. How do socialization mechanisms facilitate the development of relational capital in temporary operations and organizational settings?

The empirical part focuses on project alliances as an example of temporary operations and organization. Project alliances form a particularly fruitful context to study socialization; in such a setting it is especially critical to quickly overcome all organizational boundaries, develop trust, respect, and joint values, be transparent about confidential information, and develop interaction across multiple organizations simultaneously (Clegg *et al.*, 2002). Moreover, organizational relationships in project alliances are highly complex, requiring a greater managerial emphasis (Clegg *et al.*, 2002; Walker and Lloyd-Walker, 2015).

In this study, we take a theory elaboration research approach (see, e.g. Maylor *et al.*, 2015). First, we build on OSCM research on socialization. Second, we build on the assumption that socialization in project alliances may vary over time because the fundamental feature of projects is dynamism over their lifecycle (Morris, 1994) and because organizational relationships in general vary over time (e.g. Ambrose *et al.*, 2008). To illustrate and elaborate socialization in project alliances, we collected data with a multiple case study design (Yin, 2009) on Railway Alliance and Tramline Alliance projects, focusing on their project tendering and development phases, because the development of relational capital is especially critical in the early phases of project lifecycle (Eriksen and Dyer, 2004).

Following the theme of the special issue “Old theories, new contexts: extending operations management theories to projects,” the study translates and elaborates the “old theory” of socialization in the novel context of projects. The study contributes to the OSCM research on socialization and also provides the further understanding of management of complex projects. For OSCM research on socialization, the study provides contextualized understanding of socialization in temporary operations and organizational settings (e.g. Cousins *et al.*, 2006, 2008;

Lawson *et al.*, 2009); as the findings indicate, the use of informal and formal socialization mechanisms depend on the phase of project lifecycle. For the management of complex projects (e.g. Brady and Davies, 2014; Davies and Hobday, 2006; van Marrewijk *et al.*, 2016), the study provides novel insights into the management of organizational relationships, especially socialization mechanisms in project alliances and their implications on relational capital. The study also contributes to research on project alliances, which has especially focused on exploring the contractual features of these arrangements (e.g. Ibrahim *et al.*, 2013; Walker and Lloyd-Walker, 2015).

2. Literature review

2.1 Socialization in OSCM research

The concept of “socialization” was introduced to the OSCM research as a way to manage BSRs to the best of our knowledge by Cousins and colleagues (e.g. Cousins *et al.*, 2006, 2008; Cousins and Menguc, 2006)[3]. Socialization refers to “the level of interaction between, and communication of, various actors within and between organizations, which leads to the building of personal familiarity, improved communication and problem solving” (Cousins and Menguc, 2006, p. 607). It facilitates building of inter-personal relationships, trust, interaction, and knowledge sharing (Cousins and Menguc, 2006; Lawson *et al.*, 2009), leading to increased relational capital (i.e. personal relationships people have with each other through a history of interactions, which facilitates trust and reciprocity in the relationship (Cousins *et al.*, 2006; Lawson *et al.*, 2008)[4] and ultimately to better performance (Cousins *et al.*, 2008; Cousins and Menguc, 2006). At the organizational level, it is a member’s social relationships within the group and with the broader social structure (Cousins *et al.*, 2006; Oh *et al.*, 2004).

Socialization can be facilitated with various mechanisms, including workshops, conferences, cross-functional teams, and matrix-style reporting structures (Cousins *et al.*, 2008; Gupta and Govindarajan, 2000; Van Maanen and Schein, 1979). Socialization mechanisms can be divided into informal and formal mechanisms (Cousins *et al.*, 2006; Lawson *et al.*, 2008; van de Vijver *et al.*, 2011); informal socialization mainly occurs outside of the workplace, increasing the level of trust and giving greater time, opportunity, and motivation to strengthen social relationships, whereas formal mechanisms are structures and processes designed to communicate expectations and behavioral guidelines as well as share useful information and knowledge between members (Cousins *et al.*, 2006; Lawson *et al.*, 2008).

Research on socialization in OSCM (see Table I) has mainly assessed dyadic BSRs in ongoing operations settings with large-scale surveys (e.g. Cousins and Menguc, 2006; Lawson *et al.*, 2008). This research concludes that both historical ties (“shadow of the past”) and previous interaction have implications for socialization mechanisms and development of relational capital (Lawson *et al.*, 2008; van de Vijver *et al.*, 2011).

2.2 Socialization in temporary organizational settings

Organizing operations with temporary organizational forms – defined as organizations working on a complex task over a pre-defined, limited period of time (Lundin and Söderholm, 1995) – are typical, for example, in construction (e.g. Gann and Salter, 2000) and film industries (e.g. Manning and Sydow, 2011). Temporary organizations are characterized by a pre-defined limited timeframe and discontinuity (Bakker, 2010; Lundin and Söderholm, 1995), distinguishing them from enduring organizations and ongoing operations. In addition, projects as temporary organizations proceed through a set of predefined stages that each have distinctive features, posing different managerial requirements (Morris, 1994).

	Organizational context and data	Organizational relationships focus	Assessed concept relationships	Main findings
Cousins <i>et al.</i> (2006)	BSRs in manufacturing context; internet-based survey of 111 UK manufacturing firms in various industries	Formal and Informal socialization mechanisms; Relational capital (degree of mutual respect, trust, close interaction)	How formal and informal socialization mechanisms facilitate relational capital and further facilitate supplier relationship outcome (e.g. improved design, increased sales)?	Formal socialization mechanisms do not lead to relational capital as such but potentially facilitate informal mechanisms, and this mix facilitates relational capital. The results, however, are suggested to be potentially context-specific. Relational capital facilitates improved supplier relationship outcomes
Cousins <i>et al.</i> (2008)	BSRs in manufacturing and service contexts; internet-based survey of 142 UK firms in various industries	Socialization mechanisms (Joint workshops, Regular supplier conferences, Cross-functional teams, matrix-style reporting structure)	How communication performance measures and operational performance measures facilitate socialization mechanisms and further business performance?	Socialization mechanism fully mediate the relationship between supplier performance measures and business performance
Cousins and Menguc (2006)	BSRs in manufacturing and services contexts; internet-based survey of 142 UK firms in various industries	Socialization (joint social events and workshops, team building, on-site visits, regular supplier conferences); Integration in areas of scheduling, order management, forecasting and operation planning	How do SC socialization and integration affect supplier's operational performance (e.g. lead time, delivery to schedule) and supplier communication performance (e.g. information exchange quality) and the relationship of supplier's performance on buyer's perceived level of supplier performance?	Supplier socialization and integration are associated with supplier's communication performance and socialization with supplier's operational performance. Both supplier communication and operational performance facilitate buyer's perception of contractual performance
Lawson <i>et al.</i> (2009)	BSR in product development teams in manufacturing context; internet-based survey of 128 UK firms in various industries	Formal socialization mechanisms (Cross-functional teams, matrix structures, formal project structure); Information socialization mechanisms (Communication guidelines, awareness of supplier issues, social events)	How do informal and formal socialization mechanisms facilitate knowledge sharing (KS); what is KS's relationship with supplier development outcomes, further to buyer development performance and finally financial performance?	Informal socialization mechanisms are most important in facilitating KS, formal socialization mechanisms facilitate informal socialization mechanisms. KS is related to improved supplier development outcomes, further on to buyer development outcomes, and finally financial performance
Lawson <i>et al.</i> (2008)	BSRs in manufacturing context; internet-based survey of 111 UK manufacturing firms in various industries	Supplier integration and Relational capital (trust, personal interaction, respect)	How do supplier integration and supplier closeness facilitate relational capital; How does relational capital and structural embeddedness facilitate buyer performance improvement?	Supplier integration and closeness facilitate relational capital. Relational capital as well as structural embeddedness in terms of managerial communication and technical exchange facilitate buyer performance improvement
van de Vijver <i>et al.</i> (2011)	BSRs; Longitudinal case study on 2 supplier relationships of a high-tech manufacturer		How does socialization affect communication quality?	Past conflicts can diminish the positive effect of socialization on communication quality; if the value of the relationship is questioned, socialization may not facilitate improved communication

Table I.
Research on
socialization in OSCM

Research on temporary organizations and complex projects brings forth a variety of interorganizational collaborative practices and “socialization tactics” to facilitate collaboration and trust among the participating organizations, including workshops, relationship programs, co-locational collaborative spaces, use of facilitators, and joint training (e.g. Hietajärvi and Aaltonen, 2017; Suprpto *et al.*, 2015).

2.3 Project alliances

Project alliance is a distinct multi-organization project form to deliver major capital assets, in which the owner and one or more providers are tied together with a multi-party contract (Lahdenperä, 2012). In contrast to traditional project delivery forms where the client, contractors, and designers work under separate dyadic contracts and manage their relationships separately, project alliances rely on early integration of key actors, joint organization, and a contractual framework to align goals and share risks and rewards (Department of Treasury and Finance, 2010; Walker and Lloyd-Walker, 2015). They feature a significant philosophical change from competition-based models and optimization of single actors’ performance to highly collaborative models, ensuring maximum value for all participants. Project alliances emerged in the early 1990s’ industrial North Sea oil projects in UK and have been developed further in the Australian infrastructure and construction sectors’ public projects (Walker and Lloyd-Walker, 2015). During the recent years, they have increasingly been used in public infrastructure projects in Europe. Currently, project alliances are considered as the optimal solution to manage complex projects, including adversarial attitudes and opportunism (Suprpto *et al.*, 2016).

As an organizational entity, the alliance organization conceptualizes, develops, and executes the project innovatively together, requiring continuous management of organizational interfaces (Baiden *et al.*, 2006; Ibrahim *et al.*, 2013; Kumaraswamy *et al.*, 2005). Therefore, significant emphasis is needed on building the relationships, collaborative culture, and trust between the participating organizations, which are considered as core elements of an effective project alliance (Lahdenperä, 2012). The alliance contract includes two parts (Lloyd-Walker *et al.*, 2014): a contract, which ensures that the financial reward and penalty provisions drive motivation, and a behavioral agreement, which requires partners to work together in good faith, acting with integrity, and making decisions that are best for the project. Such collaborative identity, no-dispute culture, unanimous decision-making processes, sink-or-swim attitude, and mutual respect and trust have been found to be salient to project alliances (Clegg *et al.*, 2002; Hietajärvi and Aaltonen, 2017). Achieving quickly behavioral unity, personal affinity, and collaborative culture in the project alliance organization has, however, proven to be challenging: conflicts with the traditional buyer and supplier roles and tensions between the alliance participants’ home organization values and values of the temporary project alliance organization can cause challenges as well as result in struggles with identity among the alliance participants (Clegg *et al.*, 2002).

Project alliance starts with a client’s strategic procurement phase when the project delivery form is decided. This is followed by competitive tendering phase with the offering consortium. In the development phase, then, the client and the providers jointly develop the project concept under a development phase alliance agreement (Walker and Lloyd-Walker, 2015). The commercial model’s structure and key target areas are developed jointly during this phase and the project plan is produced. If in an agreement, the parties then proceed to the execution phase in which the actual product/services are produced. Finally, the project ends with a post-project phase typically including a guarantee period (Department of Treasury and Finance, 2010). In this study, we focus on the alliance tendering and development phases, which include preparing the tender within the consortium of providers as well as joint concept development and planning in the joint alliance organization, consisting of the client, and the tendering consortium.

3. Methodology

This research follows a “theory elaboration approach” (Ketokivi and Choi, 2014). Following the idea of theory elaboration (Ketokivi and Choi, 2014), the study builds on the research on organizational socialization in OSCM (e.g. Cousins *et al.*, 2006, 2008; Cousins and Menguc, 2006; Lawson *et al.*, 2008) to develop understanding of socialization in the context of temporary operations, such as project alliances. Empirical data are used to illustrate, elaborate, and develop contextualized understanding (Ketokivi and Choi, 2014; Voss *et al.*, 2002).

We collected empirical data of the use of socialization mechanisms and relational capital in two alliance projects, following a multiple case study design (Yin, 2009). A case study approach was considered suitable for the following reasons. First, case studies are especially suitable for theory elaboration purposes (Ketokivi and Choi, 2014), supporting our aim of elaborating research on socialization in an unexplored – simultaneously fundamentally different – context of temporary operations and organizational settings. In-depth case studies are especially suitable for developing the understanding of the interaction of a phenomenon and its context (Meredith, 1998; Yin, 2009). Second, two in-depth case studies support the aim of providing rich analysis and understanding of complex organizational relationships. The selected cases also allow to make comparisons. Finally, this paper aims to develop understanding of how socialization is managed in the tendering and development phases, making the context highly suitable to be studied with the case study method (Yin, 2009).

3.1 Case selection and empirical context

The selected case projects are a railway renovation project (Case Railway) and a light rail construction project (Case Tramway), both located in a Northern European city and embedded in the same infrastructure industry context. Theoretical sampling logic was guiding the selection of the cases. Both multi-organizational projects are organized as alliance projects and are large and highly complex in terms of their technical content and organizational context, requiring particular emphasis on socialization mechanisms. Case Railway can be characterized as a vanguard project (Brady and Davies, 2004); it was the first project to be using the alliance model in the industry, introducing a significant change in the logic of managing complex projects. Case Tramway, in turn, is the largest project alliance in terms of its budget and scope in the country to date. The two project alliances were chosen as both projects were pioneering with regard to the use of the alliance method, were ongoing at the time of the data collection, and conducted approximately during the same time period in the same industry, which minimized the potential variance produced by cultural, temporal, or organizational orientations in terms of socialization. The cases were also selected so that the participating organizations and key individuals had only limited co-operation experience with each other in the previous projects to control for the potential effect of the “shadow of the past” (van de Vijver *et al.*, 2011). Finally, we had a unique access to collect in-depth data in the early project phases, including interviews and attending lessons learnt sessions and project workshops. While the unit of observation in this study is the project, the unit of analysis is the organizational interfaces within the consortium/alliance organization. A detailed description of the cases is in Appendix 1.

3.2 Data collection

Data collection concerning socialization in the tendering phase primarily focused on activities within the tendering consortiums, while data collection in the development phase broadened the scope to the entire alliance organization. The collected data on both cases include semi-structured interviews as well as research and validation workshops and observations in the lessons learned sessions of the two project cases. The data were complemented with project documentation, including organizational charts of the project,

process descriptions, behavioral guidelines, public value-for-money reports, and implementation plans developed in the development phase. The data collection addressed organizational issues, such as integration, socialization, and contractual issues. For this particular paper, we focus on analyzing the data from the perspective of socialization. Details of data and data collection are available in Table II. In Case Railway, the interviewees were selected by first contacting the assistant project manager, who knew all the key actors in the project and was able to identify the relevant interviewees; all interviewees represent the three organizations constituting the core alliance organization and had been actively involved in the tendering process and project development. In Case Tramway, the interviewees were selected by first contacting the key development persons from the participating organizations, who were able to select the most appropriate interviewees. The interviews were also scheduled and arranged by a project engineer and organized in the co-locational space of the project.

All the interviews were recorded and transcribed into text. In addition, notes were taken during the interviews. The interviews were conducted in the local language and the quotes were translated into English by the authors for the purposes of the paper. The semi-structured interviews covered general themes related to the project alliance (key events over the lifecycle, processes, people, tools, and techniques), and more focused questions related to organizational integration and socialization in the different phases of the project lifecycle (see the detailed research protocol in Appendix 2). To ensure the validity of the data, all interviewees were given an opportunity to check the transcripts and analysis. In addition, the results of the Case Tramway were also validated in workshops.

3.3 Data analysis

The data analysis started by building a brief case description of the cases from the beginning of the tendering phase until the end of the development phase. We then proceeded to more systematic coding of the data. One of the authors was primarily responsible for coding of the data, but the analysis was discussed and reflected among the authors as the analysis proceeded. The interview transcripts, other documentary data, and observation memos were coded with NVivo and Excel in several rounds.

First, we searched the text data for descriptions of the use of socialization mechanisms. This open coding resulted in identifying the variety of mechanisms in both cases such as informal workshops outside office, development of joint behavioral guidelines, use of liaison persons for socialization when using Last Planner, visualization methods, etc. In this round of coding, also any indication of timing or emphasis related to the use of socialization mechanism was coded. Furthermore, all data indicators concerning a change in their use were coded.

We then classified the first-order codes into more general socialization mechanism categories consisting of the following categories: informal socialization events, communication guidelines, co-locational space's informal premises, organizing structures, workshops and meeting, co-locational space, visual management, formal evaluations of collaboration and guidelines and rules. These identified categories could then be classified under the categories of informal and formal socialization mechanism used in prior research (Cousins *et al.*, 2006, 2008; Cousins and Menguc, 2006). The categories with illustrative quotes are presented in Tables AI and AII of Appendix 3.

Coding of relational capital followed the established definition (e.g. Cousins *et al.*, 2006); we first coded all incidents related to the degree of mutual respect, trust, and close interaction within the alliance organization at multiple levels (project leadership team, project management team, and project team) in the interview transcripts, secondary data, and observations as well as any indication of timing. This procedure allowed us to get a more profound and in-depth portrayal of how the key individuals in the alliance projects

Data – Case Railway				
<i>Interview data – Case Railway</i>				
Interview number	Job title	Company	Date	Duration (total 778 minutes)
RI1	Assistant project manager	Client/National Traffic Agency	November 27, 2014	111 minutes
RI2	Alliance leadership team member	Client/National Traffic Agency	November 27, 2014	92 minutes
RI3	Alliance project manager	Constructor	December 5, 2014	110 minutes
RI4	Person in charge of contractor	Other member of the alliance organization	December 5, 2014	108 minutes
RI5	Design manager	Alliance Management Team/Designer	December 10, 2014	91 minutes
RI6	Client organization's consultant	Alliance Management Team/Designer	December 11, 2014	83 minutes
RI7	Alliance leadership team member	Client/National Traffic Agency	April 15, 2015	93 minutes
<i>Workshop and meeting data – Case Railway</i>				
RW1	Observations in the lessons learned session which engaged all the key persons of the project	Representatives from alliance organizations	December 5, 2014	480 minutes (27-page summary; 20-page notes)
<i>Secondary data – Case Railway</i>				
Project plan				
The project's organizational charts, other planning documents, behavioral guideline sheets				
Memos from lessons learned session				
Value-for-money report				
Data – Case Tramway				
<i>Interview data – Case Tramway</i>				
Interview number	Job title	Company	Date	Duration (total 1,325 minutes)
TI1	Cost engineer	Constructor	June 6, 2016	101 minutes
TI2	Communications and stakeholder management Coordinator	Client/City	June 6, 2016	115 minutes
TI3	Project manager	Constructor	June 7, 2016	80 minutes
TI4	Design manager	Designer	June 7, 2016	113 minutes
TI5	Permission engineer	Constructor	June 8, 2016	95 minutes
TI6	Designer	Designer	June 8, 2016	102 minutes
TI7	Communications professional	Constructor	June 8, 2016	90 minutes
TI8	Site manager	Constructor	June 8, 2016	85 minutes
TI9	City engineer	Client/City	June 8, 2016	45 minutes
TI10	Member of ALT	Constructor	June 15, 2016	130 minutes
TI11	Production manager	Constructor	June 15, 2016	54 minutes
TI12	Quotation manager	Constructor	June 17, 2016	87 minutes
TI13	Scoping engineer	Constructor	June 17, 2016	56 minutes
TI14	Production manager	Constructor	February 15, 2016	81 minutes
TI15	Development manager	Constructor	February 15, 2017	91 minutes
<i>Workshop and meeting data – Case Tramway</i>				
TW1	Workshop in the project's co-locational space and group interview (10 persons)	All alliance organizations	June 9, 2016	120 minutes

Table II.
Data and material

(continued)

TW2	Results workshop with all the key decision makers of the project (15 persons)	All alliance organizations	November 15, 2016	200 minutes
TW3	Presentation and participation in the project's kickoff (broad participation, all key individuals from ALT, project management team and project team)	All alliance organizations	December 2, 2014	180 minutes
TW4	Three discussion sessions with the research's supervisory group on the results and their elaboration	Representatives from alliance organizations	Summer and Fall, 2016	From 90 minutes to 120 minutes

Secondary data – Case Tramway

Project plan

The project's organizational charts, other planning documents, behavioral guideline sheets

Memos from workshops and lessons learned session

Value-for-money report from the development phase

Table II.

experienced the atmosphere and collaboration in the daily project work during the tendering and development phases. Mutual respect, reciprocal trust, and personal interaction were also key themes discussed in the lessons learned sessions, allowing us to develop a deeper understanding of how they were developed. Second, we assessed how people at different hierarchical levels perceived the level of trust, respect, and interaction but significant differences across organizational levels were not observed; the interviewees have a rather similar assessment of relational capital in the project alliances. Finally, based on the coded indicators of relational capital, we then assessed the level and development of relational capital during the tendering and development phases. We used a qualitative classification scheme where the level of relational capital could vary between low, medium, high, and very high. Examples and illustrative quotes are presented in Tables AI and AII of Appendix 3.

Finally, we engaged in cross-case analysis to find the similarities and differences across the two cases concerning the use of formal and informal socialization mechanisms during the tendering and development phase and the development of relational capital.

3.4 Validity and reliability concerns

We paid special attention in establishing high validity and reliability (e.g. Voss *et al.*, 2002; Yin, 2009). Means used in the context of this study are summarized in Table III.

4. Analysis and results

In this section, we present the analysis and key results regarding socialization and development of relational capital in the two cases. The results suggest that significant effort was put on socialization in both tendering and development phase to facilitate relational capital. However, the results suggest that the mechanisms differ depending on whether the project is in the tendering or development phase.

4.1 Socialization mechanisms in Case Railway

4.1.1 Tendering phase. The data concerning the tendering phase suggest that various informal and formal socialization mechanisms were used to facilitate the establishment of common ground, trust, and interaction. In particular, informal socialization mechanisms were used from the very beginning to build personal relationships and affinity. Informal socialization mechanisms focused especially on informal events and communication guidelines set to facilitate informal communication. For example, a joint reading club was

Validity criterion	Means by which was addressed in this study
<p>Objectivity: Establishing reasonable freedom from unacknowledged researcher biases and relative neutrality</p> <p>Reliability: Demonstrating that the study process is consistent and stable over time as well as across researchers and methods</p>	<p>Transparent, detailed, and explicit data collection and analysis by developing and following a clear research design (see, e.g. Interview protocol)</p> <p>Data were collected from a broad set of carefully selected informants, which represented different parties in the alliance</p> <p>Development of interview protocol, including an interview guide, shared among all interviewers</p> <p>16 out of 22 interviews and all workshops were conducted by several researchers; one led the interview and the other member(s) took notes</p> <p>Emergent findings and key insights from the interviews were discussed among researchers right after the interviews</p> <p>Recording and transcribing interviews (note: five interviews were not transcribed, but the audiotapes were listened many types as well as notes from these interviews read)</p> <p>Cross-checking analysis to ensure consistency and agreement among researchers</p> <p>Development of a database, facilitating data transparency and transparency of the analysis</p>
<p>Construct validity: Establishing appropriate operational measures for the concepts</p>	<p>Use of a theoretical framework as a guideline and subject to elaboration in the empirical study</p> <p>Interview data were analyzed and presented to a focused group for cross-checking and ensuring validity of the findings, provided for the interviewees for comments as well as presented for a large number of project participants in the execution phase kick-off in Case Tramway</p>
<p>Internal validity: Establishing causal relationships whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships (not a concern in this study because the goal is to note associations, not to make causal inferences)</p>	<p>Data collection of the actual, current alliance projects and integration within the arrangement to avoid recall bias and enhance data accuracy</p> <p>Interviewees were offered anonymity to encourage open discussion and improve data accuracy</p>
<p>External validity: Establishing a domain in which the study's findings can be generalized</p>	<p>Clear and detailed description of the research context</p> <p>Interview data were analyzed based on the interview themes and presented to a focused group for elaboration in Case Tramway, cross-checking and ensuring validity of the findings; participants concurred that their experiences were consistent with the findings</p> <p>Analysis results based on the interview themes were presented, elaborated and discussed with key members of the project organization (Case Railway)</p> <p>Analysis results were presented, elaborated and discussed with key members of the project organization in a workshop and in the kick-off meeting (Case Tramway)</p> <p>The final analysis results were sent for the case project organizations' representatives for comments and for checking that the findings are consistent with their experiences</p>

Table III.
Means of establishing high validity and reliability

established, where learnings on the principles of project alliancing were developed and shared collectively among the constructors and designers.

Formal socialization mechanisms, on the other hand, focused especially on guidelines and rules. Formal socialization events took place in the organizations' own premises and oftentimes entailed facilitated training on the behavioral principles of project alliances and on how these differed from traditional projects (e.g. no blame principle, the requirement to always help others). The active role of the client in the collaborative procurement workshops was also evident in the data. Client's representatives were actively leading, organizing, and participating in the formal socialization activities. During the first procurement workshop, the representatives of the client tended to adopt their traditional "buyer" roles, but they soon realized that a profound change in their attitude was needed in order for the co-operation and interaction to take place. Simulations on real project events were used in the workshops to see how the client's representatives were co-operating and collaborating with the representatives of the tendering consortium. The client's representatives expressed that the procurement workshops were the key events to facilitate the shared understanding between the buyer and the supplying consortium. Other formal socialization mechanisms included guidelines, such as staffing rules to select individuals with an alliance mindset and formal evaluation procedures to evaluate the group dynamics. What was notable regarding the socialization activities during the Case Railway's tendering phase was the broad engagement of actors from multiple levels including senior management, managers, and project professionals in socialization and the fact that the leaders emphasized the importance of informal socialization mechanisms for the success of the project from the start. Table AI of Appendix 3 provides a summary of the identified socialization mechanisms from the data and provides illustrative quotes on their use.

4.1.2 Development phase. The data indicate that various informal and formal socialization mechanisms were systematically used throughout the Case Railway's development phase. Particular emphasis was given on informal socialization mechanisms right from the beginning of the development phase. The interviewees considered it to be extremely important to start the conscious teaming process as soon as the development phase starts in order to integrate the client's representatives to the tendering consortium and to start building a "true joint alliance team" without internal cliques and organizational boundaries. The leaders emphasized that instead of rushing into the given task at hand, it was critical to allocate time to getting to know each other personally, to form the team and its joint identity and for this, various informal workshops and kick-offs were organized. The interviewees emphasized the role of the physical space in these events; workshops were organized in overnight cruises and training sessions and values were discussed in the forest to build cohesion and establish trust. Informal routines such as weekly group hugs or joint behavioral rules were also used to facilitate collaboration.

Formal mechanisms were also used systematically throughout the development phase. Of these, the most important was the co-locational collaborative space of the Railway project, where the key persons worked and where, for example, visualizations were used to facilitate the interaction of the team. Specific alliance philosophy facilitators and psychologists were used to support the maintenance of the group spirit and collaborative working among the client, constructor, and designers. Instead of meetings, the focus was on the workshop type of group work and in empowering all professionals instead of the traditional passive meeting roles. Moreover, formalized rules of behavior, project logos, and symbols were used to support building of the community. What was notable was the central role of the client's representatives and particularly their project manager in establishing and nurturing team spirit with a supportive attitude. In addition, the members of the leadership

team were also committed to their role as the champion for collaboration. Table AI of Appendix 3 provides a summary of the identified socialization mechanisms from the data and provides illustrative quotes on their use.

4.2 Socialization mechanisms in Case Tramway

4.2.1 Tendering phase. According to the data, various informal and formal socialization mechanisms were used during the tendering phase of the Case Tramway by the alliance consortium consisting of the designers and constructors. Of informal mechanisms, teaming events outside the office were used to establish trustful and richness in communication; external facilitators and psychologists were used to reduce the organizational boundaries and to build an atmosphere where ideas could be presented and developed in a collaborative manner between constructors and designers. Formal socialization mechanisms, such as tendering workshops engaged representatives from multiple levels in the organizations and personal evaluations done by psychologists were also utilized in order to identify each individual's personal behavior style and to evaluate the applicability of the persons to work in an alliance project. The client organizations' representatives were also committed to building "the best alliance team in the world" and considered the alliance mode of delivery to be a huge learning opportunity for all. Table AII of Appendix 3 provides a summary of the identified socialization mechanisms from the data and provides illustrative quotes on their use.

4.2.2 Development phase. During the development phase of Case Tramway, both informal and formal socialization mechanisms were used but clearly more emphasis was put on formal socialization mechanisms. Even though there are some indicators related to the use of informal socialization mechanisms, their role was less important and only occasional. Notable was also the rather low interest of project management of the development phase to organize and facilitate informal socialization events on a regular basis. In addition, representatives of the client organization did not consider that it is their responsibility to facilitate the use of such events.

According to the data socialization mechanisms were not used systematically especially in the beginning of the development phase. Various interviewees explained that team development in informal settings was not systematically facilitated when they started to work in the co-locational space; people were eager to start working on the project. This led to a slow development of the team in the beginning and to the persistence of organizational boundaries in the alliance project particularly between the client's representatives and the service providers. The use of the co-locational space was considered as the most important socialization mechanism and its use was planned but the strategy seemed to rely strongly on locating people into a joint working space without facilitating the teaming processes outside the co-locational space. To facilitate people getting to know each other, various changes were made in the use of socialization mechanisms during the development phase. Toward the end of the development phase, the emphasis was put on the role of liaison persons and visualization to build interaction. In addition, informal social events were organized and also the role of the leadership team in facilitating socialization through the use of a godfather system was implemented. Table AIII of Appendix 3 provides a summary of the identified socialization mechanisms from the data and provides illustrative quotes on their use.

4.3 Level of relational capital during the tendering and development phases

In addition to the use of informal and formal socialization mechanisms, we analyzed the level of relational capital in the project tendering and development phases. Examples from data and illustrative quotes are presented in Table AIII.

4.3.1 Case Railway. During the tendering phase of Case Railway, the key actors in Constructor's two units that were engaged in the alliance tendering process started to familiarize themselves with each other and with the project alliance philosophy, for example, through systematically organized weekly learning and tender preparation sessions. The key persons soon realized that the underlying principles of the project alliance approach emphasized heavily behavioral integration in the project team and therefore attention was directed to building team spirit and establishing trust and mutual respect among the members. A project manager of the tendering phase describes the focus on building the spirit of the project as follows: "We really needed to understand that this was all about us, about people. What was relevant was to understand our own behavior in this. And when we were jointly discussing and meeting we truly learned to know each other." Many interviewees emphasized how quickly the level of trust, respect, and collaboration as well as team spirit were formed and were at a high level.

When the project entered the development phase and the client's representatives were integrated to the project team, the interviewees indicated that there was immediate openness for sharing confidential information between the project partners, which was at first surprising. The openness soon led to a situation where it was easier for people to bond with each other, discuss, and build personal relationships as described in the comment by the client's deputy project manager: "We really left all the arguing and conflicts that are so typical in traditional projects behind. And the focusing on solutions, talking about the difficult things and bringing the cat on the table without blaming others – it made us feel good and the alliance spirit really grew. We were not there to find persons to blame but felt that we really were on the same boat even though we came from different organizations. We did have so much more dialogues and conversations in the development phase than in normal projects." Particularly visible was also the level of collaboration as illustrated in the following quote from the design manager: "The level of collaboration in this project has been really good and it just improved all the time during the development phase. The only bad thing is that this alliance is one day going to end." Additional indicators of very high level of relational capital in the development phase were that organizational boundaries were considered invisible, people identified themselves to be working for the joint alliance organization and they also talked in the form of "we" and "us" instead of referring to their home base organizations. Moreover, the collaborative culture was so strong that when new individuals entered the project, they very soon changed their behavior and internalized the values and behavior style of the project; the spirit and strong sense of belonging together featured itself also in the joint humor, internal language and different kinds of joint "Railway routines" that the project had developed.

4.3.2 Case Tramway. In Case Tramway, relational capital during the tendering phase can be characterized as high. The tendering consortium was unofficially meeting regularly, and formation of the team and team spirit was even longed for during the tendering phase as illustrated in the following comment of the quotation manager: "I was very eager at the start. We had such a great group of people, the spirit was great and communication easy and open. Our co-operation was on a very good level and we were able to develop trustful relationships within the consortium [...]" Knowing each other personally was also emphasized within the tendering consortium and interaction with the client was also characterized as easy and novel ideas were invented and openly shared.

The development of relational capital during the development phase can, however, be characterized as a relative slow process, where challenges were particularly experienced in terms of the integration of the client's team to the project as illustrated in the following comment: "The commitment was not that clearly visible in the beginning [development phase] of the project and their dedication to following the co-operational rules of the alliance

was not that clear. We had such a great spirit in the tendering phase. And then it all changed when new persons joined. We did not support the teaming anyhow, just rushed into the task. I would change that now if I could." Various indicators in our data point to the slow process of team development and establishment of trust in the early project development phase of Case Tramway; the interviewees evaluated the team spirit to be satisfactory and indicated that more effort was needed to develop the atmosphere. In the beginning of the development phase, the teaming process was characterized as "taking place relatively slowly" and the individuals were seen to bond and socialize with the members of their own home organizations, indicating lower levels of interaction within the alliance team. Also the organizational boundaries were visible and conflicts, and blaming each other were also reported, which is highly atypical for project alliances. Different types of project management orientations were also present and the data indicate that this was also considered to contribute to the interaction challenges within the entire alliance team as illustrated in the following comment: "There has existed two contradictory types of project management culture and leadership orientation in the project, which has contributed to the general atmosphere. It has also affected our work at the level of the project."

However, toward the end of the development phase, a positive shift in the level of relational capital in terms of, for example, collaboration and commitment toward the project was visible, which is demonstrated in the comment from the project manager of the development phase: "There has been some progression in the spirit and level of collaboration and we have found a new joint tone." Project participants were also indicating that the interaction between the contractors and designers was increasing and becoming easier because of increased trust and respect on each other's professional competences. In the "lessons learned session" of the development phase, individuals were observed to be proud of the development steps that had taken place during the later phase of the development phase as reflected in the following comment: "It has been an important lesson to learn that yes, we can develop the joint co-operation atmosphere and create that kind of co-operative environment. We have been able to change our way of operating for this goal. After the end of the year we have been able to unite our team."

4.4 Synthesis of findings

In the following, we conclude the analysis about the use of socialization mechanisms as well as relational capital with summarizing observations based on the two cases.

First, the analysis indicates that significant emphasis was put on both informal and formal socialization mechanisms during the project tendering phase in both cases to facilitate the development of trust and cohesion within the tendering consortium. Especially the use of diverse informal socialization mechanisms was found to be crucial for the development of inter-personal relationships, team spirit, personal affinity, as well as collaboration and interaction in the tendering phase. The analysis also indicates that the level of relational capital was developed very fast and was high in both Case Railway and Case Tramway during the tendering phase. Hence, we conclude our findings:

- (1) Observation 1. In the context of project alliances, both informal and formal socialization mechanisms are important in creating relational capital.
- (2) Observation 2. In the context of project alliances, informal socialization mechanisms can be used in the tendering phase to build relational capital, especially in terms of developing personal relationships, trust, and interaction.

Second, clear differences in the use of socialization mechanisms were observed during the early stage of the project's development phase across the cases: while formal socialization mechanisms were actively used in both cases, the use of informal socialization mechanisms

was more intensive in Case Railway. The importance of informal socialization mechanisms in building the joint collaboration within the whole alliance project team was also valued and nurtured by the whole alliance organization across different hierarchical levels. In Case Tramway, on the other hand, especially the use of co-locational space and diverse workshops ensured that designers and constructors were collaborating on project-related tasks and also other formal mechanisms were in place. However, more investments in the facilitation of socialization within the team were called for by the participants. While the level of relational capital increased steadily in Case Railway in the development phase, being very high toward the end of the development phase, the early development phase of Case Tramway was characterized by a slow development of team spirit and visible boundaries between the alliance organizations indicating medium level of relational capital. Toward the end of the development phase, Case Tramway, however, indicates that more efforts were directed at, for example, visual management facilitating informal interaction in the co-locational space and team-building events outside the office. Toward the end of the development phase, the level of relational capital was assessed to have improved, and was considered at a high level. Hence, we conclude:

- (3) Observation 3. In the context of project alliances, informal socialization mechanisms can be used in the development phase to further enhance the level of relational capital, especially in terms of integrating the new alliance organization members.
- (4) Observation 4. In the context of project alliances, formal socialization mechanisms, such as co-locational space and project visualization can be used in the development phase especially to maintain relational capital.

5. Discussion

Building on the research on socialization in OSCM (Cousins *et al.*, 2006, 2008; Cousins and Menguc, 2006; Lawson *et al.*, 2009), this study illustrates how informal and formal socialization mechanisms are used in temporary operations to facilitate the development of relational capital. The empirical context for the study is project alliances. First, the findings indicate that significant emphasis is put on informal and formal socialization mechanisms throughout the project tendering and development phases. However, socialization mechanisms are adjusted, depending on whether the project is in the tendering or development phase; in the tendering phase of a project alliance, informal socialization mechanisms facilitate relational capital especially in terms of development of personal relationships and trust, while in the development phase, informal socialization mechanisms facilitate relational capital to integrate the new alliance members. Formal socialization mechanisms, on the other hand, are emphasized in the development phase to maintain the achieved level of relational capital. While the results give support to previous research on the relationship between socialization mechanisms and social capital (Cousins *et al.*, 2006), the findings are more nuanced and somewhat contrary regarding the mutual relationship between informal and formal socialization mechanisms (cf. Cousins *et al.*, 2006; Lawson *et al.*, 2009).

5.1 Contribution and implications

The study provides the further understanding of management of complex projects and also contributes to the OSCM research on socialization. For the OSCM research on socialization, the study provides contextualized understanding of socialization (e.g. Cousins *et al.*, 2006, 2008; Cousins and Menguc, 2006; Lawson *et al.*, 2009); while prior research has focused on dyadic BSRs in ongoing operations, this study provides elaborated understanding of how socialization is managed in the context of temporary operations. As the findings indicate,

both informal and formal socialization mechanisms are important to develop and maintain relational capital and their use depends on the project lifecycle phase. These findings complement prior large-scale surveys on socialization in ongoing operations and dyadic BSRs (Cousins *et al.*, 2006, 2008; Cousins and Menguc, 2006; Lawson *et al.*, 2009); socialization depends on the relationship history of the organizations (van de Vijver *et al.*, 2011) and by providing in-depth understanding of socialization in a multi-party setting.

For the management of complex projects (e.g. Brady and Davies, 2014; Davies and Hobday, 2006), the study provides novel insights into the management of organizational relationships, especially during the tendering and development phases in complex projects, which are critical for project success (Samset and Volden, 2015). The findings increase the understanding on managing the relationships and development of relational capital with formal and informal socialization mechanisms, complementing prior research on temporary organizations and projects, which has assessed a variety of collaborative practices to manage organizational relationships in temporary settings (e.g. Bresnen, 2007; Ericksen and Dyer, 2004). Moreover, assessing how the use of socialization mechanisms varies across project lifecycle in a complex project provides more in-depth understanding on socialization in temporary settings; prior research has acknowledged that temporariness may have significant implications for socialization but has not addressed it explicitly (e.g. Bakker, 2010; Bresnen, 2007; DeFillippi and Sydow, 2016; Saunders and Ahuja, 2006). Particularly the findings of the criticality of the continuous and systematic use of informal socialization mechanisms in building relational capital in the tendering and development phase of project alliances are novel: prior research on project collaboration has tended to highlight the importance of formal socialization mechanisms in establishing trust, collaborative spirit, and co-operation in complex projects (Bresnen, 2007).

Our findings also show how the focus on formal mechanisms, such as the use of co-locational space among constructors and designers is not sufficient in ensuring high levels of relational capital in temporary organizational context, but that the use of informal socialization mechanisms is particularly critical also in the development phase when the alliance organization needs to facilitate mutual trust, commitment, and co-operation across organizational interfaces. In Case Railway the dominant focus during the early development phase was on building social relationships and cohesiveness within the alliance organization across multiple levels which supported the development of relational capital and facilitated inter-personal familiarity and joint problem solving, whereas in Case Tramway the alliance organization was at first very task-driven emphasizing primarily the use of formal socialization mechanisms resulting in lower levels of relational capital. Consequently, our results suggest that a highly task-driven focus instead of investing in informal social collaboration during the project development phase may potentially explain some of the faced relational challenges of complex projects. Therefore, our findings increase the understanding of how the task-driven focus of project work and limited understanding of the joint future may affect relationships (Saunders and Ahuja, 2006). The results of the study also reveal the critical role of the client in establishing and facilitating the use of informal socialization mechanisms and consequently relational capital in the context of project alliances, which has been largely unexposed in prior literature on project alliances.

By focusing on socialization mechanisms in the development of relational capital, the study also contributes to research on alliance projects, which has mainly focused on exploring the contractual and technical features of these arrangements (Ibrahim *et al.*, 2013; Walker and Lloyd-Walker, 2015). This deeper understanding of how to facilitate relational capital in alliance projects may also help to explain why some alliance projects perform better than others (e.g. Jefferies *et al.*, 2014). The findings of Case Tramway also reveal how project alliances, even though putting significant emphasis on formal collaboration and co-operative practices, may face relationship dynamics where collaboration and conflict exist simultaneously.

5.2 Managerial implications

The socialization mechanisms as well as pattern of use of informal and formal mechanisms identified in this study may serve as a basis for managerial decision making in the tendering and development phase of future project alliances. Understanding the variety and use of informal and formal socialization mechanisms as well as the relationship with relational capital may facilitate organizational improvements both in developing relational capital as well as in crafting more effective socialization mechanisms in organizations.

The findings of the study imply that managers and core members of alliance projects need to be aware of the changing nature of how socialization mechanisms facilitate relational capital in tendering and development phases and adjust their managerial approaches and organizing accordingly. While informal socialization mechanism are especially critical in the tendering phase to develop the personal relationships and mutual trust, informal socialization mechanisms are critical in the development phase to integrate the new organizational members. Moreover, formal socialization mechanisms are required in the development phase to maintain the achieved level of relational capital. The findings concerning the dynamics of socialization mechanisms emphasize importance of continuous reflection, adjustment, and adaptation of the used socialization mechanisms. Developers and promoters of complex projects need to also be aware of the critical role that the buying organization i.e. the client plays in the facilitation of the relational capital in alliance projects: According to our findings, the client's driving and active role in establishing informal co-operation and commitment within the alliance organization seems crucial for facilitating high levels of relational capital.

5.3 Pedagogical implications

The study can be used for pedagogical purposes with different student audiences in various ways. As such the study is most suitable to be used as a pre-reading material based on which students can address different themes in the class discussions and learning essays.

The study offers ideas on the use of formal and informal socialization mechanisms in the context of temporary operations and can therefore be used to facilitate discussions on the enablers and challenges of team building and establishment of relational capital in projects with undergraduate students. With them, the study can also be utilized to address the key features of project alliances and how these characteristics facilitate the co-operation and collaboration in project contexts.

With graduate students, the study can be used to address in a more in-depth manner the use, timing and balancing processes of informal and formal socialization mechanisms in different lifecycle phases of projects. Graduate students could also be encouraged to discuss analytically the distinct role of project alliance set-up in enabling socialization in temporary operations and, to reflect, following contingency thinking, whether the identified socialization mechanisms could be used in other types of project delivery arrangements and operational contexts and to what extent. Here, the processes of establishing mutual trust, behavioral unity, and commitment quickly in temporary operations contexts brought up by the study could be reflected, e.g. against the ideas on swift trust in temporary teams (Meyerson *et al.*, 1996). The potential dangers and implications of overinvesting in the development of relational capital in temporary operations contexts could also be addressed, e.g. in the light of the paradox of embeddedness (Uzzi, 1997). Furthermore, as the study generally adopts a rather favorable approach toward the use of project alliances, the paper could also be used to challenge the students to reflect on the use and suitability of project alliances in the management of complex projects from a more critical perspective (see, e.g. Merrow, 2011).

For executive audiences, the paper can be used in various ways. A practical starting point would be to use the classification templates of formal and informal socialization mechanisms and ask the managers to map and analyze the use of the different mechanisms in their projects. Then, based on these analyses, a discussion on the challenges and best

practices of using socialization mechanisms in projects could be carried out. Furthermore, the findings of the study could be used to reflect on the socialization processes during the project tendering phase, which is a rather overlooked area in practice.

The study can also be used for research methods teaching. The methodology chapter could be used as a catalyst for a discussion on theory elaboration approach as a case research strategy (Ketokivi and Choi, 2014) and the appendices that entail detailed research protocol and analysis templates could be used as examples for facilitating discussions on the reporting of empirical evidence and data analysis.

5.4 Limitations and future research

The two rail infrastructure cases provide interesting findings about how socialization mechanisms facilitate the development of relational capital in project alliances. Future research could assess socialization in other types of project alliances, taking also into consideration the potential industry and cultural differences. This would also provide an avenue to further enhance the contingency approach to OSCM (Boer *et al.*, 2015). Moreover, research could dig deeper into the organizational relationships in alliance projects, assessing, for example, the potential complementary effect that organizational integration (e.g. Flynn *et al.*, 2010; Turkulainen and Ketokivi, 2012) has on achieving the benefits of socialization.

The project alliances under analysis are ongoing projects. While this is essential to allow us, for example, to observe managerial decision-making, it also poses limitations. The empirical analysis focused on the tendering and development phases. While socialization is particularly critical in these phases (Samsø and Volden, 2015), future research could extend the analysis to the entire project lifecycle to develop understanding of socialization over the project lifecycle.

Notes

1. Project alliances can be considered as an extreme form of organizing to facilitate the management of organizational relationships and achievement of common goals in complex projects (Lahdenperä, 2012), aiming to provide “the best value” for all parties rather than, for example, the least expensive or quickest project outcome (Walker *et al.*, 2002). They are fundamentally different from the management of dyadic relationships and dyadic contracts in projects, such as partnerships (Bresnen, 2007). Project alliances are also fundamentally temporary in nature and formed for the purpose of completing a single project only. Hence, they differ from long-term and loose strategic alliances, which have been intensively studied in the strategic management literature (e.g. Kale *et al.*, 2000).
2. We thank the anonymous reviewer for pointing us toward this stream of literature.
3. Socialization has its roots in organizational behavior; at the very general level, it refers to the process by which individuals acquire social knowledge and skills necessary to assume an organizational role and it can vary from a relatively fast and self-guided process to one that requires extensive preparation, education, and training (Van Maanen and Schein, 1979).
4. Relational capital is one dimension of social capital (Nahapiet and Ghoshal, 1998). Research on socialization has addressed especially socialization as a facilitator of relational capital (e.g. Cousins *et al.*, 2006) and, hence, this study also focuses on relational capital.

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Appendix 1. Case descriptions

Case Railway is a railway renovation project to improve safety in a 90-km stretch, reduce maintenance costs by renewing and repairing structures, and reinforce surface and bench structures. The total budget of the project was 106.4 million Euros and it was initiated in 2010. The main goals of the project were to increase rail track usability, undisturbed railway traffic, traffic and occupational safety, cost efficiency, and planning and construction quality and to improve scheduling. The starting premises for the project were purposefully loose to enable flexibility, innovations, and search for appropriate technical solutions. The preliminary baseline information included the client’s goals for the project, initial cost estimates, and plans produced by the client before the actual alliance development phase. The timeline for the project is shown in Figure A1.

The project alliance organization in Case Railway consisted of the partners who had signed the development phase alliance contract: National Traffic Agency (client organization) and Contractor (who was the main contractor for both design (RailDesigner) and construction work (RailConstructor). In addition, a consultancy company Designer acted as the client’s consultant providing construction

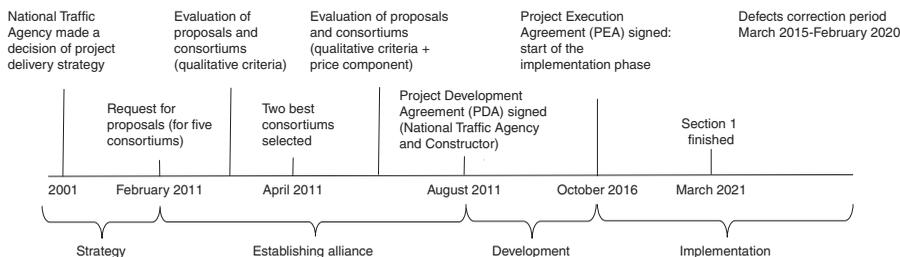


Figure A1.
Timeline of the Case Railway

management services for the project. Together, these organizations formed a multi-organizational project network during the project's development phase which included Alliance Leadership and Alliance Management Teams as well as other members of the alliance organization. Alliance Leadership Team was responsible for the high-level management of the project, setting up the key target areas, and, for example, for solving any possible disputes. It also aimed at unanimous decision making. Alliance Leadership Team selected the project manager for the project, who runs the Alliance Management Team, and was responsible for the operative work during the development phase. Other members of the alliance organization played also a key role in executing the practical project work and included experts on project alliance and designers. In addition, several cross-functional working groups on specific areas such as safety and cost-follow up served as coordination and development bodies during the development phase. In addition, Alliance Consultancy (consulting firm) provided alliance management facilitation services. Case Railway's project network is presented in Figure A2.

Case Tramway is a public transportation system project being built by the Tram Alliance in a Northern European City. The key goals of the tramline system include making the everyday life and transportation easier in the municipality, supporting the growth and development of the urban area, and increasing the city appeal. In June 2014 the general plan for the tramway was approved by the City Council and the quotation process was initiated in Spring 2015. The total cost estimate for the project that is binding all alliance parties and includes the client's procurements, the client's risk reserve, and the bonus pool is 238.8 million Euros. The implementation plan for part one covers 15 kilometers of a two-track line. The alliance contract also covers the power supply stations, the relocation of pipes and cables to make way for the tramway infrastructure, the construction of bridges and supporting walls, as well as the implementation of technical systems, such as the electricity supply for the rails and tram traffic monitoring and control. The construction of Section 1 is estimated to take about five years and the construction work in 2017 has been started on several sites.

The preliminary baseline information included client's goals for the project, initial cost estimates, and plans produced by the client before the actual alliance development phase. The competitive tendering place took place during Spring 2015 and two best consortiums were selected in April 2015 and the final selection made in June 2015. The initial integration requirements at the start of the project were considered extremely high due to high task complexity and uncertainty inherent in the project. A great deal of uncertainty was related to the linings of the tramway, street plans, and old cables that needed to be moved away. The timeline for the project is shown in Figure A3.

The Tram Alliance is composed of the City (the client) and the service providers ConstructorTram, ConstructorCo and DesignerTram. ConstructorTram, and ConstructorCo are responsible for construction of tramline infrastructure and depot area and ConstructorTram and

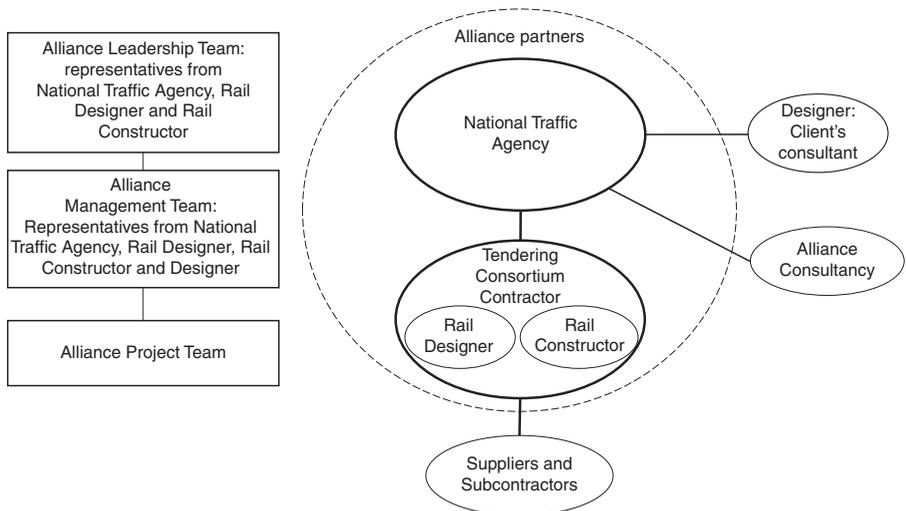
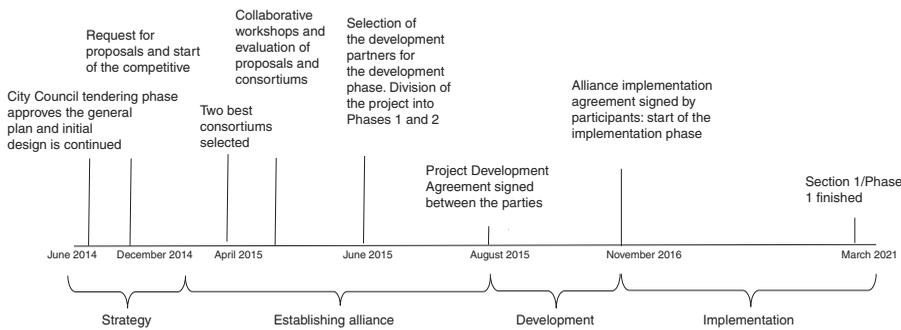


Figure A2.
Governance structure
and participating
organizations in
Case Railway

Figure A3. Timeline of the Case Tramway



DesignerTram for the design. The project governance model for the development phase consisted of Alliance Leadership Team (responsible for the high-level management of the project, setting up the key targets, and solving any possible disputes) and of project management team (controlled the daily operative management and project reporting). In addition, different disciplines had their own leaders and cross-functional working groups were also formed. The Tramway alliance organization is presented in Figure A4.

Appendix 2. Interview protocol

Background

The research and interviews were focused on understanding how integration among the alliance organizations had been managed so far in the project in its different phases. More specifically, the purpose was to understand better how integration was planned to be achieved at the beginning of the project, what kinds of integration mechanisms have been used and how and why their use has changed. In addition, the study addressed the overall achievement of the project's objectives, team-building activities, and the level of co-operation. The interview themes are presented in the following. The list of themes and more specific questions were modified depending on the interviewee.

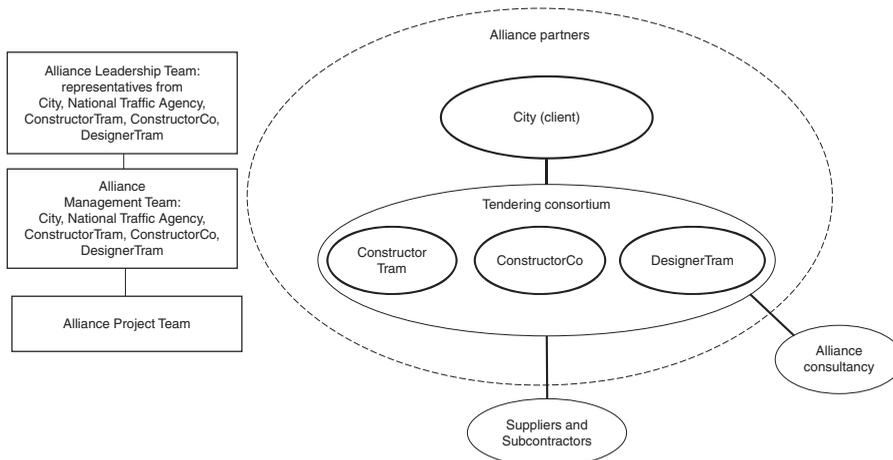


Figure A4. Participating organizations in Case Tramway

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Interview themes

Background of the interviewee and alliance background information

Background and previous experience: experience in this alliance and others; organizational experience in alliances; characteristics of this project and key events; alliance organization; key successes and challenges so far.

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Organizational and contractual integration

Integration motivation, shared understanding and equality of alliance partners, governance model, roles and responsibilities; coordination practices; joint facilities and co-location; alliance contract

Behavioral- and relationship-based integration capabilities

Team-building activities; joint identity; leadership and alliance leadership team; trust-control balance; best for the project spirit; no blame culture and transparency

Technological and process integration

Integration of technical disciplines and tasks and practices for these; management of scope creep; visual guidance and management; big room practices; technologies facilitating collaboration; innovation processes; risk management; management of conflicts and consensus decision-making

Continuous management of integration

Learning and continuous reflection; reciprocal interdependence; flexibility competences; planned adjustments and changes in integration practices.

	Tendering phase Used socialization mechanisms Illustrative quotes	Development phase Used socialization mechanisms Illustrative quotes
Informal socialization mechanisms	<p><i>Informal socialization events:</i> Dinners and joint informal lunches in combination with the tender preparation workshops</p> <p>Traveling and trips to acquire information from USA on projects that facilitated the familiarization between individuals</p> <p>Teaming events outside the office to build connections and share knowledge between constructors and designers</p> <p>Collective knowledge building outside the offices of participants: a joint reading circle on project alliances that met regularly</p> <p><i>Communication guidelines:</i> Use of psychologists to support the process of becoming acquainted with each other</p> <p>Creation and codification of common rules and values for the tendering consortium</p> <p><i>Co-locational space's informal premises:</i> –</p>	<p><i>Informal socialization events:</i> Regular kick-offs and start of the year and end of the year events that took place in unofficial environments: joint project's cruise trips established as a tradition</p> <p>Getting to know each other personally in exceptional environments: forest cabin meetings with alliance trainings</p> <p>Informal team spirit building events and informal alliance training</p> <p><i>Communication guidelines:</i> Routinized informal socialization activities: group hugs of the project team</p> <p>Establishment of common behavioral rules and guidelines for the alliance project team based on Australian guidelines</p> <p><i>Co-locational space's informal premises:</i> Joint lunches among personnel co-located in Big Room during the development phase</p> <p>Establishment of joint rules for how to behave in the co-locational space and values for the project to guide socialization behavior were established together at the start of the project: The creation of our way of working in this project</p>

(continued)

Table AI. Socialization mechanisms in Case Railway

	Tendering phase Used socialization mechanisms	Development phase Used socialization mechanisms	Illustrative quotes
Formal socialization mechanisms	<p>“The tendering team consisted of key persons from each discipline and it was nice to get to know each other this way. The team engaged people from multiple levels, from senior management, management and project professional level”</p> <p>“The workshops and meetings facilitated the dialog. It requires work to get to know each other and how they think. It does not happen overnight and also different opinions existed. It required the attitude for co-operating from us all”</p> <p>“Simulation of co-operation situations is crucial; you can see how we lead together, how capable we are forming co-operation together</p> <p>Simulating particularly problem</p> <p><i>Organizing structures:</i> Establishment of cross-functional and multilevel tendering team and reporting structures in the tendering consortium</p> <p><i>Workshops and meetings:</i> Joint meetings and workshops in each other's premises entailing alliance training Collaborative tendering workshops with the clients in their premises (2 full days) Simulations of real life project situations and team working on real tasks and unexpected events in the procurement workshops Simulation exercises on the</p>	<p>Development of in-official joint logos, symbols and mantras</p> <p><i>Organizing structures:</i> One assigned person that was responsible for communications and its coordination External facilitator who was a leading expert on the alliance model and psychologists to support socialization Systematic use of external facilitators and coaches in the trainings Client's project manager played a key role in the facilitation of socialization from the start of the project Alliance leadership team representatives were considered as supporting actors in the socialization Cross-disciplinary and</p>	<p>to remind and show how we behave here and what are our joint common values in this project”</p> <p>“We also have developed these unofficial symbols for the project. It is important to build the community spirit. Our parent told us that we cannot have any official symbols but we then have these unofficial ones. Now all the people can see that yes, we are working in this star project that is very much different from other projects”</p> <p>“I as a project manager from the client's side saw it as an important task of mine to build the group spirit together with the alliance project manager and the alliance team”</p> <p>“The cross-disciplinary coordination groups e.g. on risk management, electricity systems etc. supported the process of getting to know each other. It was also important that representatives from all the participating alliance members were involved in these groups to facilitate knowledge sharing”</p> <p>“The roles were loosely structured at first to avoid a development where individuals would be more tied to their specified roles. This was also supporting the co-operation within</p>

(continued)

(continued)

Tendering phase		Development phase	
Used socialization mechanisms	Illustrative quotes	Used socialization mechanisms	Illustrative quotes
<p>group dynamics of the team</p> <p><i>Co-locational space:</i> –</p> <p><i>Visual management:</i> –</p> <p><i>Formal evaluations of collaboration:</i></p> <p>Evaluation of the level of socialization (trust, co-operation and information sharing) in the workshops by external and self-assessment</p> <p><i>Guidelines and rules:</i></p> <p>Active and intensive joint tender development in the tendering consortium's premises</p> <p>Client initially with the traditional "buyer's role" and attitude in the workshops</p> <p>Information sessions with the client representatives: asking questions, getting to know each other</p> <p>Formal documentation and guidelines shared by the buyer</p> <p>Staffing rules: Selection of individuals with a collaborative mindset</p>	<p>situations is useful"</p> <p>"The teaming started already in the tendering phase. We developed the behavioral commitment as a team (Lessons learned session)"</p> <p>"We wanted to test what kind of consortium would be best in co-operating with us, the buyer. There you can truly evaluate the compatibility and the quality of the dialog"</p> <p>"First, in the tendering workshops, we were too much in our old buyer's role, in the traditional set-up, but we soon noticed it and tried to change our behavior towards a more co-operative approach"</p> <p>"We used self-assessment in the tendering workshops and evaluation of group work to support the development of team spirit"</p> <p>"The client was very active in supporting collaboration and co-operation. The upper management level was also committed (Lessons learned session)"</p> <p>"We consciously selected those kinds of persons into the tendering team who were known to be co-operative and their personal behavioral style reflected the way</p>	<p>organizational working groups that had regular weekly meetings to develop the project concept further and make decisions on their corresponding area</p> <p>Alliance leadership team played an organizational role in supporting the socialization among the project team</p> <p>Establishment of a structured organizational chart</p> <p><i>Workshops and meetings:</i></p> <p>Weekly face-to-face information sessions in the co-locational space where new personnel are introduced</p> <p><i>Co-locational space:</i></p> <p>Co-locational space's planning principle: Personnel located in the space so that communication, ad hoc questioning and social integration between personnel is working</p> <p>Relative small co-locational space where all the key persons are sitting close to each other</p> <p>Separate meeting and workshop rooms outside the co-locational room</p> <p><i>Visual management:</i></p> <p>Visualization: Last planner used actively both in the co-locational space and in virtual environment to support ad hoc socialization near the visual elements</p>	<p>the team, as there were no clear role boundaries but people could help each other and also shift their roles"</p> <p>"Right at the beginning of the development phase we started with the teaming and building the team of the client and tendering consortiums. We also used a teaming expert here as a facilitator</p> <p>This was important so that we do not go into that old way of interacting. We really need to make sure that we maintain our principles such as no blame for real" (Lessons learned session)</p> <p>"And we also used these mass training events where a very experienced alliance facilitator and coach was training us and maintaining our orientation"</p> <p>"The presence of leadership group in the co-locational space was considered as important. I could see that people really valued it when I visited the co-locational space personally"</p> <p>"Our own co-locational space where we were all present was crucial for developing trust and co-operation and in getting to know others working in the project. Even though not all the people are working in the project's co-locational space all the time, it is really</p>

Table AI.

Table AI.

Tendering phase Used socialization mechanisms Illustrative quotes	Development phase Used socialization mechanisms Illustrative quotes
<p>how people were thought to be expected to behave in alliances”</p>	<p><i>Formal evaluations of collaboration:</i> Self-reflection practices Formal evaluations of the co-operation conducted regularly by external evaluators <i>Guidelines and rules:</i> Systematic alliance philosophy training sessions that highlighted the values of the delivery model for project participants and newcomers Purposefully unclear roles and responsibilities at first to support socialization Weekly information leaflet summarizing the key highlights of the project and introducing new personnel Guidelines and requirements for regular the face-to-face presence in the co-local space for virtual workers Personnel selection guidelines for the development phase: the recruiting principles highlighted the need to select co-operation-oriented personnel to the project Codified familiarization and introduction practices Plus delta practices at the end of official meetings to collect development needs and good practices also with regard to group work and team dynamics used systematically at the end of each meeting Established guidelines for conflict resolution</p>
	<p>important to meet there regularly face-to-face. For this we had weekly meetings in the space As part of the designers were working from distance, we considered it important to have some kind of rules for joint face-to-face meetings in the Big Room as well as establish guidelines on how we actually interact with the virtual workers. It easily happens that they are forgotten” “We take this plus/delta routine at the end of each meeting very seriously. At the end of each meeting we discuss what can we improve eg. related to group dynamics and reflect on these lessons” “We also evaluated the co-operation of the team both formally and informally during the development phase. It was used to develop our working practices” “We were really flexible in terms of the roles in development phase” (Lessons learned session) “When new people were selected we always thought about their personal orientation and adaptability to the alliance philosophy. There are persons who are more suitable for working in alliances and then there are those who like conflicts and like to argue”</p>

	Tendering phase Used socialization mechanisms	Illustrative quotes	Development phase Used socialization mechanisms	Illustrative quotes
Informal socialization mechanisms	<p><i>Informal socialization events:</i> Joint lunches associated with tender preparation workshops with each other</p> <p>Teaming events outside the office to get to know each other, build connections and share ideas and knowledge between constructors and designers</p> <p><i>Communication guidelines:</i> Use of psychologists and leadership educators to support the process of becoming acquainted</p> <p>Development of common rules and values for the tendering consortium</p> <p><i>Co-locational space's informal premises:</i> –</p>	<p>“You could feel the co-operative spirit during the tendering phase. I was extremely motivated, proud and so enthusiastic of working in this team. We also had some occasional informal events such as dinners that built the co-operation”</p> <p>“We used external collaboration experts and psychologists to facilitate the team building during the tendering phase”</p> <p>“During the tendering phase, we noticed that there existed different types of working cultures in the different companies participating in the alliance. This was something that we discussed a lot and the fact that we needed to create joint ways of operating for this specific project, not just rely on the practices of one organization”</p>	<p><i>Informal socialization events:</i> Occasional joint, informal teaming events outside the office: poker night, a dinner</p> <p><i>Communication guidelines:</i> Establishment of common rules, values and guidelines for the alliance project team by engaging a large number of people to the process</p> <p>Revision of the rules and guidelines during the later phase of the development phase</p> <p>Establishment of Big Room rules as guidelines for socialization (presented on the walls in each meeting room), as well as development of virtual etiquette guidelines</p> <p><i>Co-locational space's informal premises:</i> Joint lunches and coffee moments among personnel co-located in Big Room</p> <p><i>Organizing structures:</i> One assigned person that was responsible for internal communications was hired during the late development phase.</p> <p>Use of external facilitator and consultant in meetings to support and enable alliance type of co-operation and decision-making</p>	<p>“We have occasionally these free time events but you could have had them more</p> <p>I do not have that much interest in hanging out in these informal events”</p> <p>“We have these alliancing principles for the project that were jointly developed in the beginning. After this we have tried all kinds of styles and also revised these”</p> <p>“We have also created rules that designers can work in Big Room even they would be working for other projects there. This has increased their commitment”</p> <p>“The guidelines for Big Room working that we created have worked rather well”</p> <p>“Joint lunches and coffee moments have really supported the interpersonal familiarization” (Lessons learned session)</p> <p>“During the later development phase, we hired a person to be responsible for internal communication. This role has advanced information sharing and also facilitated socialization within the project”</p> <p>“During the later development phase, we saw that it was important to support the different discipline</p>
Formal socialization mechanisms	<p><i>Organizing structures:</i> Establishment of cross-functional and multilevel tendering team and reporting structures in the tendering consortium</p> <p><i>Workshops and meetings:</i> Joint meetings and workshops in each other's premises focused on getting to know each other</p>	<p>“We invested in the quotation phase extremely much time and resources and spent a lot of time in different kinds of workshops to facilitate teaming and to train the individuals with regard to project alliances”</p> <p>“We really made progress and developed during the tendering phase a lot. An extensive group of</p>	<p>“During the later development phase, we hired a person to be responsible for internal communication. This role has advanced information sharing and also facilitated socialization within the project”</p> <p>“During the later development phase, we saw that it was important to support the different discipline</p>	

(continued)

Table AII.
Socialization mechanisms in Case Tramway

Table AII.

Tendering phase		Development phase	
Used socialization mechanisms	Illustrative quotes	Used socialization mechanisms	Illustrative quotes
<p>personally at multiple levels (senior leadership team, project management and project professionals from different organizations)</p> <p>Collaborative tendering workshops with the clients in their premises: client's co-operation mode and development commitment</p> <p>Information sessions organized by the procuring organization: introducing key persons of the client</p> <p>Simulations of real life project situations and team working on real tasks and unexpected events in the procurement workshops</p> <p><i>Co-locational space:</i> –</p> <p><i>Visual management:</i> –</p> <p><i>Formal evaluations of collaboration:</i> Joint discussions and reflections on the results of the psychological evaluations of the tendering team</p> <p>Formal psychological evaluations of each other's natural personal orientation and leadership style</p> <p>Evaluation of the level of socialization in the workshops by externals and self-assessment</p> <p><i>Rules and guidelines:</i></p> <p>Teaming exercises and innovation exercises in workshops with different kinds of roles for the</p>	<p>people was able to efficiently develop excellent outcomes just in few hours”</p> <p>“We had quite a broad team with all the key persons from all the tendering consortium’s organization. One of the organizations had experience from an ongoing project alliance and they were the ones who shared us experiences”</p> <p>“It helped us a lot that we got to know each other on a personal level. We collectively familiarized ourselves and trained together as one team as those people who are those who are in ‘Tramway’, the Tramway team”</p> <p>“Tendering phase was significant in training us into the alliance philosophy and in building the teaming principles. Those who were involved in the tendering phase received extremely much education on alliances”</p> <p>“We were developing the tender jointly within the consortium very intensively and all contributed”</p> <p>“The client’s collaborative procurement workshops were extremely good and they were the ones that actually integrated the team together. The co-operative spirit was high”</p>	<p>Assigning alliance leadership team members as godfathers to different disciplines during the latter part of the development phase</p> <p>Cross-disciplinary and organizational working groups that had regular weekly meetings to develop the project concept further and make decisions on their corresponding are</p> <p><i>Workshops and meetings:</i></p> <p>Weekly face-to-face sessions in the co-locational space where new personnel was introduced were added as a management practice during the later development phase</p> <p><i>Co-locational space:</i></p> <p>Use of open and easily accessible project’s co-locational space were client, designers and constructors were located from the early development phase</p> <p>Co-locational space’s planning principle: Personnel located in the space so that communication, ad hoc questioning and social integration between personnel is working.</p> <p>Changes in the co-locational space’s use to support socialization and information sharing within different design disciplines</p> <p>Client’s representatives’ commitment</p>	<p>managers and also make the role of the leadership team more visible to the project”</p> <p>“The organizational chart was created right at the beginning and it relied on the constructor’s experience from a previous alliance project”</p> <p>“Later on we e.g. made the chart visual and added all the individual’s pictures to it and also presented it on the wall of the Big Room. This also facilitates getting to know each other” (Lessons learned session)</p> <p>“We have the alliance expert oftentimes in meetings to ensure and remind us about what it is to work in alliances”</p> <p>“People met regularly in these cross-disciplinary meetings (13 working groups) which were key in bridging the initial distance between the organizations”</p> <p>“The project’s management group meets every week for a whole day in the co-locational space and they are sitting in the middle of this space and you can hear all their discussions. It is really open and completely different from what we were used to in traditional projects”</p> <p>“We might have relied too much on the fact that we just are in the Big</p>

(continued)

Tendering phase		Development phase	
Used socialization mechanisms	Illustrative quotes	Used socialization mechanisms	Illustrative quotes
<p>individuals</p> <p>Active and intensive joint tender development in the tendering consortium's premises</p> <p>Formal documentation and guidelines shared by the buyer in terms of alliances</p> <p>Staffing rules; selection of individuals with a collaborative mindset</p>	<p>"We conducted these personal evaluations and from these already noticed that there existed significant differences between the project managers (development phase and execution phase). But we considered it to be a richness" (Lessons learned session)</p> <p>"There were some external group dynamics evaluators to give us feedback and coach us in our team working that supported significantly the co-operation in the team"</p> <p>"We were looking for individuals who are alliance workers by their orientation and have that kind of spirit"</p>	<p>in terms of Big Room working was on a medium level</p> <p>Informal spaces and coffee room in the co-locational space to facilitate socialization and ad hoc discussions; Scheduled informal morning and afternoon coffees in the co-locational space's coffee room</p> <p>Large meeting table in the middle of the co-locational space where all the management group's meetings are kept to facilitate transparency, openness and information sharing</p> <p><i>Visual management:</i></p> <p>Last planner used actively both in the co-locational space and in virtual environment to support ad hoc socialization near the visual elements</p> <p>Visual innovation board and interdependence management board that also facilitated ad hoc discussions and information exchanges when people were using them</p> <p>Establishment of a structured organizational chart during the later phase of the development phase and presenting the organization visually to ease the socialization of people</p> <p><i>Formal evaluations of collaboration:</i></p> <p>Formal evaluations of the co-operation conducted regularly by external evaluators</p>	<p>Room and do not need facilitation for people getting to know each other. We realized that these kinds of regular sessions were needed"</p> <p>"Co-locational space supports teaming and information sharing significantly. You get answers immediately and you learn to know the people working for the project truly and trust them"</p> <p>"We also strategically planned the Big Room layout in the beginning so that not only people from the same organization would be sitting next to each other. And during the later phase of the development phase, we changed the layout so that the functional design disciplines would be more integrated and working with each other"</p> <p>"The collaborative co-locational space is really great and we have good spaces for socialization. You go to the coffee room and somebody just pops in. You have a short informal chat and you might hear also something relevant related to the project. We also have these morning and afternoon coffee breaks that have supported the development of trust between individuals."</p> <p>"We have used these different types</p>

(continued)

Table AII.

Tendering phase Used socialization mechanisms	Development phase Used socialization mechanisms	Illustrative quotes
<p>Used socialization mechanisms</p> <p><i>Rules and guidelines:</i></p> <p>Unsystematic familiarization and project alliance training practices</p> <p>Plus delta practices at the end of official meetings to collect development needs and good practices also with regard to group work and team dynamics</p> <p>Weekly information leaflet summarizing the key highlights of the project and introducing new personnel</p> <p>Personnel selection guidelines for the development phase: the recruiting principles highlighted the need to select co-operation oriented personnel to the project</p> <p>Development of joint logos and symbols</p>	<p>Used socialization mechanisms</p> <p><i>Rules and guidelines:</i></p> <p>Unsystematic familiarization and project alliance training practices</p> <p>Plus delta practices at the end of official meetings to collect development needs and good practices also with regard to group work and team dynamics</p> <p>Weekly information leaflet summarizing the key highlights of the project and introducing new personnel</p> <p>Personnel selection guidelines for the development phase: the recruiting principles highlighted the need to select co-operation oriented personnel to the project</p> <p>Development of joint logos and symbols</p>	<p>of visualization practices to share information and facilitate individuals' discussions. However, e.g. the interdependence management visualization did not work that well, because management was not setting the example. I could however see that it initiated discussions among people, the board in the wall"</p> <p>"Last Planner" is not just a visual tool for schedule management. Its point is in creating interaction between people and in establishing commitment to work for the goals. As such it is a tool for interaction between people"</p> <p>"The familiarization practices were relatively weak at the start, people just came and started sitting in Big room and I should myself try to find information about the alliance practices and ways of working"</p> <p>"Somehow I think that this plus delta practice that ensures learning is already a tiring routine"</p> <p>"It is very important to select the right kinds of people to work in the alliance. Not all people are alliance type of people and they just cannot work in this kind of set-up and collaboratively and constructively"</p> <p>"The joint logo for the project tries to signal that we work for the project, not in our home base organization"</p>

Case Railway		Case Tramway	
Tendering phase	Development phase	Tendering phase	Development phase
Level of relational capital: High	Level of relational capital: Very high	Level of relational capital: High	Level of relational capital: From medium (beginning) to high towards the end)
No reported conflicts Orientation towards development of respect, interaction, trust Committed client attending the workshop sessions, indicating goodwill, trust, and collaboration Attitude towards joint development in the workshops Plenty of social interaction outside the office "It was easy to share information and present ideas to others coming with different backgrounds. Something to which we were not used to before" "And the commitment of the people, it was very obvious and visible already from the beginning. One very important point for us was that we made sure and really tested that the people were committed to work in co-operation in this project"	No reported conflicts No indicators of mistrust and blaming of each other Good personal chemistry between the project managers Identifying oneself with the project; talking about "we" and "us" and about "the star team" The project is referred to as "the home organization" Descriptions of "being in the same boat" High level of respect to each other Shared humor and language Being proud of the team and having personal attachments to the team Fears of the ending of the co-operation when the project ends High level of openness and information sharing High level of collaborative problem solving Open dialog and continuous encouragement to everyone express their opinion in meetings Strong commitment of the client to the development of trust and interaction Easiness of switching roles or sharing responsibilities between the client's deputy project manager and actual project manager	Extremely good team spirit and internal cohesion of the team Eagerness of the project task at hand and about having the potential possibility in building the world's best tramway system Respect for each other's personal orientation and behavioral styles Being grateful for the opportunity to discuss freely and openly with the designers/constructors and for the cross-disciplinary set-up "The co-operation and spirit in the workshops were good and you could feel the enthusiasm concerning the joint journey" "We had a lot of dialog and discussions at the beginning of the tendering consortium" "We were extremely well prepared and teaming started strongly at this stage" (Workshop session)	Blaming occasionally each other Indicators of not fully committing to the decision-making processes of project alliances Individuals reported occasionally signs of organizational boundaries and did not always talk about "us" but identified themselves with their own home base organization particularly at the start of the development phase Indicators of challenges in the collaborative alliance spirit particularly in the relationships between the client and the tendering consortium Respecting each other and the opportunity to share owns professional knowledge between the designers and constructors (at the project team level) Medium level emphasis on building inter-personal relationships in informal environments or during one's free time during the early development phase Improved knowledge sharing and increased inter-personal familiarity toward the end of the development phase "There have been times during the development phase, when we have been rowing into opposite directions. It is weird as we know that we should have this "we" spirit and it should not be we

(continued)

Table AIII.
Level and development of relational capital in the two cases^a

Tendering phase	Case Railway Development phase	Tendering phase	Case Tramway Development phase
Level of relational capital: High	Level of relational capital: Very high	Level of relational capital: High	Level of relational capital: From medium (beginning) to high towards the end)
<p>respect to each other's way of thinking, even differently, and co-operation are really developing"</p> <p>"The commitment and trust from the client's side in this phase was very visible. They really trusted our expertise in the workshops, let us make decisions that we considered to be best, it really motivated us already at that point"</p> <p>(Lessons learned session)</p> <p>"Trust has always been there, we have just maintained it consciously" (Lessons learned session)</p> <p>"Experiences from the tender phase and from co-operation during that phase were very good" (Value-for-money report)</p>	<p>People were happy to work together even during free-time (e.g. during weekends as needed)</p> <p>"I have not identified any boundaries at all between the organizations so that I would be considered as a member of my own organization. The atmosphere is really open, you just go and talk to whoever you think has the best knowledge on each issue"</p> <p>"The co-operation has been improving all the time. And our teaming process was really fast. And I was surprised by the fact that from the very beginning we were open and worked in a co-operative mode with the client. So all the individuals understood the difference between the project alliance approach and the traditional approach of executing projects. So that we do not need to talk about these issues first among our supplying consortium in secrecy and then go to the client, but that we can all sit in the same table and talk about all issues. And the co-operation between the client's individuals and us has been working extremely well and improving all the time. We truly respect each other"</p> <p>"During the development phase we</p>		<p>and they situation." (early development phase)</p> <p>"It is really rewarding for an experienced guy like me to be truly able to collaborate with the designers and share ideas and thoughts and get to know them" (later development phase)</p> <p>"There were some differences in the teaming development between groups, the boundaries were visible" (Lessons learned session)</p> <p>"Development phase did not proceed without challenges" (Value-for-money report)</p>

(continued)

Tendering phase	Case Railway	Tendering phase	Case Tramway
Level of relational capital: High	Development phase Level of relational capital: Very high	Level of relational capital: High	Development phase Level of relational capital: From medium (beginning) to high towards the end
<p>learned to know each other, to know what kinds of individuals we are. And when I am discussing with the project manager, I know how he is going to respond, what kind of family he has and how things can be taken care of. The co-operation developed and people found their own slots in this project”</p> <p>“I have not been before with the project manager in the same hot tub. This really has made us friends. It has made taking care of project things really easy”</p> <p>“The atmosphere was really open and it enabled the exchange of ideas, feelings were also present and you did not need to hide them. We were open to react and to ideate changes” (Lessons learned session)</p>			
<p>Note: ^aIndicators of the level of relational capital from the data: (1) mutual respect, (2) trust, and (3) close interaction (Cousins <i>et al.</i>, 2006)</p>			

Table AIII.