

# UNDERSTANDING SUPPLY CHAIN INTEGRATION AS RECOUPLING

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The Danish construction industry commonly addresses supply chain issues at the project level by focusing on practical problems on site. In consequence, the industry dedicates considerable resources on fighting day-to-day issues instead of embracing a more cross-organizational approach of Construction Supply Chain Management (CSCM). In this paper, we examine the attempts of one of Scandinavia's major contractor groups to achieve CSCM integration and align cross-organizational practices of the supply chain. We present a case study of two subsidiaries in the group using data from observations, surveys and interviews. Drawing on Neo-institutional theory with emphasis on the concepts of coupling and decoupling, we examine the interplay between institutional pressure and organizational responses. In our discussion, we argue that the coordination of the supply chain is decoupled from the strategic level through its constricted focus on the performance of specific projects. We then go on to illustrate how the company's efforts centre on assuming a role as CSCM integrator by involving key stakeholders of the supply chain to recouple weak links between decision-making and organizational practices. In conclusion, we argue that the company attempts to achieve CSCM integration by generating market-legitimacy. However, the constant creation of new project organizations, the existence of decentralized supply networks as well as informal authority of project managers to select or deselect procurement policies leads to various types of organizational decoupling. Accordingly, there exists a competing environment of conflicting demands and divergent incentive structures, which is an on-going challenge for the necessary alignment of cross-organizational CSCM integration.

Keywords: CSCM, decoupling, recoupling, productivity and institutional theory

## INTRODUCTION

The project-based and fragmented construction industry has frequently been a target of instrumental reform initiatives based on the practices of other more integrated industries (cf. Fernie *et al.*, 2006). Since the 1980s, several initiatives have been launched to mature supply chain relations, focusing on e.g. risk sharing, cost transparency, common objectives, strong communication as well as strategic alliance across different projects (Vrijhoef and Koskela 2000). All these elements are indicators of a high level of Construction Supply Chain Management (CSCM) maturity and trust in the supply chain and are believed to positively affect the

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performance of complex construction projects (Meng *et al.*, 2011). Thunberg and Fredriksson (2018) for example suggest that CSCM can increase productivity by addressing supply chain-related problems as distrust, lack of information, poor site logistics, and supplier and subcontractor exclusion in the planning process. Indeed, several studies indicate that these interlinked problems affect the construction process negatively by causing delays, quality issues and cost overruns (Vrijhoef and Koskela 2000; Fredslund and Gottlieb 2018). This is important, as suppliers and subcontractors commonly undertake 60-80% of the work undertaken on construction projects (Ekeskär and Rudberg 2016) accounting for approximately 80-90% of the costs (Karim *et al.*, 2006).

However, the impact of CSCM on productivity has been difficult to ascertain. In no small way, this is due to the peculiarities of the industry, which "faces wide fluctuating demand cycles, project-specific product demands, uncertain production conditions and has to combine a diverse range of specialist skills within geographically dispersed short-term project environments" (Dainty *et al.*, 2001: 163). Instead of reaping the benefits of cross-organizational collaboration, construction supply chain efforts have mainly focused on hands-on problems and firefighting at the project level (Thunberg and Fredriksson 2018). Dainty *et al.*, (2001) emphasize substantial contradictions between CSCM policies and their enactment at the project level, highlighting the need for alternatives to release the important potential of interplays between central and local purchasing functions within project-based organizations. Briscoe and Dainty (2005) even go so far as to suggest that the construction industry may never grasp the full potential of CSCM integration.

In the literature on organizational institutionalism, society is believed to be characterized by the existence of rationalizations about what creates a prosperous organization, which are often followed for reasons of legitimacy rather than efficiency (Meyer and Rowan 1977). In consequence companies may experience dilemmas or conflicts leading to a decoupling of formal policies from daily practices, or an opaque relationship between practices and outcomes. This explains the seemingly paradoxical counterproductive relationship between policies and action that has been observed in previous studies of CSCM (cf. Fredslund and Gottlieb 2018). The aim of this paper is to examine CSCM from a perspective of Neo-institutional theory by drawing on the concepts of 'decoupling' and 'recoupling'. We explore instances of organizational decoupling in a large contracting company and discuss their consequences in relation to the company's efforts to achieve supply chain integration.

We start by describing the theoretical perspective and the methodology of the inquiry. Next, we empirically analyse the context of the company and the context of the primary case organization to understand organizational issues in relation to CSCM integration. Then, we discuss what form of decoupling is implicated and what are the consequences in terms of project productivity and long-term performance of the company. On this basis, we discuss how a major contractor engages in recoupling activities by aligning policies, practices and the intended outcome of the company. Finally, we conclude by discussing how decoupling awareness and recoupling processes are crucial when implementing CSCM in major contracting companies, and the importance of the contractor recognising its focal role as the integrator.

We apply Neo-Institutional Theory (NIT) with emphasis on the concepts of coupling and decoupling in an analysis of integrating CSCM policies into a major contracting company. Hallett (2010) argues that most research on couplings in institutional

organizational research has focussed on how industries, or organizations, are loosely or tightly coupled at a specific point in time. In contrast, we draw on the less used notion of 'recoupling' to describe the "processes through which formal policies and daily activities move from being disconnected to being closely linked" (Bromley and Powell 2012: 11). In doing so, we adopt a more processual and practice-based view on organizational change than has traditionally been the case in NIT studies (Chan 2018).

Originally, institutional theory focused on explaining economic efficiency by rational actions of society. However, this narrow reasoning was not enough in the analysis of social activities evolving the theoretical field to contain features of political science and sociology like rules, culture and behaviour as drivers or pillars of social reality and change (Scott 2014). Hence, a central idea of NIT is the acknowledgement of the existence of institutional pressure that shapes the everyday life of organizations and individuals. In their seminal work, Meyer and Rowan (1977) argued that many formal organizational structures arise as reflections of rationalized institutional rules or 'myths' that exist in society about what creates a prosperous organization.

Rationalized myths are a source of isomorphism, i.e. a part of the institutional pressure that affect organizations and make them become formally similar over time (Boxenbaum and Jonsson 2017). Isomorphism can be divided in three different ideal forms i.e. coercive, mimetic and normative. As such, organizations may be forced to accept certain forms through regulations, or they can imitate others based on success and legitimacy in the market. However, the narrow implications of isomorphism are a simplistic expression of a much more complicated social reality. Organizations may appear similar, yet at the operational level they respond in many different ways regardless of comparable formalities (Fredslund *et al.*, 2019). The reason for these differences is that formal policies are not necessarily integrated into daily practices. Thus, formal policies that organizations are pressurized to adopt to gain legitimacy do not necessarily constitute an effective approach leading to organizations engaging in decoupling by "building gaps between their formal structures and actual work activities" (Meyer and Rowan 1997: 341). Bromley and Powell (2012) identified two distinctive forms of decoupling relative to an ideal organization where formal policy, daily practices and intended outcomes are aligned. The first is the policy-practice decoupling where policies are disconnected from daily practices and the intended outcome may or may not be linked. The second type is the means-ends decoupling where policies are realized in practice, however loosely tied to the intended outcome resulting in little or no relation.

By engaging in decoupling, organizations may gain legitimacy while maintaining operational efficiency. Nevertheless, gaining legitimacy without adapting policies accordingly could critically affect the integrity and long-term performance of the company. Boxenbaum and Jonsson (2017) stress that decoupling is more common among organizations that are subject to a strong pressure from the institutional environment to implement novel policies. As such, decoupling might occur if organizational members distrust the capabilities of the formal policies, or if members do not believe in the effectiveness of the proposed practices within the organization. Organizational members can decide to engage in decoupling activities and often members renounce these activities if it requires them to deviate from their normal professional roles. According to Fiss and Zajac (2004), organizational alliances can mitigate the negative effects of institutional pressure and decoupling through committed actions concerned with establishing "tight couplings where loose couplings

were once in place" (Hallett 2010: 54). Binder (2007) emphasizes, that the recoupling process is a local response to institutional pressures and can be seen as an interface between micro and macro aspects that links organizations to their institutional environment. By its very nature, recoupling occurs at local organizational levels involving the relationship among individuals, the organization and the institutional environment. Hence, scrutinizing recoupling requires data of these relationships to capture the actual dynamics and mechanisms of the social context affecting the organization in enquiry (Hallett 2010).

## **METHODOLOGY**

The paper draws on a two-year study rooted in the strategic procurement department (SP) of the MTH Group, which is one of the Nordic region's leading construction and civil engineering companies consisting of seven independent subsidiaries with approx. 3900 employees. The method applied comprise of (i) interviews with and observations of the top management and other relevant procurement members of the group; and (ii) a case study of two different subsidiaries of the Group (the MT Højgaard organization and the E&P TRUST Partnership organization) to frame a comparative study of organizational variations of CSCM practices. These two subsidiaries were chosen as they have followed different policies for supply chain integration. The MT Højgaard organization is the primary unit of analysis, as SP's efforts to create a comprehensive and participatory process for developing CSCM practices in the entire Group play out in this organization. The secondary unit of analysis is the E&P TRUST Partnership organization. This organization is already developing CSCM practices by addressing issues such as cost transparency, project portfolios, sharing risks and benefits, thus constituting a source of insights into how CSCM can be developed within the Group.

The case study includes a questionnaire survey with 80 respondents quantifying the CSCM maturity level within the Group as well as qualitatively identifying generic or perceived issues related to CSCM integration. The survey was inspired by elements of Meng *et al.*, (2011) four levels of CSCM maturity, i.e. 1. Price competition, 2. Price and quality competition, 3. Project partnerships, and 4. Strategic alliances. The survey also probed the respondents' understanding of current group policies and practices in relation to e.g. procurement process, cost transparency, cooperation, feedback, trust, conflict management, communication, risks and benefits. In other words, the survey investigated existing rationalisations about the institutional context in which the group and the case organizations operate. Furthermore, 30 qualitative interviews concerning decoupling aspects and CSCM integration issues were conducted, targeting the relationship between suppliers, organizational policies and the practices of specific projects. Finally, construction site observations and meeting attendance (e.g. client meetings and construction meetings) have been used to nuance the findings and provide insights into the daily realities of complex building projects. The combined empirical data is used to analyse the CSCM maturity level in the group, and how the case organizations respond to the institutional pressure on increasing productivity through CSCM integration.

## **FINDINGS AND ANALYSIS**

In this section, we first describe the institutional context under which the MTH Group operates. Then, we analyse the procurement process in the MT Højgaard organization to understand how the organization respond to the institutional pressure, and to identify instances of organizational decoupling and their consequences. On this basis,

we discuss how policies, actions and outcomes can be recoupled to developing a cross-organizational CSCM integration in the MT Højgaard organization.

### **The Institutional context of the MTH Group**

The findings from the survey portray an industry operating with CSCM maturity i.e. level 2. Price and quality competitions as basis for its supply chain relationships. The survey moreover showed that diverse perceptions about CSCM maturity is part of the institutional context as the external actors and the project level respondents had a stronger perception on the higher CSCM maturity levels (e.g. level 3. Project partnerships and level 4. Strategic alliances) than the strategic level of the case organizations. The qualitative statements gave evidence to differences between the two case organizations. The E&P Trust Partnership organization was perceived more productive due to its working relationship with equivalent suppliers across projects as the suppliers are more willing to take ownership and share competencies by prospect of future portfolio deliveries. Moreover, the financial transparency of the partnership was argued to create incentives for optimization of product deliveries and logistics, and as often positively affecting the operative performance of projects as well as suppliers' production flow.

Respondents of both case organizations stressed the issue of a lack of supplier involvement from design to project execution. In addition, inexpedient transitions between strategic activities and project performance where different interests (or logics) often collide were stated. Respondents stated that projects with a high degree of alignment between organizational levels would continuously outperform projects characterized by colliding aspects. A frequent argument was that colliding interests between organizational levels result in diverse and random ownership to the supply chain, in conjunction with suppliers not being committed to the projects as they can be deselected regardless of entering framework agreements. In other words, the survey indicated that substantial strategic activities and long-term supplier relations are decoupled at the project level to save costs on specific projects (e.g. by circumventing framework agreements). Another generic finding is that across companies, managers, craftsmen, and suppliers prioritize known and trusted relationships at the individual level over organizational affiliations and formal policies leading to the creation of informal supply networks.

The survey findings indicate a relatively modest CSCM maturity level. However, analysing core components of CSCM (e.g. common objectives, cost transparency, trust, strategic alliances, sharing risks and benefits) reveals a more critical perspective. Thus, a strong focus on unit costs instead of multi criteria (e.g. logistics, supplier capacity and competencies) across many projects negates the total economic and holistic perspectives of CSCM. Nonetheless, close collaboration and problem solving at the project level were identified as common practices, which highlights a stronger orientation on partnerships relations during project execution. Furthermore, respondents acknowledged that the extensive sub-optimization of own project objectives results in the absence of early risk warnings and identifications through the supply chain, which makes procurement practices such as 'just in time' deliveries extremely vulnerable. Moreover, risks are often allocated to the weakest party and there are limited benefits associated to these risks, which arguably counteracts strong cooperation and common objectives in the supply chain. Findings also indicate a high degree of personnel mobility both at the suppliers and at the projects creating low credibility and distrust between actors. Furthermore, limited price and cost

transparency between parties, lack of common understandings, and diverse incentive structures lead to cross-organizational contradictions between the suppliers, the company and the projects. Finally, respondents stressed that the fragmented environment, low earning margins and the constant creation of new project organizations are the main barriers to CSCM integration.

### **The Procurement process in the MT Højgaard organization**

#### *The Strategic Procurement Department*

The Group Procurement Department consists of a Strategic Procurement department (SP) and a Project Procurement department (PP). SP is accountable for approx. 200 framework agreements representing 25% of the MTH Group purchasing volume. The rationale behind the set-up is to coordinate the purchasing volume across the many projects of the Group to obtain lower prices and the best possible contact terms. Furthermore, the setup is intended to enable SP to continuously benchmark price levels across projects, evaluate supplier performance and to assist specific projects in the event of a dispute with a contract supplier. SP works with different categories of suppliers, with each category (e.g. concrete, iron and timber) consisting of typically 3-5 framework agreements with selected suppliers. Thus, a competitive environment is ensured by the option to choose the best price among the 3-5 categorized framework agreements. In some cases, pure price competition will be used, e.g. basic products such as screws or bolts. In other cases, additional evaluation criteria are used to ensure e.g. supplier capacity, cooperation, logistics and total cost perspectives especially in relation to complex products like concrete elements. Thus, the framework agreements are a strategic approach to locking and squeezing overall prices by favourable market positions as well as reducing risks by embracing e.g. regulations of safety, payment terms, deliveries and CSR requirements. Typically, when suppliers enter a framework agreement, they pay a 'loyalty bonus' with a formal rate of 2-6% of their total turnover for their trades with the MT Højgaard organization, which finances SP entirely.

In sum, the interviewees acknowledge the expertise of SP. However, the informants stress that the loyalty bonuses associated to the framework agreements give rise to organizational contradictions by blurring price transparency and by being perceived as a costly element for the production. In addition, the informants claimed to often experience better prices and logistics when bypassing the framework agreements and the embedded bonus. SP is aware of the of these perceived issues and work to align organizational levels by communicating the benefits of the framework agreements as well as over time remove the bonuses completely, which will generate a need to find alternative financing of SP.

#### *The Project Procurement Department*

The Project Procurement Department (PP) is divided into different professional subject areas (e.g. steel, facades, technology, and concrete elements) and supports the tender process of projects by scrutinizing and optimizing offers from the suppliers. Moreover, PP continuously measures project savings and satisfaction in relation to specific tender cases. Thus, the formal justification of PP is the collection and centralisation of specialist knowledge that can be brought into play across parallel projects within the organization. As such, updated knowledge and the accumulation of experience are formally ensured across projects in the MT Højgaard organization. PP is financed through the invoicing of time spent on tendering on specific projects. However, PP experience challenges with getting involved in the tendering, as there is

a tendency to use the production department's own employees for this. While employees in the production department express an acknowledgement of the expert competence of PP and the role PP plays in the tendering process, a policy-practice decoupling however occur due to an expressed missing focus on specific project requirements and needs. The production department stresses that divergent incentive structures and lack of capacity to get involved in specific project processes such as logistics or assembly limit PP's role in the process. In other words, PP are criticised for not securing deals that accommodate the project-specific objectives. As such, the production department prefer to work with well-known suppliers who are selected on basis of past working experience and they do not perceive PP's more generic approach to support these important relations as they focus narrowly on unit prices. The production department, however, finds these specific necessities crucial to realize profit on the individual project. This highlights the importance of maintaining informal supplier-networks from the perspective of the production department. In contrast, PP employees argue that some project managers have turned over the obligation of the tendering task and the procurement activities to PP due to lack of competences or in order to focus their efforts on the practical project execution. Thus, on the one hand, PP argues for a centralization of the procurement function while emphasizing that it has created positive results in relation to tendering tasks, purchasing processes and project performance. On the other hand, project managers' preference has been solely on managing and coordinating project activities.

To summarize, different forms of decoupling characterize the procurement organization, which has resulted in contrasting opinions on whether to centralize or decentralize the purchasing function. An example of a means-end decoupling is when policies (i.e. framework agreements) are integrated into practice but have an adverse effect on project performance and logistics. Another example is a policy-practice decoupling where distrust of formal procurement activities leads to the creation of informal supply-networks at the project-level.

## **DISCUSSION**

Institutional pressures explain why organizations routinely try to adopt policies without the necessary capacity to integrate them into practice (Boxenbaum and Jonsson 2017). This results in policies getting a more ceremonial character within organizations, which is currently the case with CSCM integration in the MT Højgaard organization. We will now discuss what forms of decoupling are implicated in the procurement process of the MT Højgaard organization, and how an awareness of decoupling and recoupling can contribute to create cross-organizational alignment.

The fragmented nature of the construction industry and the constant creation of new project organizations makes it difficult to generate one generic CSCM policy unless it can accommodate these constant changing circumstances. The procurement policies of the MT Højgaard organization are to some extent decoupled from the daily practices of projects, due to the informal authority of project managers to select or deselect procurement policies and suppliers, which they consider appropriate regardless of organizational affiliations. As such, the production department is maintaining decentralized supplier-networks while neglecting organizational policies. The corollary is that the MT Højgaard organization's ability to manage and coordinate the procurement activities within the organization can be questioned. As such, there exists a competing environment of conflicting demands within the organization, which increases the focus on sub-optimization and leads to lack of common understandings.

The empirical findings point out several instances of organizational decoupling the most prominent of which is the policy and practice decoupling, where conflicting interests and diverse incentive structures affect the intended outcome of the MT Højgaard organization. This is due to e.g. divergent perceptions, informal supplier-networks, the bypassing of strategic activities, and a lack of long-term focus at the project level. The MT Højgaard organization have already tried to address these issues with a formal stage-gate model advancing cross-organizational alignment, however without achieving any tangible results. The model can therefore be interpreted as another example of policy-practice decoupling.

The process of decoupling in the MT Højgaard organization has led to inconsistencies between cross-organizational dimensions, which counteract core elements of CSCM, e.g. knowledge sharing, common objectives and understandings. On the one hand, there is a discussion of whether to centralise or decentralise the procurement function. This is what Frödell *et al.*, (2013) describe as two dysfunctional extremes that beneficially should be substituted with a more mediating and less integrated form of procurement process. On the other hand, organizational members also recognise the potentials of the different procurement functions within the organization and supplier competences as ingredients to increase productivity in the supply chain. This speaks for a more aligned and flexible approach for when and how to use different available policies of the organization instead of adhering to a more generic policy.

SP is aware of the forms of decoupling and the potential negative effects hereof for the long-term performances of the company. Thus, SP emphasizes that there are misunderstandings about the impact of the loyalty bonuses and the framework agreements, stressing that middle management is a barrier for a mediating and objective communication throughout the organization leading to misperceptions. Consequently, SP attempts to align organizational levels by reducing bonus levels from 2-6% to 1-2% and simultaneously channelling the bonuses back to the individual project as well as strengthening the organizational communication by creating focused reports about each project's contribution. However, we argue that this initiative reinforces organizational decoupling instead of leading to the development of a more holistic and long-term strategy of CSCM integration that can create the desired involvement of cross-organizational functions and competences of the supply chain.

The question is how the expectations and potentials of CSCM can be translated into the practical settings of the MT Højgaard organization effectively. Thus, moving from a ceremonial character to a practical integration process by local interactions of cross-organizational actors. The MT Højgaard organization has a focal role in that process by connecting external and internal actors through the accomplishment of complex building projects. SP's efforts to recouple the problematic different supply chain processes and the different actor convictions involve reorganising the procurement function, which can be accomplished through local interactions connecting key stakeholders of the supply chain. Hence, a potential recoupling strategy would involve cross-organizational actors directly in the development and integration process of CSCM to ensure commitment and capabilities to better align policies, practices and the intended outcome of complex projects and the company.

## **CONCLUSION**

In this paper, we have introduced reflexions and considerations about the concepts of decoupling and recoupling to shed new light on the potentials and issues of CSCM integration. The study focusses on only one case company. However, the discussions



in the paper can be considered to represent generic issues across construction industries in general. We build the empirical foundation on a multi-method case study of a major contracting group's efforts to achieve CSCM integration to understand how the organization work to actively align its organizational environment. In doing so, we analysed the industry context and organizational settings to identify how decoupling is affecting the procurement function within the MT Højgaard organization. On this basis, we discussed how the MT Højgaard organization could advance CSCM integration by recoupling organizational levels through a participatory process, which addresses the alignment between procurement policies and the practice of cross-organizational actors integrating elements of CSCM, e.g. cost transparency, commend objectives, feedback systems, project portfolios and sharing risks and benefits.

The main contribution of this study is to link the concept of CSCM integration to organizational decoupling and discuss how integration activities can be understood as a process of recoupling, where formal policies, daily activities and intended outcomes become more aligned. We have analysed the procurement function of the MT Højgaard organization to understand the nuances of organizational decoupling and how a potential recoupling process could enable CSCM integration. Furthermore, we have tried to understand how current activities are reflected by rationalizing pressures at the project level, which do not necessarily constitute an effective and long-term solution for the MT Højgaard organization.

For this reason, a recoupling pilot process will take place in a near future in the MT Højgaard organization, which will reveal more insights into the components and nature of a participatory development process in relation to CSCM integration. The process of recoupling is not necessarily a panacea or remedy for all supply chain problems. Nevertheless, it is a novel attempt to gather cross-organizational actors to discuss how CSCM integration can increase productivity through the capabilities of the different supply chain actors. A potential participatory recoupling process will require as a minimum, managerial legitimacy and organizational resources as well as the will to discuss beyond organizational affiliations and boundaries, which is arguably essential for the CSCM integration.

We call for future research to scrutinize empirically how other organizations act on rationalizations in their environment to recouple policies, practice, means, and ends to release the potentials of CSCM integration.

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