

3 Implementing supply chain partnering in the construction industry: Work floor experiences within a Dutch housing association.

Author's notes

As I mentioned in the prologue, a direct inspiration for doing this research was my personal experience of redeveloping the curriculum of Real Estate Management Studies where I have worked as a teacher. At that time, my colleague and I took the view that we changed the organization from the bottom up. With the right intentions, we sincerely expressed our own values about what may be considered good education in a team plan and set a strategy that we also translated to the operational level. This bottom-up change process happened more or less at the same time as I conducted the first case study that is described in this section of the thesis. The idea in this article was to find a pioneer in a housing association that would change the organization from the bottom up as well. In writing the article, we experimented with an analogy of a wildfire, in which the pioneer was the 'spark', the context was the 'oxygen', etc. This analogy never made it to the final article. Moreover, my ideas about bottom-up change processes changed fundamentally, based on the research but also based on what happened in my work as a teacher.

What my colleague and I did, can be divided in several steps. The first thing that we did was writing a team-plan, in which we expressed our ideas. We described our ideas at strategic-, tactical, operational- and team level. I remember this process of writing the team plan as a rather solitary process, but as our plans developed, we started to engage others in developing and executing our plans. We experienced that both the work field and the research center were especially interested in our ideas to collaborate with them more closely, so that teachers, students and professionals would co-create the courses together.

On the other hand, there was also considerable resistance to our ideas, especially among students. We had the idea that if students would spend more time at the school building itself, that would contribute to a greater sense of commitment. So, we developed a time schedule that involved spending a lot more time together at the school. However, the students were, among many other things, worried about the availability of suitable working places where they could concentrate and combining studying (which is

expensive) with their jobs. Whether their resistance was justified or not, a group of students felt a need to develop a website where they could (mostly anonymously) express their worries. Apparently, they did not feel they were being heard otherwise. What they wrote was at some points very personally directed towards us. That was quite confrontational and intimidating to me. In hindsight, I think that, whatever the quality of our ideas was, if we listened more to the student's worries and taking their worries more seriously, the differences between their and our ideas of 'good education' might not be so different as they may have seemed at that point.

But this was the situation we were facing, and at some point, the new curriculum was being implemented. Quickly, we experienced that the execution of our plans was not practically feasible at some points. For example, we had overlooked that our plans involved a lot of revision work. It was necessary to provide our students with feedback. It was more than we could manage at that time. Moreover, our day- and week-schedule was too full and dependent on guest-teachers. Of course, there was also the problem of finding suitable working places. Quickly, we began to adjust the schedules to make it more feasible for guest-teachers, students, and teachers. This is just one of many adjustments that we had to do in order to make the program more feasible.

After about a year, we sort of found our way in this new curriculum, which was clearly a compromise between our initial plans and the adjustments that we (me and my colleagues) had to make while executing the plans. Meanwhile, the context that we worked in also changed. There was a compulsory accreditation, and new colleagues joined us, while other colleagues left our team. And at a certain point, it was decided that our curriculum and the other curricula in our institute would merge into one, meaning that (again) a totally new curriculum would have to be developed. At this moment (April 2017), we are phasing out the last students of the 'old' curriculum and Real Estate Management Studies will not exist any longer.

I would like to emphasize that this description of the process is a non-formal evaluation from my own personal perspective. I acknowledge that others may have experienced this process differently. I think for all the participants in this narrative this was a turbulent phase. The change process resulted in some successes and there were definitely some less successful aspects as well. We had not seen these less successful aspects coming at all. As I described in the prologue, my colleague and I were involved in what we experienced at that moment as 'a bottom-up change process'. We were convinced about the legitimacy of our ideas and actions. In hindsight, I realize that there was none. But that did not mean that we were wrong either. The way I see it now, it was nothing but us being very actively involved in complex responsive processes. The result of our 'bottom-up change process' that we tried to accomplish was a compromise of individuals that were involved in this change, and by doing we developed the curriculum as it was.

This experience influenced my ideas about organizational change, and especially influenced my ideas of bottom-up change processes. I am telling this story, because what happened in my job as a teacher at the University of Applied Science influenced my ideas of this PhD-research. I think this was the main reason to let go of our analogy of the spark and the wildfire, because I do not believe any longer that this is a right analogy. One point that I now see in a fundamentally different way, is the individual manipulability of an organisation. In first instance, I believed in the ability of a pioneer to change an organisation from the bottom-up. But I know now that managers are not able to control and manage an organisation by implementing a plan top down, nor is a pioneer able to control and manage an organisation by implementing a plan from the bottom up. I consider that now as a cognitive bias and thinking about bottom-up change processes is based in the same triangle shaped image (that represents the strategic, tactical and operational level) of an organisation. Certainly, individuals can shape their context as much as the context shapes an individual. And certainly, because work floor professionals depend more on their managers than their managers depend on them, it is likely that the manager has a bigger (but still limited) circle of influence. But what I am attempting to describe is that an organization becomes what it becomes through the interplay of people and ongoing conversations, rather than through a blue-print, strategy, or whatever change plan an individual (or group of individuals) come up with.

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§ 3.1 Abstract

Although much research has been conducted about advantages and challenges for supply chain partnering (SCP) in the construction sector, focus has been mostly on formal aspects of implementation within organizations. Understanding social aspects, however, might be just as crucial to implementation of SCP as understanding managerial and intra-organizational dynamics. Therefore, this paper presents the results of a study in which a work floor professional together with a researcher tried to contribute to the implementation of SCP within the maintenance and refurbishment processes of a Dutch housing association. The results showed that stakeholders could not come to shared understanding of strategic needs, and that that pattern influences and was influenced by social aspects such as leadership and trust, which confirms the importance of explicit attention for social interactions at work floor level for successful implementation of supply chain partnering.

§ 3.2 Introduction

Last decade, supply chain partnering (SCP) has increasingly been seen as a way to increase efficiency and quality of the production processes in Construction Industry (CI) (Akintoye et al., 2000; Bresnen and Marshall, 2000a; Bresnen and Marshall, 2000b; Bygballe et al., 2010; Hongh-Minh et al., 2001; Khalfan and McDermott, 2006). CI is a fragmented industry (Bresnen and Marshall, 2000b; Horta and Camanho, 2014; Vrijhoef, 2011) and is known for its harsh, tough and competitive character (Tazelaar and Snijders, 2010). Combined with project uniqueness and therefore a low level of repetition, coordination problems and underperformance are common in CI (Vrijhoef, 2011). The main goal of SCP is to improve performance by establishing close relationships and integrating respective activities between upstream and downstream actors, such as project managers and (sub)contractors, in the supply chain (Bresnen and Marshall, 2000b; Bygballe et al., 2010).

Different approaches of the SCP concept have emerged, and resulted in a wide range of practices at work floor level (Bresnen and Marshall, 2000b; Bygballe et al., 2010; Vrijhoef, 2011). An often-used definition of SCP is 'a long-term commitment (or it may be applied to a shorter period of time such as project duration) between two or more organizations as in an alliance for the purpose of achieving specific objectives by maximizing the effectiveness of each participant's resources' (CII, 2012). However, SCP is by no means universally applicable, and the way in which SCP is applied highly depends on circumstances and context (Bresnen and Marshall, 2000a; Vrijhoef, 2011). CI, for example, is characterized by location-bound design, on-off production, changing production coalitions for each project, outdoor and environmental circumstances, multiple clients and suppliers involved in a single project, lack of a focal company, etc.

Much research has been performed on SCP in general and more specifically in the CI since its introduction twenty years ago (e.g. Bresnen and Marshall, 2000a; Bresnen and Marshall 2000b; Bygballe et al., 2010; Gadde and Dubois 2010; Vrijhoef, 2011). Many of these studies have a rather cognitive and rational character. Moreover, predominantly, prescriptive, formal SCP tools are addressed, such as selection procedures, workshops, charters, facilitators and measurements. Other scholars have studied 'critical success factors' required to develop partnering relationships and achieve the promised benefits of SCP (Bresnen and Marshall, 2000b; Bygballe et al., 2010). Bresnen and Marshall (2000b), Bygballe et al. (2010), and Gadde and Dubois (2010) found that in CI organizations, SCP is often interpreted as a technical-managerial problem, mainly involving the application of appropriate tools and techniques.

However, the focus on designing prescriptive tools for successful SCP implementation in CI does not provide insight in daily work floor experiences. Therefore, the implications of using the tools at work floor level remain unclear. Also, many scholars have acknowledged the need to account for social aspects (*Bresnen and Marshall, 2000a; Gadde and Dubois, 2010; Gruis, 2011; Kim et al., 2010*). An extensive literature study by *Kim et al. (2010)* showed that commitment, trust, communication, and leadership are critical factors of success for partnering. Still, only few researchers have actually dug further into how the social aspects can be handled in daily work practice (*Bresnen and Marshall, 2000a; Bresnen and Marshall, 2000b; Kadefors, 2004; Kim et al., 2010; Wong, 2001; Wong et al., 2007*).

The current perspective on rather technical-managerial determinants of SCP and a lack of empirical research in the dominant research discourse indicate a strategic choice paradigm. According to this paradigm, managers consciously, logically, and rationally analyze an organization's environment and its internal capabilities and based on that information they set intentions – in the form of plans, programs, strategies, etc. – to come to the best possible results. The manager's intention boils down the organization and in that way the organization becomes what it is (*Stacey, 2011*). Abstract tools, such as software or contracts, are provided to help the professionals to perform the intended plans, programs or strategies. This technical top-down approach and the use of abstract management models neglect actual experiences of professionals (*Groot, 2010a; Groot, 2010b; Stacey, 2011*). It is taken for granted that the plans, programs, and strategies are performed by autonomous individuals, who have their own individual background, knowledge, convictions, values and intentions and that these individuals give shape to and form the process of executing plans, programs, and strategies.

Similar to *Stacey (2005)*, *Schön (1983)* refers to the gap between the highly abstract scientific discourse and the daily work practice of professionals: 'Formal models have been usefully employed to solve problems in such relatively undemanding areas as inventory control and logistics.' (*Schön, 1983*). In more complex situations, where the problem is not clearly defined, such as in our case study, models 'failed to yield effective results'.

Instead of using formal models and all their disadvantages, organizational life can be approached as emerging phenomena 'in complex, responsive processes of relating' (*Stacey, 2005*), which is called complexity theory. Complexity theory advocates that plans, programs, and strategies should be considered as 'gestures' (*Stacey, 2005*). A top down initiative to work according to principles of SCP might be considered as such a gesture. However, an organization is formed by how work floor professionals respond to these 'gestures'. Some gestures may shape the themes of communication. However, the meaning does not lie in the gesture itself, but in the processes of gesture-response. This process of gestures-responses strongly relates to *Weick's (1995)* concept of sense

making. Sense making is a construction of meaning (Weick, 1995) and 'is about such things as placement of items into frameworks, comprehending, redressing surprise, constructing meaning, interacting in pursuit of mutual understanding and patterning.' Sense making is required to achieve changes in behavior. In the process of sense making, it is unlikely to expect that work floor professionals will silently obey and follow the rational decisions – or gestures – that are put upon the technical-managerial way. Instead, 'recipients need to be enabled to recreate their ways of working' (Balogun and Jenkins, 2003). Through formal and informal conversations, across all formal aggregation levels within and between formal organizations, professionals constantly negotiate and interpret all kinds of gestures and in that local interplay between people who are doing their work, the organization is formed, rather than through the overall plan.

Concerning SCP in CI, hardly any attention is paid on how work floor professionals respond to SCP. Studying daily work floor experiences might, however, give important insight in barriers that might slow down the development towards SCP in CI. As *Bresnen and Marshall (2000a)* argue, people and their relationships are the heart of collaborative approaches. Hence, this study aims at getting more understanding of work floor experiences of professionals in CI who are confronted with the principles of SCP. A Dutch housing association that is implementing SCP as a key strategy in their asset management served as the case in our study. This paper describes how the researcher (first author) and a work floor professional together tried to work according to the principles of SCP, which themes emerged from the interplay with other stakeholders, and the generated insights in how social aspects play a role in the emergence of the themes within the development towards SCP.

This paper is structured as follows: [Section 3.3](#) describes the research paradigm, deliverables, function, approach, and methodology. [Section 3.4](#) comprises the context and narratives about work floor experiences. The narratives are analyzed and grounded in theory in [section 3.5](#). [Section 3.6](#) presents our conclusions and places the results in a wider context.

§ 3.3 Research methodology

According to *Stacey (2011)*, the key debate on strategy process is about whether strategic management is a matter of intention (strategic choice paradigm) or whether strategies emerge through the interplay of local interactions (as complexity theory

advocates). In our study, the latter perspective is adopted. The objects of research involve the practical problems of work floor experiences with SCP in their historical, social, cultural, and political context. Different professionals at various organizations might experience other problems, because their experiences highly depend on their context, personal convictions, and personal values that have developed throughout time. Therefore, our study will generate value-based knowledge.

The epistemology of value-based knowledge influences the function and the methodology of our study. First, as mentioned before, previous research focused on designing prescriptive tools for SCP. *Stacey (2005)* claims that focus on impersonal higher levels leads to a situation in which local experiences are disregarded as rather unimportant. By taking local situations and experiences seriously, we get a different notion of what is practical (*Stacey, 2005; Oost and Markenhof, 2004*). Therefore, the function of this study is describing and analyzing work floor experiences in order to get understanding of the problems in day-to-day-practice. Second, concerning methodology, we assumed that, as *Stacey (2011)* suggests, an appropriate method for understanding of interactions between individuals is the use of narratives. The narrative is 'a spoken or written text giving an account of an event/action or series of events/actions, chronologically connected' about what the individuals consider important and what sense is made of the gestures (*Creswell, 2007*). *Creswell (2007)* suggests four steps to collect narratives, that can be performed in arbitrary sequence, which we deployed as follows.

Selecting one or more individuals to participate in the project

The first step is to select one or more individuals 'who have stories or life experiences to tell' (*Creswell, 2007*). In order to do so, we first had to choose an organization within the supply chain. We chose the perspective of a Dutch housing association. Especially since governments cut back subsidies, housing associations need to accomplish more with significantly less money and SCP is considered to be part of a solution to this problem (e.g., *Bortel et al., 2013*). Furthermore, the housing association sector dominates the building and construction sector, owning about 30% of the total housing stock and being one of the biggest investors for contractors in the Dutch housing construction, maintenance, and refurbishment market (*Gruis, 2011*). Therefore, we selected a housing association that is adopting SCP as one of its main organizational innovations. The work floor within this housing association's department of 'real estate improvement' was identified as the focus of our study because the management of that department chose SCP as the key strategy to reduce 20% of their costs. The researcher had to identify one or more individuals within this department who were enthusiastic about the idea of trying to initiate a bottom-up change process towards SCP. We conducted a 'pre-assessment', in

which the researcher interviewed 7 out of 8 of the department's project leaders (one project leader did not want to participate in our research) and to select the individual intuitively. All interviews were recorded and transcribed verbatim.

We soon began to entitle these individuals as 'pioneer(s) in a hotspot', following *Gratton (2007)* who states that 'You always know when you're in a hotspot. You feel energized and vibrantly alive'. Based on the pre-assessment, we selected one participant, fictitiously named 'John' (please note that all the respondents' names are fictitious for privacy reasons). John was chosen based on his enthusiasm and eagerness, since we felt that we were in a hotspot when interacting with him. John clearly had several ideas about executing SCP and how it would influence his job and he said to be monitoring everything in order to develop organizational quality as well as personal functioning. His critical, reflective attitude was deemed to be helpful in the bottom-up change process. John was the only interviewee with which the researcher felt the energy that *Gratton (2007)* described. Therefore, we chose to invite John as the main participant in our study.

Spending considerable time with them to gather stories

After selecting the main respondent(s), *Creswell (2007)* recommends to spend considerable time with him/them to gather stories. The first phase of pre-assessment fluently emerged into this second phase, which we called the experimental phase. The aim of this phase was to make sense of SCP and try to develop a project following the principles of SCP. From March to September 2012, John and the researcher worked together to develop ideas about SCP, and to implement these ideas in the organization. The experimental phase consisted of 100 hours of observation and participation, and was documented in 33 journals.

The researcher worked together with the respondent(s) in a process of mutual learning the researcher, as she acted as a participatory observer (*Clark et al., 2009*). The researcher adhered to some basic rules: (1) she did not operate independently, but always in consultation with John. (2) She acted as a sparring partner for John. John and the researcher reflected on experiences and together they determined their interventions. In these reflective conversations the researcher and John reached shared understanding (*De Lange et al., 2011*). The purpose of these rules was two folded: on one hand, the researcher tried to blend in the situation as much as possible, to really understand the respondent's perspective, behavior, convictions and values. On the other hand, the aim of the reflective conversations was increasing respondent(s)'s awareness of his/their perspective, behavior, convictions and values to pave the way for improvement of his/their own work practice (*De Lange et al., 2011*).

Collecting information about the context of these stories

The pre-assessment that we used to select John, was also used to collect information about the case study context. We roughly analyzed and categorized the transcribed interviews and observation journals inductively. The researcher used this knowledge for better understanding of the context in which John's experiences took place. Main results are described in [section 3.4](#).

Analyzing and restorying

The last step in the narrative approach was to 'analyze the narrative, and then 'restory' them into a framework that makes sense'. Therefore, we used our raw data (documented in 33 journals) to write down the process chronologically. John was involved in describing this process. Then we indicated milestones in the process. Milestones are the moments in the process that we considered as important insights or actions. Based on the milestones, the researcher wrote the narratives. John and the researcher gave a workshop in which John shared his experiences with other professionals from several organizations in the CI. In retrospective, this appeared to be a valuable event, because it gave the researcher insight in how John experienced the process. Because it is impossible to present every generated narrative in this paper, we selected three milestones to describe more detailed, using our raw data again. John was not involved in this process. We chose these three milestones, because we considered these most illustrative to our purpose of describing work floor experiences, and they depict the complexity of SCP in CI.

§ 3.4 Case study: context and narratives

This section provides three narratives that show how professionals, in interplay with each other, shape the partnering processes, although sometimes it is not the shape they had in mind beforehand. Together, the narratives demonstrate an apparent chaotic web of interactions across all aggregation levels, organizational boundaries and knowledge domains. From this web of interactions patterns emerged, but simultaneously these patterns influenced interactions. This first describes the study context in more detail, which is important knowledge to understand the narratives that follow.

Context

The department 'real estate improvement' was chosen as the focus of our study, and is responsible for refurbishment project of 30.000 units in a large Dutch city. Traditional refurbishment projects roughly follow a few stages: First, the department of 'area management' initiates improvement projects by providing 'start-up memos'. The start-up memos are deduced from 'district strategies' that the department 'area management' develops for the housing association. Second, project leaders within the department of 'real estate improvement' are responsible for elaboration of the start-up memos into 'project memos', which are then presented to the board that gives a 'go' or 'no go'. Third, after a 'go', the project leader invites a tender and together with the (sub)contractor produces a definitive design and realizes the project. The managing director of this department (fictitiously called Andrew) aimed at reducing costs by implementing SCP. He targeted at reducing two percent of yearly costs for ten years by (1) partnering with preferred (sub)contractors within specific districts, (2) developing product partnering relations (for example preferred contractors for locking systems in the housing estates), (3) developing SCP with preferred partners with the objective to achieve cooperation structures that extend beyond single projects, and (4) involving contractors in an earlier stage in the process. To achieve these targets, Andrew intervened in several ways: He selected preferred contractors with whom the project leader had to establish projects and he introduced building information modelling (BIM)-software. BIM-software is an ICT- solution that enables stakeholders in the project to work together and simultaneously on a joint project in a virtual environment. Andrew instructed Phil, the project leaders' team leader, to stimulate SCP among the project leaders and help them whenever they needed. To do this, Phil organized meetings and walk-in consultation hours, but the pre-assessment showed that these meetings were not considered fruitful and eventually people started not showing up. Willy was hired as an external BIM-expert. His official position was to provide technical solutions, but in practice it turned out that he functioned as a sparring partner for the project leaders. Next to these technical-managerial interventions, the managing director believed that a change in culture was necessary to accomplish the targets, because 'SCP asks for another way of working'. The managing director had no specific ideas about how to accomplish this change in culture. Participating in this research was one of his interventions, because he believed that project leader's self-reflection could help them to become more aware and therefore also support change in behavior.

Narrative 1: A narrative about a BIM-session

Pre-assessment showed that all respondents agreed that the main difference of SCP compared with the traditional building process of inviting tenders is that (sub)contractors are involved in early phases of the project. Project leaders establish early involvement

by organizing 'BIM-sessions'. In BIM-sessions, project leaders invite co-makers, such as contractors, subcontractors, and occasionally end users, in early phases to co-create projects. This is a narrative about a BIM-session John organized for one of his projects, coming from one of the 33 observation journals: John admits that he is nervous for his second BIM-session. Last week did not go well. The purpose of that session was to compose a list of technical measures for a refurbishment project. However, every proposed intervention caused a lot of discussion. People got irritated and contractor complained: 'Can we bring some more structure in this?' Today John developed a conceptual list of technical measures that he wants to be considered. Today's dialog is supposed to be based on this concept list. The group consists of John, the concierge of the building, two contractors (Pete and Dimitri), two installers (Bastian and Dave), an architect, and Willy (The BIM-consultant). John explains the purpose of the meeting. They need to come to a list of measures to be taken in three scenarios: maintenance for 15, 25, and 40 years. John proposes to base their discussion on his concept list. A discussion between the concierge and Dimitri about social safety and locking a few compartments of that building emerges. After about 20 min John says: 'I propose to direct the discussion to the list.' and the discussion about social safety ends without clear conclusions.

Although, according to John's list the discussion should be about facades, a discussion emerges about whether or not gas connections for cooking need to be maintained. Willy proposes to move back to the list, but is ignored by the rest. John cannot tell what the association's policy is about gas connections and cooking. After 15 min, again the discussion is about social safety and locking systems. Once more, the association's policy about this topic is asked for and John cannot answer that question. The same dynamic arises on the topic of sustainability. Dimitri gets irritated and says 'What's all this about, it's not a game we're playing! You must say something about your policy!'

Afterwards, John told the researcher that he was satisfied about this session, although he realized that a lot of questions remained unanswered. John became aware of his poor knowledge of organizational policy. He (unsuccessfully) tried to get his question answered by asking Phil, Andrew, and Ricardo (Area Management) and by consulting his direct colleagues.

Narrative 2: A narrative about a team meeting

After fruitless attempts to get the questions answered, John and the researcher decided to initiate a team meeting in order to discuss the problems and to try to develop a common framework for SCP. We prepared this meeting by developing a 'conceptual framework of SCP' to base the discussion we intended to stimulate on. Our main target was to emphasize the internal problems we experienced, because we identified several barriers towards efficient work processes within the organization.

The group consists of five project leaders (including John), two draftsmen, Andrew and the researchers. Phil is absent. We meet in the organizations restaurant. The atmosphere is informal and energetic. We promised Phil and Andrew to present a framework for SCP. Although John has specific ideas, he does not seem to get these ideas on paper. The framework is presented on three PowerPoint-slides. John takes the lead in this presentation. He seems confident. People quickly begin to respond and an energetic conversation that flies of in all directions follows. Issues concerning organizing BIM-sessions are discussed. People express their concerns about how tedious these BIM-sessions can be. They question, for example, who to invite, how to activate participants, and how to involve tenants in the process. We agree that this new way of working is a life style and involves new competences, group dynamics, and leadership styles.

Internal issues are discussed as well. The project leaders question the composition and status of budgets. Also, the internal structure and unclear responsibilities within the organization are discussed. Project leaders discuss that a clear vision lacks. Andrew indicates that this vision is described in the starting memos written by the department of are a management and is surprised to find out that the project leaders write their own start documents. 'I will make sure that in the future you don't have to write your own starting memo's any longer. That is just not right.' The meeting ends with the researcher and John promising to conduct a pressure cooker experiment, in which they will try to develop a project to definitive design in only three days. Then suddenly Andrew becomes autocratic and starts distributing tasks and assignments. Nobody responds to this behavior and silently accept all tasks. Then the meeting ends and everybody goes his own way again.

This narrative shows how participants recognized the problems discussed and clearly felt a need to share. Afterwards, a few of John's colleague project leaders told the researcher how fruitful they perceived this meeting to be. As one of the project leaders put it: 'Finally, we talked about what it's really about'. Also, John and the researcher had a good feeling about this meeting and perceived that this might be the beginning of the change process they attempted to initiate. However, no further actions were undertaken to solve the issue of the starting memos.

Narrative 3: A narrative about the pressure cooker experiment

Three months later (the three months included a six-week summer holiday), John and the researcher conducted the pressure cooker experiment. This time John invited only the main contractor and Willy to avoid a tedious BIM-session again. Instead, John arranged pre-meetings with several colleagues to discuss the starting memo for the project that was the central subject of the pressure cooker experiment. John wanted

to make sure that he got the right assignment and requirements this time to avoid the same dynamics with the contractor as happened earlier. According to John, they agreed on developing two feasibility studies, which would be the basis for a new starting memo. John takes the lead in this session.

The session starts at 9.00 AM instead of the intended 8.30AM. The first hour seems to lack structure. The BIM-consultant asks what the purpose of this meeting is. This question remains unanswered. Instead, ceiling renovation costs are discussed.

In between discussion about content, contractors, draftsmen, and John informally discuss their way of working. For example, they discuss the new role of the architect in the supply chain. One of the contractors gives his vision on how Dutch associations should return to their core business: controlling their real estate portfolio in an administrative way and outsourcing all other activities. They have conversations about the future of partnering and the different roles of all co-makers in this process.

After the break, new developments occur. While the draftsman draws something, the contractor calculates costs, and the co-makers literally come closer together. Phil and Andrew visit the meeting to get a sense of the energy. Andrew asks how long the building complex will be exploited after the renovation. Again, confusion about the exploitation period as well as the starting memo arises. Andrew asks if the assignment by area management is clear. But his questions remain unanswered and get overruled by other issues to be discussed.

The remainder of the day participants work on one computer and discuss the future of SCP in general. By the end of the day, John discusses the results with Ricardo of the department of area management. According to John, Ricardo is enthusiastic about the results so far. John says the second day worked out similar to the first day, and according to John participants decided that this was an effective work method.

Evaluating the pressure cooker experiment, John indicated that he was satisfied about working together with the external partners. John did not experience them as passive recipients any longer, but as pro-active. How exactly this dynamic changed is unclear.

However, Ricardo was not satisfied with the results, because he expected something else. According to John he responded laconically and said: 'Well, maybe we are going for another scenario.' Phil and Andrew expressed their disappointment about the results as well. Opposite to Ricardo, they expected the project outcomes to be more defined. John was angry about the situation: 'You can imagine how angry I am'. This narrative showed that John, his management, and area management appeared to differ in expectations regarding the output of the pressure cooker experiment.

§ 3.5 Analysis and discussion

This section aims at getting more insight in the patterns that emerged from the apparent chaotic web of interactions in which John was entangled and how these patterns influence and are influenced by the interactions. The main pattern we will discuss concerns how the participants failed in getting shared understanding of strategic needs and how social factors (leadership and trust) influence and are influenced by this pattern.

Lack of shared understanding of strategic needs

These narratives showed that throughout the entire SCP-process, all participants circled around questions concerning policy, targets, ambitions, and strategy. The first narrative shows that a lack of clear targets caused a tedious BIM-session, not satisfying results of that BIM-session, and an irritated contractor. Between John and his (sub) contractors, a dynamic emerged in which (sub)contractors were waiting for John to tell them his vision on technical measurements, while John was waiting for the (sub) contractors to come with ideas and possibilities about technical measurements. The second narrative showed that when people finally get to talk about these problems, energy arises and people find it fruitful to talk about it. The third narrative showed that, because John, Phil, Andrew and Ricardo could not come to shared understanding of the deliverables, the results of the pressure cooker became useless and disappointed all internal as well as external participants.

Problems with defining targets and activities are not uncommon in the Dutch housing sector. *Overmeeren(2014)* and *Van der Kuij (2014)* indicate that housing associations hardly formulate measurable targets and alignment between strategic needs and operational execution lacks. One of the reasons is that housing associations are hybrid organizations (*de Jonge, 2013*). Hybrid organizations are public organizations that also participate in commercial markets. Prioritizing targets and activities appears to be complex in such organizations and this indistinctness causes difficulties in managing such hybrid organizations (e.g., *Anheier, 2010; Bieleman et al., 2010*).

Kim et al. (2010) point out four development stages of SCP: (1) identifying strategic needs, (2) assessing and selecting a partner, (3) implementing a partnership, and (4) reassessing and reshaping the partnership. Thus, the first stage of developing SCP has not been fully developed yet neither by the internal nor the external partners in our case study. Obviously, this case showed that stakeholders were not able to develop consensus on the targets to be achieved, which was particularly visible in narrative 3.

Still, as the narratives show, John did discuss the expected results with Ricardo, Phil and Andrew, but he discussed that in separate conversations. Apparently, Ricardo, Phil and Andrew never discussed the expected results together. In retrospective, it would have been more logical if Ricardo was more involved in the actual BIM-sessions, to align expectations. After all, he was an important internal principal in this supply chain.

As stated in the introduction, SCP can be either seen as a formal process that can be actively engineered or as an informal and organic development (*Bresnen and Marshall, 2000a; Bresnen and Marshall, 2000b*). The first perspective would fit in a strategic choice paradigm, whereas the latter perspective would fit in the complexity in the complexity thinking. From a strategic choice paradigm, it would be concluded that Andrew, Phil, and/or Ricardo failed in providing a clear policy and because of that John did not have appropriate tools to work with and therefore the SCP remained unsuccessful. From a complexity view however, conclusions are less normative. Reading the narratives, we understand how participants in this process could not come to consensus and the participants would not come to consensus and the participants would be advised to become more aware of the dynamics and through a joint process of trial-and-error and reflection come to a solution that fits all stakeholders.

Leadership

It is argued that 'strategic needs' emerged from an apparent chaotic web of interactions. This section aims at understanding how interactions influence and are influenced by this pattern. In this section we will base our analysis on the topic 'leadership'. Throughout the process John and the researcher experienced this as an important aspect, and leadership is often stressed as a major factor in literature on SCP as well (e.g., *Gruis, 2011; Kim et al., 2010; Wong, 2001*).

To understand how leadership influences the lack shared understanding, first leadership needs to be defined. The wide array of leadership definitions shows three common aspects (*Muijen and Schaveling, 2010*). First, leadership concerns a process between a leader and a subordinate. Second, leadership involves personal characteristics that make a person able to influence and stimulate another person to contribute to meet targets and success. Third, leadership is about an interplay between leaders and followers and not about their formal position. According to *Muijen and Schaveling (2010)* throughout the years, research focus shifted between these aspects.

The complexity theory concentrates on the third aspect. It suggests that it is not the formal position that defines leadership, but the person to whom the power ratio is titled. That raises questions about formal leadership. If, as complexity theory suggests, an organization is formed by local processes of gesture- response rather than by an

overall plan, formal leaders and managers in organizations will have more power than work floor professionals, because they are able to communicate with more individuals. Moreover, they can instruct, persuade or even force others to do what they intend to do (Stacey, 2011). On the other hand, they provide resources and legitimize actions. But also, the individuals that respond to the gestures have power. How individuals respond to the gestures depends on their intentions, knowledge, and understanding of the gestures and situation. If a certain response is accepted by many others, then that individual will gain more power and will be considered a leader.

When analyzing leadership, John's position in the supply chain should be considered. John had three roles. First, John acted as a principal for his (sub)contractors and in this position, he took leadership towards (sub)contractors in, for example, the BIM-sessions. Second, John was a contractor for his 'internal principal' (Ricardo), and therefore Ricardo acted as a leader towards John. Third, John acted as a subordinate for Phil and Andrew. In short, sometimes John acted as a leader, and sometimes John received leadership.

Participants showed various kinds of leadership behavior. After SCP initiation, Andrew and Phil (management) switched from a socially constructive change strategy and facilitating leadership style to a monovocal top-down approach and autocratic leadership style (narrative 2). Phil tried to get involved by providing consultation hours, although not many project leaders made use of that. John complained about how involved Phil and Andrew were in the process. The same could be said about Ricardo. Ricardo was an internal principal for John, but his expectations were not clear (narrative 3). Besides, the frequency of interaction between Ricardo and John was low. From the relationship between John and the (sub)contractors we already indicated that John failed in providing (a discussion about) shared understanding of strategic needs. Also, John felt incompetent when it came to lead group dynamics. He seemed unable to discuss the problem of the lack shared understanding of strategic needs. That resulted in tedious BIM-sessions (narrative 1), complaining (sub)contractors (narrative 1), and unclear expectations of the results of the pressure cooker (narrative 3).

Overlooking the narratives, we could not identify a person – neither a natural, nor an 'official' leader – with more knowledge and understanding than others to whom the power ratio was titled. Instead, we saw all participants circling around questions of strategy, ambitions, plans, etc. We did see however, that Andrew and Ricardo both enabled and constrained John in his attempt of developing a fruitful process of SCP. On the one hand, Andrew provided the strategy of SCP, BIM software, preferred partners, and a room to meet that legitimized John to organize the BIM-sessions. Also, Andrew impeded John, by not being explicit about his expectations and preferred internal procedures.

To understand how leadership is influenced by lack of shared understanding of strategic needs, we analyzed the issue of John not feeling competent when it came to leading group dynamics throughout the BIM-sessions. Narrative 1 showed that because John was unable to answer the (sub)contractor's questions (narrative 1), a certain group dynamic arose. John also lacked skills to analyze the group dynamics and discuss the analysis with the participants. He was not able to intervene properly and make the BIM-session less tedious.

It is no surprise that demands for usable knowledge will change as the task changes (*Schön, 1983*). John's task clearly changed when it comes to leading BIM-sessions. In the traditional way of inviting tenders, John developed projects in a technical manner. He determined the technical measures, and wrote specifications needed to invite tenders. He mostly communicated one-on-one with his (sub)contractors. In the new situation, John was confronted with group dynamics. He clearly had not developed competences in that domain yet.

The introduction of SCP and performing, for example, BIM-sessions made John more aware of his shortcomings and lack of knowledge. He tried to find a way through all kind of unique situations that have all the same features: complexity, uncertainty, instability, uniqueness, and value conflict. *Schön (1983)* and *Stacey (2011)* both suggest that it is not only analytical techniques that are required to work under these turbulent conditions. In this case, according to *Schön (1983)* and *Stacey (2011)* learning skills about leading group dynamics would not be sufficient.

Schön (1983) argues that, instead of grounding professional skills in very specific scientific knowledge, problem solving in day-to-day practice utilizes 'more rule-of-thumb local regulations and rules'. It is not specialized, firmly bounded, scientific, nor standardized. It requires a new way of learning, which *Schön (1983)* calls reflection-in-action. Narrative 3 showed this behavior of reflection-in-action, when John and the (sub)contractors began discussing the new roles and responsibilities of the participants in SCP. Similarly, narrative 2 showed reflection-in-action about the internal leadership, processes and responsibilities. Unfortunately, this discussion appeared to be unique, and not continuously.

Trust

Previous sections showed how complex interactions influenced and were influenced by confusion about leadership. All these interactions eventually led to a situation in which the (sub)contractors and John delivered results from a pressure cooker experiment, however the results were not accepted by Ricardo, Phil, and Andrew. Although the readers of the narratives know that it was unintentionally, the (sub)contractors

perceived that John was abusing their efforts, because involving (sub)contractors in the early phases of the process demands extra unpaid efforts by the (sub)contractors.

John realized that this affected his trustworthiness towards the (sub)contractors, but he was unable to change these dynamics, because John was dependent on others. Besides, in reflection John concluded that he did not have enough knowledge about group dynamics. In short, this process affected the level of mutual trust in several ways. Trust is a complex notion. This section aims at using examples of our case study to show how trust manifested in local interactions in different ways, between internal as well as external participants.

Many scholars indicate trust as a linking pin for divergent areas, such as leadership, communication, and organizational change (*Fulmer and Gelfland, 2012; Gruis, 2011; Kadefors, 2004; Kim et al., 2010; Wong et al., 2007*). Trust can be linked to micro-level (such as effort and performance or leadership effectiveness) as well as to macro-level (such as strategic alliances) (*Fulmer and Gelfland, 2012*). Moreover, within each level different referents of trust can be distinguished (such as leaders, teams or organizations) (*Fulmer and Gelfland, 2012*). Besides, trust knows multiple antecedents and consequences. All aspects seem interrelated. That makes it difficult for scholars to identify who trusts whom (or what) at which aggregation and how it is developed (and please note that for professionals at work floor level, it seems to be even more difficult to get a grip on the notion of trust, since it is not their daily practice to analyze such abstract notions). While the pre-assessments showed that most project leaders consider trust to be the 'lubricant' of relationships. Thus, it is a living concept among project leaders in this organization.

Despite its complexity, an often-used definition of trust is 'the willingness of a party to be vulnerable to the actions of another party based on the expectations that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party.' (*Mayer et al., 1995*). This definition includes two dimensions of trust, which are (1) positive expectations of trustworthiness and (2) willingness to accept vulnerability. Another distinction made on trust is the (1) ability (or domain-specific competence of a trustor), (2) benevolence (or the conviction that the trustee would do good to the trustor) and (3) integrity (or that the trustee adheres to a set of principles that the trustor finds acceptable).

Based on general literature on trust, *Wong et al. (2007)* has developed a trust framework specifically applicable for construction contracting. This framework distinguishes three types of trust. Interpersonal trust refers to trust between people and or institutional trust refers to trust in the functioning of organizational, institutional, and social systems (*McAllister, 1995; Wong et al., 2007*). Concerning interpersonal trust affect-based trust

and cognition-based trust are distinguished (McAllister, 1995; Wong et al., 2007). The narratives showed examples of trust on all three levels.

First, the pattern of not coming to shared understanding of strategic needs refers to system-based trust. More specifically Wong et al. (2007) distinguishes three features of system-based trust: (1) organizational policy (specifies priorities and explains business procedures), (2) communication systems (defines the channels for interactions of an organization), and (3) contracts and agreements (defines relationships and obligations between individuals). The narratives showed that the housing policy of the association is unclear (feature1). Besides, it was unclear who was responsible for providing the policy. It could either be area management or the management, but in daily work practice it appeared that the project leaders write their own start documents (feature2). Therefore, the official status of the start documents was unclear (feature3).

Second, cognition-based trust, which is grounded in individual beliefs about peer reliability and dependability and it highly depends on competence and responsibility (McAllister, 1995). Because John had no clear understanding of what people expected from him, regardless of who's 'fault' that was, he could not meet the expectations. The (sub)contractors, Ricardo, Phil, and Andrew constantly kept signaling others' dysfunction. John, for example, constantly kept receiving negative feedback on his results. In short, in this case unclear mutual expectations about results seem to lead to decrease of mutual cognition-based trust.

Third, the narratives showed examples of affect-based trust. Affect-based trust concerns emotional bonds between individuals (McAllister, 1995) and is affected by the frequency of interaction. McAllister (1995) and Bijlsma-Frankema and Costa (2005) both point out that if actors trust each other, they seek interaction with them, while distrust creates discord. In between BIM-sessions, there was hardly any communication between John and his (sub)contractors. Also, according to John, the frequency of communication between John and his management was insufficient, while according to Bijlsma-Frankema and Costa (2005) interaction is needed to build trust.

§ 3.6 Conclusions

The target of this study was to get more understanding of work floor experiences of professionals in the CI who are confronted with SCP-principles. We expected that describing and analyzing work floor experiences would increase insight in what exactly

SCP entails in practice. Our study showed that, in this context, the lack of reaching shared understanding towards strategic needs was a barrier for fruitful SCP. Theories about trust and leadership showed that the social aspects influence and are influenced by the pattern of participants being unable to come to shared understanding of strategic needs, and that they are mutually interwoven.

Lack of shared understanding has shown to be a serious barrier in the development towards SCP and leadership is important to overcome that barrier. The narratives showed examples of how formal leaders enabled and constrained people at the work floor to develop to SCP. The narratives also showed that it is not clear who formally was responsible for providing the strategic needs. Also, no person was found to whom the power ratio is entitled. Besides, the narratives showed that this problem is not identified, nor discussed. The example of 'leading groups and group dynamic' shows a way of how reflection-in-action could support finding new ways of leadership in new situations. And, without claiming to be comprehensive, the narratives also show the role of different types of (lack of) trust between different individuals at different aggregations at the work floor as well as leadership, the issue of trust was not discussed with each other which also hampered the implementation of SCP

Our findings do not imply that the implementation of SCP is a result of chance. It is a result of local interactions by people with their own intentions. In their daily work practice people constantly negotiate with each other. The result is a consensus, or compromise, of all these local interactions. Our findings do stress the importance of explicit (managerial) attention for processes of sense making at work floor level, by stimulating shared visions on strategic needs and promoting leadership and trust within the work floor, thus confirming *Bresnen and Marshall's (2000b)* plea that implementing partnering also requires an understanding of the likely impact on individual's and group's motivation and interests. And, although we did not focus on prescriptive tools, such as contracts or total quality management, we do not deny these tools can help professionals in developing fruitful SCP. Rather, our results indicate that none of these tools should be considered as quick fixes that guarantee success. Development and application of such tools should go hand in hand with an honest description and reflection of actual work floor experiences. Therefore, for improvement of the situation, work floor professionals would benefit from developing skills in analyzing and discussing work floor experiences.

Finally, it should be noted that work floor experiences may vary from one project to another. The knowledge that this research provides is value-based, because the identified practical problems depend on their historical, social, cultural, and political context. This study contributes insights into how SCP principles can be dealt with at

work floor level. This suggests that further awareness of the link between different levels of analysis is needed to develop an understanding for such practices.

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