



Doctoral Thesis in Business Studies

Adhocracy in the Bureaucracy

Practices of implementing collaborative contracting
in infrastructure client organizations

LILLY ROSANDER

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in infrastructure client organizations

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Abstract

The building of infrastructure is a capital and resource-demanding activity, generally carried out in large interorganizational projects. Most infrastructure clients are public entities, implying that contracting processes are governed by public procurement regulations. Many infrastructure projects have high requirements for sustainability, both regarding impact on the local environment and the climate footprint. In addition to this, the construction often takes place in urban areas. To manage this complexity and uncertainty it has, over the past decades, become more common for public clients to apply procurement strategies that aim at fostering a good collaboration and integrate processes between client and contractor. Despite examples of advantages with such collaborative contracting the results vary and the institutionalization of collaborative contracting practices has proven difficult. Additionally, concepts and models vary between contexts and are hard to compare. How clients develop their procurement strategies and project practices, therefore, merits close attention. When the public sector uses procurement as tools to achieve their strategic goals, it is reasonable to analyze such decisions and processes as cases of policy implementation. Still, however, a large part of existing research on procurement of collaborative contracting focuses on a single project.

By directing focus toward the organization as a whole, and on the implementation process of procurement strategies in several projects over time, the thesis aims to *increase the understanding of how new organizational practices develop at different levels in public project-based organizations*. The empirical foundation of the thesis is a longitudinal case study that follows the implementation of a new procurement strategy in the Swedish Transport Administration over seven years. The material includes data from seven projects that all used a two-stage Early Contractor Involvement model (called High collaboration). The case also includes material from the permanent organization, mainly in the Purchasing department. The five papers in the thesis analyze the implementation process from several perspectives, with specific attention to the characteristics of the organization as both public and

project-based and how these features influence routines, legitimacy, learning and collaboration at different levels. The study adopts a practice perspective where interviews and observations focus on the actions and experiences of the individuals in the study.

The result shows that there is a strong project autonomy, which is reinforced both by the project-based structure and by the public character of the client organization. Subsequently, there are few overarching structures at the central level to develop routines and procurement strategies in collaboration with the projects and suppliers. Thus, project managers have had a great influence on the finalization of project-specific procurement models and experiences has principally been shared between individuals, resulting in large variations between projects and limited organizational learning. Nonetheless, decisions in the permanent organization still influence the conditions at the operational project level, by dedicating resources and focusing attention on the top-management priorities. At the central level, collaborative contracting, as a concept has had varying legitimacy over time, and the initial problems in some of the seven projects gained considerable strategic importance by reinforcing such pendulum movements. Legitimacy seeking at higher organizational levels has also contributed to a variation in concepts and models, further complicating structured learning in the field of collaborative contracting.

The thesis contributes to the construction management literature by providing deeper insights into why procurement models and collaborative practices vary between projects. Furthermore, the results contribute to project studies by expanding the understanding of how the specific character of public project-based client organizations impacts on learning processes for collaborative contracting. Finally, the thesis is relevant for public procurement research, as well as for practitioners in infrastructure and public procurement, since it provides novel insights into how the project-based nature of an organization affects implementation and procurement processes.

Keywords: *Infrastructure, public procurement, project-based organizations, collaborative procurement strategies, policy implementation, practice theory.*

Sammanfattning

En stor andel offentliga medel investeras i underhåll och utveckling av väg och järnväg. Många infrastrukturprojekt byggs idag i tätbebyggda områden och har höga hållbarhetskrav, både gällande inverkan på närmiljön och avseende anläggningens klimatavtryck. Den här typen av projekt är ofta svåra och komplexa att genomföra. För att kunna hantera komplexitet och osäkerhet har det under de senaste 30 åren blivit vanligare att beställare använder sig av upphandlingsmodeller som syftar till att skapa ett gott samarbete och integrera vissa processer mellan beställare och entreprenör. Trots att det finns mycket goda erfarenheter av att använda samverkanskontrakt finns också stora variationer i både resultaten på projektnivå och mellan de definitioner och begrepp som används. De stora variationerna är ett problem eftersom det försvårar lärande och etableringen av gemensamma arbetssätt i sektorn. Att studera hur samverkanskontrakt i infrastrukturprojekt upphandlas, drivs och färdigställs i praktiken är därför viktigt.

När offentliga beställare använder upphandlingsmodeller som verktyg för att uppnå sina verksamhetsmål är det befogat att analysera dem som uttryck för policybeslut. Dock har en stor del av den existerande forskningen om upphandling av samverkanskontrakt endast ett enskilt projekt i fokus. För att öka offentliga beställares möjligheter att förändra arbetssätt och implementera nya upphandlingsmodeller på ett bredare plan är det dock viktigt att undersöka hur förändring av upphandling och arbetssätt sker över tid, i flera projekt och i relation till hur organisationen i fungerar i stort.

Syftet med denna avhandling är att *öka förståelsen för hur nya arbetssätt utvecklas på olika nivåer i offentliga projektbaserade organisationer*. Den empiriska basen är en longitudinell fallstudie som följer implementeringen av en ny samverkansinriktad upphandlingsmodell i Trafikverket under sju år. Materialet innefattar data från sju projekt som alla använt sig av en form av tvåfaskontrakt (upphandlingsmodellen Samverkan Hög), samt en beskrivning av utvecklingen på central nivå, främst hos inköpsavdelningen. Studien analyserar implementeringsprocessen ur flera perspektiv för att förstå hur den

offentliga projektbaserade kontexten påverkar upphandlingsrutiner, legitimitetskrav i organisationen, och det faktiska samarbetet i projekten. Avhandlingen har en praktisknära ansats, där intervjuer och observationer fokuserar på individernas förståelse av organisationen och deras handlingar utifrån situationens förutsättningar.

Resultatet visar att det finns en självständighet hos projekten som förstärks av både den projektbaserade strukturen och av att beställarorganisation är en myndighet. Det leder till att det finns få projektövergripande strukturer på den permanenta organisationsnivån som kan utveckla och erbjuda olika former av stöd i nära samarbete med projekten och i leverantörsdialog på branschnivå. Lärande sker framför allt direkt mellan individer, vilket har resulterat i stora variationer mellan projekt. Samtidigt är de centrala besluten viktiga eftersom de påverkar resursfördelning i projekten och sätter organisationens prioriterade mål. På central nivå har samverkanskontrakt som koncept haft en varierande legitimitet över tid. Initiala problem i några av de sju projekten har fått stor strategisk betydelse och snabba förändringar på policynivå har förstärkt variationer i koncept och modeller som används för samverkanskontrakt i myndigheten.

Avhandlingen bidrar till forskningen inom construction managementområdet genom att förklara varför upphandlingsmodeller och arbetssätt varierar mellan projekt, samt genom att visa hur användningen av samverkanskontrakt utvecklas över tid i flera projekt i en och samma organisation. Vidare bidrar resultaten till projektstudier genom att fördjupa förståelsen för *offentliga* projektbaserade organisationer. Slutligen är avhandlingen relevant för forskning inom offentlig upphandling, men även för praktiker i infrastruktursektorn och offentlig verksamhet, eftersom den ger en ökad förståelse för hur den projektbaserade kontexten påverkar implementerings- och upphandlingsprocesser.

List of appended papers

Paper I

Eriksson, P.-E., Volker, L., Kadefors, A., Lingegård, S., Larsson, J. & **Rosander, L.** (2019). Collaborative procurement strategies for infrastructure projects: a multiple-case study. *Proceedings of the Institution of Civil Engineers - Management, Procurement and Law*, 172, 197-205.

Paper II

Rosander L., Kadefors, A., Eriksson, P-E. Never-ending cycles of collaborative contracting initiatives – dynamics of legitimacy in a public client organization.

Working paper, under review in a project journal.

Paper III

Rosander, L. & Kadefors, A., (2023). Implementing relational contracting in a public client organization: the influence of policy clashes, resources and project autonomy. *Construction Management and Economics*, 41, 651-669.

Paper IV

Rosander, L., (2022). Same same but different: dynamics of a pre-procurement routine and its influence on relational contracting models. *Construction Management and Economics*, 40, 955-972.

Paper V

Rosander L., Kuitert L., Tensions between Values, Autonomy, and Actors in project-based organizing - Can procurement in the public infrastructure sector be strategic?

Working paper, submitted to a public administration journal

List of selected additional publications (not appended)

Hedborg, S. & **Rosander**, L., 2024. Self-organizing in urban development: developers coordinating between construction projects. *Construction Management and Economics*, 42, 114-128.

Kadefors, A., Aaltonen, K., Gottlieb, S., Klakegg, O. J., Lahdenperä, P., Olsson, N. O-E. **Rosander**, L., Thuesen, C., (forthcoming). Relational contracting in Nordic construction - A comparative longitudinal account of institutional field developments, *International Journal of Managing Projects in Business*, (ahead of print).

Rosander, L., Kadefors, A., & Eriksson, P.-E. (2020). Implementering av samverkansentreprenader med tidig entreprenörsmedverkan i Trafikverket: Erfarenheter från sju projekt. Stockholm: KTH

Rosander, L., Kadefors, A., & Eriksson, P.-E. (2024). Samverkan i infrastrukturprojekt – Erfarenheter av tvåfaskkontrakt i Trafikverket 2015–2023. Stockholm: KTH

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Well, now you have read my very emotional acknowledgements and you may continue to read the formal and nonpersonal thesis about implementing new procurement strategies in public infrastructure.

Lilly, 2024-04-26

Table of contents

1	<i>Introduction</i>	1
1.1	Setting the stage: public procurement of infrastructure	1
1.2	Research focus	3
1.3	Aim and research questions	5
1.4	Outline of the text	6
2	<i>Collaborative procurement strategies in the infrastructure sector</i>	7
2.1	Contracting practices in construction	7
2.2	Forms of collaborative procurement strategies	8
2.3	Public clients and collaborative procurement strategies	11
2.4	The implementation contexts of collaborative procurement strategies	13
3	<i>Theoretical framework</i>	17
3.1	An underlying practice perspective	17
3.2	Project-based organizing	19
3.3	Public organizing	23
4	<i>Methodology and methods</i>	27
4.1	Overall research design	27
4.2	The empirical case – A new collaborative procurement strategy in the Swedish Transport Administration	29
4.3	The collection of empirical material	33
4.4	Analyzing the empirical material	39
4.5	Reflections on research quality and limitations	43
5	<i>Summary of appended papers</i>	47
5.1	Paper I: Collaborative procurement strategies for infrastructure projects: a multiple-case study	48
5.2	Paper II: Never-ending cycles of collaborative contracting initiatives – dynamics of legitimacy in a public client organization	50
5.3	Paper III: Implementing relational contracting in a public client organization: the influence of policy clashes, resources, and project autonomy.	52

5.4	Paper IV: Same same but different: dynamics of a pre-procurement routine and its influence on relational contracting models _____	54
5.5	Paper V: Tensions between Values, Autonomy, and Actors in project-based organizing - Can procurement in the public infrastructure sector be strategic? ____	56
6	<i>Discussion</i> _____	59
6.1	The implementation of a new collaborative procurement strategy _____	59
6.2	The influence of structural and cultural project autonomy _____	66
6.3	Legitimacy and conflicting values in political organizations _____	68
7	<i>Conclusions</i> _____	71
7.1	Contribution to research _____	72
7.2	Managerial implications _____	74
7.3	Avenues for further research _____	75
	<i>References</i> _____	77

1 Introduction

This chapter gives an introduction to the empirical context, research aim, and questions.

1.1 Setting the stage: public procurement of infrastructure

The building of infrastructure is a capital and resource-demanding activity, generally carried out in large interorganizational projects. Most infrastructure clients are public entities, implying that contracting processes are governed by public procurement regulations. In many OECD countries, including Sweden, public spending on infrastructure reaches almost one percent of the gross domestic product (GDP) (OECD, 2023). With such a large share of public resources dedicated to the construction and maintenance of infrastructure, the procurement practices of public infrastructure projects merit close inquiry (Brunet and Jobidon, 2024).

In light of societal challenges, such as urbanization and sustainable development, the size and complexity of infrastructure projects increase (Glass *et al.*, 2022). In practice, this means that the projects are carried out in dense urban areas, with high demands on sustainable constructions and minimal impact on the surroundings. Additionally, many public clients face the challenges of decreasing financial resources. One proposed solution to manage the increased complexity and high demands on sustainability, with fewer resources, has been to collaborate more closely with contracting parties to improve efficiency and enable more flexibility (Leendertse and Arts, 2020, Hartmann *et al.*, 2014, Bresnen and Marshall, 2010). Even though various forms of collaborative procurement strategies have been applied by infrastructure clients worldwide over the last decades (Lahdenperä, 2012, Walker and Lloyd-Walker, 2015, Mosey, 2019), institutionalization of collaborative contracting practices has proven difficult (Davies *et al.*, 2019, Engebø *et al.*, 2020, Bresnen and Lennie, 2023, Kadefors *et al.*, forthcoming). As such, there is a need for clients to foster long-term contracting competencies to manage the challenges of a changing construction sector.

Recent contributions to the field of public management emphasize that the organizing of procurement activities influences the alignment between top-level policy goals and their application in the procurement processes (Döhler, 2020, Plantinga *et al.*, 2020a). For example, Glas *et al.* (2017) show that when procurement processes are centralized within the organization, policy goals have greater influence on the actual procurement, compared to when procurement processes are decentralized to operational departments. On the other hand, in decentralized departments there is stronger focus on the individual requirements of specific operations procured.

Traditionally, public organizations have been seen as 'bureaucracies' with strict hierarchies suitable for regulated activities and defined processes (Weber, 1947, Alvesson and Thompson, 2006). However, much of the public work today is carried out in other types of organizational structures (Clegg, 2012). Bureaucracy is often contrasted with approaches that allow more decentralized decision-making, based on flexible processes, defined as 'adhocracies' (Mintzberg, 1979). Adhocracies are generally projects, or other temporary more agile organizations, intended to carry out innovative operations or one-off production (Birkinshaw and Ridderstråle, 2015, Gemünden *et al.*, 2018). In effect, most construction clients, private or public, can be described as *project-based organizations*, defined as those organizations that rely on projects for their main value creation, with decision-making models that make it possible to swiftly meet changing operational needs (Hobday, 2000, Lindkvist, 2004, Söderlund, 2023). Project-based client organizations typically have a smaller permanent organization, with centralized functions, and larger operational levels where the client organization carries out projects together with other organizations (e.g., consultants and contractors).

Public organizations, including public infrastructure clients, are characterized by competing values (Brunsson, 2002). For example, for a public client to be transparent, the procurement must follow strict regulations, which in turn can make the processes long and bureaucratic and inhibit efficiency (Schapper *et al.*, 2006). Because of these value conflicts, individuals involved in procurement processes at the project level are faced with policy clashes that create

ambiguities and reduce explicitness (Kuitert *et al.*, 2019). In general, processes of going from policy to practice in the public sector are rarely straightforward, and policy implementation is built by the actual practices of many individuals with different roles in different parts of an organization (Hupe and Hill, 2016). In their studies on (public) project-based clients, Hartmann *et al.* (2010), Davies *et al.* (2018) and Plantinga *et al.* (2020b) all illustrate how transformation processes of procurement practices face tensions and internal discontinuities in learning and value alignment, stemming from conflicting values in public organizations.

In sum, many of the large project-based clients in the infrastructure sector are also public organizations with value dilemmas and wider societal responsibilities, which ultimately influences their procurement practices (Kuitert, 2023). As such, this thesis focuses attention on the public infrastructure client, and on how new procurement practices and policies develop within *public* project-based organizations (Mahura and Birollo, 2021). The empirical basis of the thesis is a single longitudinal case study on the implementation process of a collaborative procurement strategy in the Swedish Transport Administration; the largest client in the Swedish infrastructure sector.

1.2 Research focus

As initiators of construction projects, clients are attributed a central role in two ways: First, client organizations are viewed as actors with the capacity to stimulate change in the whole sector by requiring specific deliveries (e.g., climate requirements), thus spurring the supply side to develop their competences (Boyd and Chinyio, 2006, Lenderink *et al.*, 2022). Second, it is assumed that construction clients are central in shaping the relationships between the client and the contractor in the projects, by selecting organizational and contractual governance structures, operationalized in their procurement and delivery models (Volker and Hoezen, 2017).

Client organizations that procure projects frequently should have the possibility to develop internal procurement practices over time (Brady and Davies, 2004).

Yet, paradoxically, how to design, govern, and institutionalize successful innovative delivery models, and collaborative contracting in particular, is far from straightforward and has proven to be a great challenge for many client and owner organizations (Davies *et al.*, 2019, Engebø *et al.*, 2020, Bresnen and Lennie, 2023, Kadefors *et al.*, forthcoming). The applied collaborative procurement strategies vary, and their results are often unpredictable (Manley and Chen, 2016). Such large variations in collaborative contracting arrangements and their outcome create confusion and decrease the possibility to compare and develop models between contexts (Walker and Lloyd-Walker, 2015).

Developing and implementing new practices is a challenge for project-based organizations in general (Bresnen *et al.*, 2005, Bygballe *et al.*, 2021). Furthermore, project-based sectors, such as construction, have strong professional roles and the institutionalized learning structures build on the social interaction of individuals at the project level (Grabher, 2004, Willems *et al.*, 2020). In effect, there is a growing understanding of the complexity of developing practices and how the institutional context matters for change (Engwall, 2003, Holti, 2011, Söderlund and Sydow, 2019). For example, Bygballe and Swärd (2019) show how emerging project routines influence collaboration, Ruijter *et al.* (2020) increase the knowledge on how practices of building trust between parties are developed and Matinheikki *et al.* (2019) illustrate how hybrid institutional logics are built in projects with collaborative procurement strategies. While these studies contribute valuable knowledge of how the institutional context impacts practices at the project level, they do not include how the organizational context shapes the long-term development over the course of many projects (cf. Brady and Davies, 2004). Thus, if we want to grasp how processes, routines, and practices develop within large client organizations, the complexity and heterogeneity of those organizations must be taken into account (Bresnen and Marshall, 2000). This implies, for example, that practices and processes both in the permanent organization and at the project level, and their interaction, need to be acknowledged.

Furthermore, it seems that initiatives for novel procurement strategies are repeatedly introduced and discarded within many client organizations (cf. Plantinga *et al.*, 2020b). To understand the phenomenon of re-occurring initiatives to implement ‘new’ collaborative procurement strategies, as well as the lack of more wide-spread sector-level practices (cf. Walker and Lloyd-Walker, 2015), these initiatives must be followed over time. This implies that research on developments of procurement practices benefits from taking a processual perspective, meaning that the research focuses attention on “*how and why things emerge, develop, grow, or terminate over time*” (Langley *et al.*, 2013 p.1). For project settings, this includes studying activities in multiple projects as well as within the permanent organization (Bakker *et al.*, 2016, Brunet *et al.*, 2021).

1.3 Aim and research questions

In this thesis, the overarching query is how public client organizations reconcile their traditions of bureaucracy with the project-based structures and how this tension affects policy development and implementation in the field of infrastructure procurement. Against this backdrop, the aim of the thesis is to *increase the understanding of how new organizational practices develop at different levels in public project-based organizations*. To realize this objective, three research questions have been formulated to direct the foci of the study. The first research question reads:

1. *How does the implementation of a new collaborative procurement strategy in a public project-based client organization develop over time?*

Project-based organizations are characterized by high project autonomy and strong professional roles. Furthermore, how to develop and implement new practices in many projects over time is a common challenge in many project-based organizations. The second research question therefore reads:

2. *How are the implementation processes influenced by the project-based structure of the client organization?*

Furthermore, acknowledging the characteristics of large infrastructure clients as not only project-based but also *public* organizations with bureaucratic traditions, can shed a new light on their internal dynamics and the prospects of such public clients to drive change in the infrastructure sector. Individuals active in the procurement processes at both central and project levels face difficult challenges in coping with competing and changing legitimacy demands, interests, and values. The third research question therefore reads:

3. *How are the implementation processes influenced by the public character of the client organization?*

The study investigates the implementation of a new collaborative procurement strategy from a practice perspective (Giddens, 1984, Sydow and Windeler, 2020) and include experiences and actions at both project level and in the permanent organization, over a period of seven years.

1.4 Outline of the text

The thesis comprises seven chapters and five appended scientific papers. This introductory chapter has provided a background to the research and empirical contexts in which the thesis is positioned. The second chapter will introduce the literature on collaborative contracting in greater detail, aiming to give an overview of how and why collaborative contracting is applied within the infrastructure sector, practical implementation issues, the diversity associated with collaborative contracting, as well as the role of the client in setting the conditions for interorganizational collaboration. Thereafter, the third chapter introduces the overarching theoretical framework, serving as a basis for the discussion of the five appended papers. Chapter four contains the thesis research method and methodology as well as a discussion on the research limitations. The fifth chapter provides a summary of the appended papers, before the accumulated findings are discussed in chapter six. The final chapter concludes the thesis and provides possible avenues for further research.

2 Collaborative procurement strategies in the infrastructure sector

To understand the empirical case in its context, this chapter serves to give the reader a background to the phenomenon of collaborative procurement strategies and the role of public clients in the infrastructure sector.

2.1 Contracting practices in construction

The construction sector is one of the oldest project-based industries (Davies, 2017). To involve the competences needed to complete the project, the construction client buys services from one or many contracting parties over the course of the project life cycle (Eccles, 1981, Lundin and Söderholm, 1995). These external parties include technical consultants, architects, and contractors, who in turn may engage additional subcontractors. How the contractors and consultants are selected, and how the contracts between client and supplier are designed, i.e., the procurement strategy, are important aspects of the project governance (Eriksson and Laan, 2007).

Traditionally, contracts in the construction industry are based on the idea of transactional contract relationships in the form of design-bid-build (DBB) contracts. This implies that the client provides the design for the construction and the contractor is chosen through competitive tendering, often on a lowest-price basis. However, since the 1980s, the building and infrastructure industries have seen a change in the understanding of the client-supplier relationship, moving from a traditional transactional approach to increasingly adopting a wider range of contracting forms, selected based on the project characteristics (Shenhar, 2001, Eriksson, 2010). For example, if the contractor has greater knowledge of the design process, or can provide innovative solutions, other contract types such as design-build (DB) have emerged, where the contractor is responsible for design as well as production. Additionally, clients have recognized that many complex and uncertain projects require delivery models that allow for, and encourage, increased interorganizational collaboration between parties (Walker and Lloyd-Walker, 2015, Davies *et al.*, 2019).

The belief in collaborative procurement strategies is, in general, supported by either of two main arguments. Firstly, based on the common criticism of the construction sector for being inefficient, influence from other industries have resulted in suggestions to increase productivity by integrating the production and design phases, see for example Latham (1994) and (Mosey, 2009). Thereby the contractors are engaged earlier in the project's lifecycle. Secondly, large infrastructure projects are often associated with high levels of complexity and uncertainty, and difficult to manage through traditional contracts, as it is not always possible to describe the needs beforehand (Eriksson, 2010). Choosing a contract and reward system to allow for closer collaboration between parties can then be a way to make the governance models more flexible, to handle uncertainties in the project.

Based on these arguments, collaborative procurement strategies have been a solution ascribed to many of the traditional problems associated with construction projects (conflicts, inefficiency, and cost overruns). Consequently, collaborative procurement strategies have been increasingly applied by construction clients over the last decades (Walker and Lloyd-Walker, 2015, Mosey, 2019, Brunet and Jobidon, 2024).

2.2 Forms of collaborative procurement strategies

In general, collaborative procurement strategies in the construction sector imply that projects combine reward systems and financial incentives designed to promote collaboration, procurement criteria that favor quality, some form of risk sharing between client and contracting parties, formalized relationship management (comprising collaborative activities and joint processes in the projects), joint goals, as well as an aim to integrate design and production (Nyström, 2005, Eriksson, 2010, Lahdenperä, 2012, Walker and Lloyd-Walker, 2015, Mosey, 2019). There are a number of different conceptual labels applied in literature to describe such procurement strategies. Some examples are *Collaborative procurement strategies* (Eriksson and Westerberg, 2011), *Partnering* (Bresnen and Marshall, 2000), *Collaborative contracting* (Banaszak et al., 2020), *Relationship-based project delivery* (Engebø et al., 2020), *Collaborative procurement* (Gerber and Misko, 2019) *Collaborative*

Construction Procurement (Mosey, 2019), and *Collaborative Project Procurement Arrangements* (Walker and Lloyd-Walker, 2015), to name a few. To further increase the conceptual confusion, collaborative procurement strategies are sometimes referred to as innovative procurement strategies or innovative procurement and delivery models (Davies *et al.*, 2019).

These different concepts in turn include a variety of more or less specified models of collaborative contracting. The specific models have developed in different locations and often spread to other countries (Lahdenperä, 2012). For example, *Early Contractor Involvement* (ECI), is a term that both refers generally to the inclusion of contractor-competencies earlier in the project, as well as a to specific procurement strategy based on a two-stage open-book contract from the UK (Mosey, 2019). Other important concepts are *alliance* and *Integrated Project Delivery* (IPD). Originating from offshore construction (Barlow, 2000), alliancing has later become more common in the infrastructure sector, for example in Australia (Walker and Lloyd-Walker, 2016), and Finland (Aaltonen and Turkulainen, 2022). Integrated project delivery has developed more recently in the US and has been used for complex buildings with integrated systems, for example hospitals (Hall and Scott, 2019).

There are many similarities and overlaps between the concepts, yet some differences are rather acknowledged, foremost concerning how responsibilities and risks are divided between parties. In contrast to alliancing and IPD, the early engagement of the contractor in ECI projects is based on more traditional bilateral arrangements, each involving two parties. According to the Alliance Contracting guidelines of the Australian Government (2015), alliancing (similar to IPD) is based on a contract in which the engaged parties, usually contractors, consultants (non-owner partners, NOPS) and the client (owner), share risk and together form a mutual legal unit (Lahdenperä, 2012, Rahmani *et al.*, 2018, Hall and Scott, 2019). Decision-making in alliancing projects is therefore a collective responsibility of the project team (Walker and Lloyd-Walker, 2016). As such, in a comparative study between ECI and alliancing in Australia, Rahmani *et al.* (2018) found that in projects applying an ECI model, clients sought more

control over the project lifecycle and they were also more contractually orientated than in alliancing projects.

For the case in this thesis, the collaborative procurement strategy is a form of early contractor involvement (ECI) model as applied in the UK. This means that the client establishes a contract with a contractor for a first stage to develop the design and an associated target cost. If a target cost is agreed upon, the contractor is then re-engaged for a second stage of production (Mosey, 2019).

However, the concept of ECI has been used to describe other forms of early engagement of contractors, for example competitive dialogue in the public procurement processes (Lenferink *et al.*, 2012) or conventional Design Build contracts (Wondimu *et al.*, 2018). Similarly, the term partnering has been used to describe different forms of collaborative arrangements, from long-term partnerships to single project activities (Nyström, 2005, Børve *et al.*, 2017). Furthermore, what is included in these concepts can change with time (Kadefors *et al.*, forthcoming). This has, for example, been the case with integrated project delivery in the US (Hall and Scott, 2019) or partnering (Bygballe *et al.*, 2010).

In summary, the research on collaborative procurement strategies in the construction sector is vast, and the terminology used to describe procurement and delivery models that aim to increase collaboration and integration in client-contractor relationships is highly ambiguous. The terms applied, and the activities and characteristic associated with a certain concept change over time and vary with location (Børve *et al.*, 2017, Kadefors *et al.*, forthcoming). This thesis does not aim to provide a comprehensive overview of the various concepts and their different meanings, rather this overview illustrates and emphasizes the lack of wider agreement to support learning and sharing of experiences. This phenomenon is similar to other management innovations, where the possibility to adapt a concept to different settings increases the likelihood of the innovation to be broadly implemented (Birkinshaw *et al.*, 2008).

In this thesis, the terms collaborative procurement strategies, collaborative contracting, and collaborative contracting models, are all used to describe the combined arrangements of contract form, procurement criteria, reward system, and the subsequent enactment of the strategy.¹

2.3 Public clients and collaborative procurement strategies

Construction clients range from clients that build very seldom (e.g., a company building a new factory), to ‘professional’, or ‘repeat’ clients that regularly initiate construction projects. These can be, for example, private or public housing companies or infrastructure clients. Many large infrastructure clients are public authorities, e.g., National Highways (formerly Highways Agency) in the UK, the Swedish Transport Administration, Väylävirasto (the Finnish Transport Administration), or Rijkswaterstaat (Agency of the Ministry of Infrastructure and Water Management in the Netherlands). Yet, interorganizational partnerships and collaborative approaches are common also in the private construction sector (Jacobsson and Roth, 2014), and the current push towards collaborative procurement strategies in the public infrastructure sector can thus be seen as a general trend to find ways to manage the complexity and uncertainty in large construction projects (Davies *et al.*, 2019).

The political emphasis towards collaborative contracting arrangements varies between governments and countries. In Denmark, UK and Australia, for example, national governments have played an active role in promoting collaborative procurement arrangements through various reports and policies. Often, collaborative contracting has been presented as a way to increase productivity; see, for example Kristiansen *et al.* (2005) for an overview of the

¹ In Paper III and IV, the term ‘relational contracting’ is applied as a synonym to ‘collaborative contracting’. This term has been changed in later papers because of the connotations with a specific contract theory (Macneil, 1978), whereas the phenomenon in focus in this thesis is more general.

Danish policy development, or Alderman and Ivory (2007) and Gerber and Misko (2019) for the UK and Australian case respectively. In Sweden, similar governmental reports have indeed criticized the perceived low productivity in the sector (e.g., SOU 2012:39) yet the Swedish National policy on procurement (Swedish Government, 2016) is very general, directed towards all procurement activities within the public sector, foremost addressing strategic goals such as increased sustainability. This is similar to the policy directions for infrastructure clients in the Netherlands (Hartmann *et al.*, 2014, Plantinga *et al.*, 2020b) and Norway (Malvik and Engebø, 2022).

In general, clients are attributed a central role in shaping the development in the construction sector (Glass *et al.*, 2022). For example, clients can steer the operations by including technical requirements, such as for decreased CO₂ emissions (Kadefors *et al.*, 2021), enhance innovation (Eriksson, 2013), or by selecting the organizational and contractual governance structures to set the stage for the interorganizational relationship between client and contractor (Manley and Chen, 2016, Volker and Hoezen, 2017, Davies *et al.*, 2019). Yet, the processes to find the right contracting partner differ substantially between private and public clients and private contracting practices are often based on long-term relationships, which are impossible for public clients to establish within public procurement regulations (Bygballe *et al.*, 2010, Axelsson and Torvatn, 2017). For example, in any project applying a collaborative procurement strategy it is in practice a combination of formal and informal governance mechanisms that shape the collaboration. However, public clients generally incline towards more formalized or 'engineered' collaboration within a single project since their contracting and procurement activities are governed by public procurement regulations and other public policies (Bresnen and Marshall, 2002, Bygballe *et al.*, 2015, Nilsson Vestola and Eriksson, 2023, af Hällström and Bosch-Sijtsema, 2024). Accordingly, many public clients struggle to manage this private/public interface in such relationships. Matinheikki *et al.* (2019), for example show the need to temporally construct a hybrid logic specific for the project, integrating the public servant logic and the market logic, to form a beneficial collaboration.

In essence, despite the fact that many public infrastructure client organizations do initiate collaborative procurement strategies such changes are still challenging to implement (Bresnen and Marshall, 2010) and many initiatives are later discarded (e.g., Hartmann *et al*, 2014, Davies *et al*, 2018, Kadefors *et al.*, forthcoming). Plantinga *et al.* (2020b) illustrate the phenomenon of ‘one-off’ procurements, i.e., that the purchasing department in the public client initiates new innovative procurement strategies for single projects but that these new procurement models fail to be integrated further in new projects. Thus, instead of refining and developing the innovative procurement strategies, new projects are procured with another novel strategy. Plantinga *et al.* (2020b) suggest that these 'one-off' patterns have several explanations: Initial problems in the implementation are seen as indications that the strategies are flawed and therefore discarded premature. Other times, there is simply a lack of the necessary integration mechanisms in the client organization to move from exploratory to exploitative activities.

Davies *et al.* (2018) illustrate the same phenomenon, where operational personnel describe the central levels of the Highways Agency in the UK as ‘*addicted to change*’ (p.1413), constantly trying new procurement strategies even before being able to evaluate the previous approach. Furthermore, Bresnen and Lennie (2023) reveal another common issue when implementing collaborative contracting, namely the large variations in application between projects. The study follows a large infrastructure program in the UK which is initiating a collaborative contracting model for its projects based on the industry initiative ‘Project 13’. A key finding was that while the decision to introduce a collaborative model was a top-level decision intended to make the projects align, the result turned out the opposite way, as projects interpreted and operationalized the collaborative model differently.

2.4 The implementation contexts of collaborative procurement strategies

Already in 2010, Bygballe *et al.* (2010) concluded that there was no unified view on partnering relationships in the construction sector. Furthermore, they found that the literature had a tendency to focus on the dyadic relationship between

client and contractor in a single project. In a more recent literature review, Engebø *et al.* (2020) show that the issue of collaborative procurement strategies and project delivery models still attracts substantial research interest and that the number of publications increases. Their review illustrates how the literature is still much concerned with trying to conceptualize what is actually meant by collaborative procurement strategies or project delivery models. Other identified main themes are: the success or failure and ‘pros and cons’ of such procurement strategies, how social dimensions are important, and descriptions of implementations and experiences. Engebø *et al.* (2020) conclude that what is still lacking is the acknowledgment of the *context* in which these procurement strategies are adopted and implemented. They finish by stating that ‘*Literature does not – to a large extent – consider how context impacts the PDMS*’ [*Project Delivery Models*] (p. 296).

Where previous research has been successful in describing how collaborative practices are developed and institutionalized *within* the projects, the understanding of how refinement and development of collaborative contracting practices emerge (or not) over time, *within their context* is weaker. There are some notable exceptions, for example, in the formerly mentioned study by Bresnen and Lennie (2023) the authors include several projects within the same program to understand the role of the program level in translating the collaboration model to actual project practice. The case study by Aaltonen and Turkulainen (2022) describes alliancing practices in the Finnish infrastructure sector as a long-term structured sector approach, where the development process involved systematic learning from Australia and the US, including study visits, expert advice, and translations of guidelines and contracts. In addition, pilot projects were used to refine practices successively, training was organized broadly for industry practitioners, and consultants supported alliance projects. Thus, the alliance projects followed a relatively well-defined process, and outcomes have been considered successful. However, because of the demands on the organizations involved, alliancing is still used for a limited number of projects. Plantinga *et al.* (2020b) show how the limited internal capacity to refine and develop procurement models increased the complexity at project level and Davies *et al.* (2018) similarly illustrate how organizational routines

play an important role in connecting the project level with the permanent organization. The routines allow the procurement department to gather experiences and refine the contracts between projects.

In effect, literature on collaborative procurement strategies increasingly stresses the importance of the institutional context on emerging relationships, development of project routines and joint project practices. Adapting this practice perspective in studies of collaborative contracting, while simultaneously including the permanent organization and different projects in the scope, add new perspectives to the construction management literature. For example, by explaining the large variations in adoption of collaborative contracting procurement strategies between different contexts.

3 Theoretical framework

This chapter first provides the theoretical perspective of practice and structuration. Further, the chapter describes project-based organizations and the public sector characteristics, and the impact these structures have on the actions and views of the people engaged in them. As such, the chapter provides the analytical framework that will be applied to discuss the aggregated findings of the study.

3.1 An underlying practice perspective

In this thesis, the practice perspective, based on Giddens's structuration theory (1984), has served as a sensitizing (i.e., informing) concept, making the researcher perceptive to how structure and agency are mutually constituted and need to be considered together (Nicolini, 2012). As such, organizations are thereby a result of the social actions of organizing, and the study of practices – i.e., the intentions, motivations and consequences of individual actions in patterns – are foundational (Czarniawska, 2014).

According to structuration theory, structure and agency are mutually constituted, which means that even though individual actions are organized by rules and resources, making certain actions possible, this is not authoritatively dictating what to do (Whittington, 1992). Agency, in this view, is defined as the intentional activities through which individuals seek to fulfil their needs and goals. This theoretical assumption implies that institutions are the '*practices with the greatest time-space extension*' (Giddens, 1984, p.17). In that sense, structuration can be described as a form of institutional theory, albeit with a focus on how people's practices construct and change institutions. Studying the links between actions and institutions provides the possibility to emphasize the *processual* aspect of stability and change in institutions and practices (Barley and Tolbert, 1997, Edwards, 2016, Sydow and Braun, 2018).

One way to illustrate the mutual constitution of structure and agency is through the study of organizational routines. Feldman and Pentland (2003, p. 95) define organizational routines as *repetitive, recognizable patterns of interdependent*

actions carried out by multiple actors. With structuration as the underlying ontology, organizational routines can be understood as having two interrelated parts: the abstract idea of a routine, i.e., the ‘structure’, and the actual performance of the routine by a specific individual in a specific time (ibid.). Individuals, with their enactment of the organizational routines, can purposefully change practices. However, the ability of an individual to use agency depends, for example, on the legitimacy and power position of the actor in the context (Howard-Grenville, 2005).

Adopting a structuration view has implications for how project-based organizations and public organizations are understood theoretically. Traditionally, the existence of certain operations in organizations has been grounded on the validity of the production, or output, of an organization. This is based in the traditional, ‘goal rational’ (Weber, 1947) views on organizations, assuming rationality in organizational decisions and behavior. Galbraith (1974) and Mintzberg (1979) continued, but refined these ideas, building theory on how organizations are built around information flows to pursue specific tasks and division of decision-rights. What contrasts practice theory from this more traditional ‘goal rational’ view on organizations (cf. Weber, 1947), is that it allows actor cognition and their perception of the ‘rule of the game’ - conscious or unconscious through experience. Thus, the focus shifts to individual knowledgeability, i.e., the active way in which people use the knowledge of the social system to guide their action in accordance with the rules and resources available (den Hond *et al.*, 2012).

Institutionalism as a theoretical perspective has grown in importance for organizational research, much for acknowledging that ‘rationality’ was in fact, rarely part of organizational decision-making (March and Olsen, 1989). For example, Meyer and Rowan (1977) conclude that formal structures of an organization have very little to do with actual decision-making processes, and the formalization of new structure instead serves as ceremonies to increase legitimacy of, and within, the organization. As such, institutional theory has been a way to explain the ‘irrational’ behavior often discovered in decision-making processes and practices in organizational life. In organizational

research, the theory of structuration has offered an alternative to the traditional view that an institutions and organizations are static and external to the individuals in the organizations, yet without neglecting the importance of formal and informal structure and hierarchy (Edwards, 2016). In their investigation of the theoretical relation between structuration and institutional theory, Barley and Tolbert (1997) conclude that formal structures still influence attention, practices and individual agency in work. Similarly, March (1994), and Thornton and Ocasio (2008) show how formal organizational structures provide a normative 'frame of references' that influence the attention of the individuals in the organization. The formal structures further influence the level of agency (i.e., power), and responsibility (Weber, 1947), that certain individuals have in decision-making and implementation processes (Sager and Gofen, 2022).

In summary, to understand how practices develop or are maintained by individuals in an organization, the formal structures and their influence on attention and allocation of resources in the implementation processes, as well as the influence of different institutionalized roles and learning structures, must be recognized. Therefore, it is important to account for the specificity of project-based organization and public organizations as both formal organizing structures, and as institutional structures affecting the individuals acting within them.

3.2 Project-based organizing

3.2.1 The traditional view on project-based organization

Organizational structure refers to the formal divisions of authority, tasks and responsibilities between individuals and groups within an organization. In this tradition, projects are the result of an organizational design that can manage high information flows and changing conditions (Galbraith, 1974, Hobday, 2000). Mintzberg (1979) described project-liked structures as 'adhocracy', referring to the structure's ability to make ad hoc decisions as problems appeared. Projects have later been defined as a form of temporary organizing, most often as an organization formed to complete a specific *task* within a

predefined *timeframe* by a group of actors (*team*) in different constellations with the joint competence to complete the *transition* (Lundin and Söderholm, 1995). As an organizational form, projects are effective at integrating different types of knowledge and skills and coping with the project risks and uncertainties often associated with complex, high-value products (for example the construction of a railroad) (Hobday, 2000, Lindkvist, 2004, Söderlund, 2023). As such, projects result in high decentralization of decision-making rights to the project level, which increases both the responsibility and power of the project manager, with the aim of creating an information flow that is easier to handle, and which can include external parties in core process (Hobday 2000). Thus, in project-based organizations it is inevitable to defer strategic responsibilities further down the hierarchy (Miterev *et al.*, 2017b), and in the greater sense, as Hodgson *et al.*, (2019) conclude, ‘creating projects’ means the delegation of implementation of complex policy and strategy issues before they have materialized in concrete matters. Müller *et al.* (2015) suggest that, in effect, it is the flexible organizational structures that enable autonomy.

Miterev *et al.* (2017a) conclude that there has been a clear schism between the literature covering projects as single temporary organizations, and the literature covering project-based organizations. Where single projects have been the foci of investigations, research has increasingly considered the contingency perspective (Shenhar, 2001), the uniqueness of project practices (Blomquist *et al.*, 2010) and actors’ mixed institutional belonging (Kadefors, 1995) and the project’s autonomy (Willems *et al.*, 2020). However, when turning to studies of the project-based organization, research often assumes goal rationality, in the sense that the projects are tools for strategic goals (Miterev *et al.*, 2017c). Much research attention has focused on the different operations that can increase the balance between the decentralized, autonomous projects and the stable capabilities (Eltigani *et al.*, 2020). Such organizational activities include project management education, resource allocation, steering committees, project routines, audits of troubled projects and maturity models. These activities are often administered by an organizational-level Project Management Offices (Pemsel and Wiewiora, 2013). Furthermore, highlighting the different purposes that projects might have for

the organization, Brady and Davies (2004), propose the notion of ‘vanguard projects’ for those projects that are aimed to be innovative and explorative, and in effect more autonomous. Vanguard projects need to develop new ways of working and develop new routines, tools and processes through a type of trial-and-error learning (Söderlund and Tell, 2009). In contrast, for those projects that are more similar and repetitive, the organization can develop intellectual resources, routines and expertise in order to benefit from economies of repetition, in contrast to project-led learning, where the learning occurs from the single project to the organization (Eriksson, 2013).

3.2.2 Viewing projects as practice

However, despite the widespread use of Project Management Offices, for example, it has been suggested that their actual function often is limited to collecting and storing knowledge (Eriksson and Leiringer, 2015). Hartmann and Dorée (2015) conclude that such information-based approaches to learning often fail to capture the actual learning trajectories in project-based sectors, as learning tends to be social and happens in informal networks (Grabher, 2004). Further, Willems *et al.* (2020) stress that project autonomy and integration in the organization change over the lifetime of a project. In addition, they show how autonomy is not given, but actively shaped by the project organization. In this view, autonomy of projects differs also with how actors within the project themselves assess their possible action frame (Davies, 2017, Willems *et al.*, 2020). Autonomy and self-governing are thereby not assumed to be results of rational and hierarchical delegation of decision rights, instead it is made possible by the subtle control systems applied through the individual’s perception of what is appropriate according to the common frame of reference (Clegg *et al.*, 2002). These frames of reference thus influence the level of change possible by single individuals (Windeler and Sydow, 2001).

As the projects must create their autonomy and safeguard project specific roles and practices the relationship between the projects and the permanent organization is in general weak, and sometimes even hostile (Bredin and Söderlund, 2011). This may result in a reluctance from the project level towards centralization of routines and processes, together with a strong emphasis on

project autonomy (Bresnen *et al.*, 2005). Thus, for many scholars, project-based organizations seem to present some form of organizational paradox, where the permanent levels' purpose is to offer the mechanisms needed to accumulate knowledge between projects, but the projects still become isolated entities (Bakker *et al.*, 2011).

More recent developments address this paradox by challenging the conceptualization of temporary organizations as organized around a specific task, as the project task changes during the project, and may differ between the actors involved (Lundin and Söderholm, 2013, Nilsson Vestola *et al.*, 2021). This development has moved project studies towards increasingly adopting process perspectives, including the processual aspects of tasks, but also of the social relationships within and between projects, i.e., the project *context* (Bakker *et al.*, 2016). This pinpoints an important flaw in the initial conceptualizations, that even though projects can be seen as temporary, it would be wrong to view them as being without context, as projects are very much embedded in different multi-layer social structures (Sydow and Braun, 2018) and are affected by institutional pressures (Engwall, 2003, Holti, 2011, Söderlund and Sydow, 2019).

Thus, applying an institutional lens, scholars argue that it is wrong to assume that projects are temporary while the organizational level is 'permanent'. Instead, the temporary and permanent organizing is a flow of activities that are closely linked because the employees go between permanent and temporary structures within the organizations (Sydow and Windeler, 2020), as well as other projects (Grabher, 2002, Engwall, 2003, Miterev *et al.*, 2017a). Therefore, applying a practice perspective to projects, the 'bottom-up' perspective becomes relevant and emphasizes that actions and practices which sustain and build projects are based on individual actions (Blomquist *et al.*, 2010) that have been carried out in individuals' knowledgeability of the setting, where shared rules, norms, and routines become more important as 'permanent' structures than the formal organization level (Söderlund *et al.*, 2008, Sydow and Windeler, 2020). Moreover, Brookes *et al.* (2017) show, in their study of long-term infrastructure projects, that projects that span over long periods of time may actually act as a

stable setting in a changing environment, in contrast to what much of the previous literature on projects has assumed. Similar to Willems *et al.* (2020), Hetemi *et al.* (2020) also emphasize that the external features of a project change over time. In their study on two large railroad projects, they illustrate how the project legitimacy, in the eyes of its environment, changes over time and between actors.

Bygballe *et al.* (2021) suggest that studying organizational routines might be a way to understand how stability may balance with flexibility and change. The dynamic routines lens, as described by (Feldman and Pentland, 2003) acknowledges the actual practices, and the individual agency at project level as key in understanding change in project settings. However, Bygballe *et al.* (2021) also point out that this agency might also be used to refuse new practices, as, for example, in the case of Bresnen *et al.* (2004) in their study of top-down implementation of new management tools. In these cases, the agency of project managers has a stabilizing effect that may or may not hamper the developments of project capabilities in the organization as a whole.

3.3 Public organizing

3.3.1 Challenging the understanding of bureaucratic organizations

Turning the spotlight to the public sector, a public organization is characterized by being part of the State's activities, performing public services, and providing public value (Rainey, 2014). Public organizations are part of the political web, meaning that their resources, organizational structure, and tasks, are directly connected to the political decisions on how the public sector is structured and how public services should be delivered.

Bureaucracy is still broadly the prevailing structure of the public sector (Alvesson and Thompson, 2006). Yet much of public work is carried out in other types of organizational structures (Clegg, 2012). Traditionally, based on Weber's (1947) work, bureaucratic structure has been the ideal organization. Bureaucratic structure implies that organizational tasks are divided into parts

that are strictly hierarchically delegated in the organization, so that the joint operations fulfill the organizational goals. The decision mandate is thus divided hierarchically but in smaller parts so that corruption of decisions is limited. This regulatory structure was thus the ideal for much of the first half of the 20th century public sector organizing. In bureaucratic structures, changes in operations need to be sanctioned by the management, as they have responsibility of decision making (Mintzberg, 1979).

However, from an institutional theory perspective, it is important to emphasize when describing public organizations as bureaucracies, that in fact public organizations are 'political' organizations and as such they are playing fields of inconsistent norms, and competing goals (Czarniewska, 2010). Taking procurement as an example, Schapper *et al.* (2006) illustrate three fundamental values that may be conflicting. First, the procurement must be in compliance with regulations, which can make the processes long and bureaucratic. Second, procurement processes must simultaneously adhere to goals of efficient spending of public money, often labelled 'value for money' in relation to which the regulatory processes may seem inefficient. Thirdly, procurement may lever other political objectives by using procurement as tool which may not comply with goals of reducing cost.

The legitimacy of political organizations is consequently associated with processual aspects, and a capacity to attend to these inconsistent demands (Meyer and Rowan, 1977, Brunsson, 2002). Brunsson (2002) further propose a conceptualization of the organization as having three parts, namely the *talking*, the *deciding* and the *action* segments of the organization. In practice, this means that the policy or strategy formulating parts of an organization can have little to do with the acting parts of the organization, that are handling day-to-day activities and production. When legitimacy work includes formulation of policy and other activities in the 'talking' part of the organization, this can lead to a state of constant reformation, yet, few of the reforms fundamentally change operations. In this view, projects are a way for public organizations to create an action-organization that can handle production which in the talking or deciding part of the organization would be impossible because it prioritizes one norm or

public value over another. Or, in other words, those operations that the public sector wants to make less 'bureaucratic' and more 'agile' (Hodgson *et al.*, 2019).

3.3.2 Practices of implementing public policy

In line with the traditional view on bureaucratic structure in the public domain, policy implementation has traditionally taken a top-down perspective, assuming that if the policy is well-formulated successful implementation will come automatically (Hupe and Hill, 2016). In this view, politicians or other decision-makers decide on a policy addressing issues by certain objectives, and the implementation following it has a linear process (Sabatier and Mazmanian, 1980, Schofield, 2001). This perspective has been contested by researchers emphasizing the individual level and the actor's ability to formulate and shape the policy by the process of implementation. In contrast, they argued that one could not differentiate between the formulation of policy and its implementation (May and Winter, 2007, Winter, 2012). The most widely known example of this "bottom-up" approach is maybe Lipsky's 'street-level bureaucracy' (1980). Today, there is a general agreement on the influence of individuals in the implementation process (Saetren, 2014).

Furthermore, the individual's role in the implementation also differs between the implementation context. Lane (1983, p.36) describes it as follows: '*it is the instability of the implementation phenomenon: the larger the set of conditions that the implementor controls, the greater is the probability that the behavior of the implementor will affect the outcomes*'. Noteworthy here is that the public sector in Sweden is known for strong decentralization (Hall, 2015). Matland (1995), further shows how implementation varies according to the policy and the context in which it is introduced. He suggests various scenarios with regard to the ambiguity of the policy and/or conflicts with existing policy. If ambiguity is low and there is no conflict, the policy can more easily be implemented through administrative implementation; i.e., top-down decisions may straightforwardly be operationalized and understood by an organization. A highly ambiguous policy, on the other hand, that conflicts with other policies, may be implemented only symbolically and policy outcome will vary across sites as the interpretation differs between individual employees. When public

organizations adopt contradictory policies, it results in the ‘conservation of conflicts’ (Baier *et al.*, 1986) and presents difficult dilemmas for the officers responsible for translating the policies into practice (Hupe and Hill, 2007, Johansson, 2012). Yet, as Baier *et al.* (1986) conclude, if policy conflicts are clearly acknowledged in the policy process, they may be more easily resolved. If clashes are not explicit, a higher variation in policy translation is likely, and the dilemmas may hamper motivation and create disappointment among the implementing officers.

In essence, the goal rational view on project-based organizing and the ideal bureaucratic structures actually tells us little about how people within these organizations act. Nonetheless, the project-based structure does provide a normative function of, for example, the project manager’s role. Similarly, although the idea of an ideal bureaucracy has been disillusioned, for example by pointing out that individuals at any level of the organization may influence and shape policy implementation, the importance of the regulatory policies still influence the individual’s frame of reference, legitimize their actions and direct attention in the organization.

4 Methodology and methods

In this chapter I will provide the overall research design and methodology together with a description of the longitudinal case study and the analytical process. The chapter ends with a reflection on the methodological implications for research quality and research limitations.

4.1 Overall research design

This chapter focuses on the overarching doctoral research project and the longitudinal case study as a whole. More detailed descriptions of the particular methods and analysis for appended papers can be found in their respective method sections.

The thesis is based on a single longitudinal case study following the initiative to introduce a collaborative procurement strategy in the Swedish Transport Administration and its developments over a period of seven years (early 2017 to 2023). A process perspective (Langley *et al.*, 2013) has been central to the research, with research questions asking *how* and *why* things emerge. Case studies are suitable to capture complexity and embeddedness of a phenomenon (Stake, 1995) and allows the researcher to identify cycles or patterns over time (Brunet *et al.*, 2021). Even though collaborative contracting as an empirical phenomenon is extensively studied, it was something new in the Swedish Transport Administration, and the study therefore provided an opportunity to follow a development process, including several projects, in real time - over time. Issues and unexpected findings in the empirical material have continuously directed the unit of analysis over time. For example, at the beginning of the study, many interviewees from the client side independently brought up how contradictory top-level policy made it more difficult for them to understand how to apply the new collaborative procurement strategy in the project. This issue surprised me and guided me to broaden the scope of the case study to include the policy context and the permanent organization in a much more explicit way. This resonates well with the case study methodology, which is iterative in nature (Stake, 1995, Flyvbjerg, 2006). At first, the emphasis was on investigating how the new collaborative procurement strategy was translated

into project practices. The practical issues at project level and the experiences of the project members were at the center of the research. As the case developed, the scope was broadened to include also the relationships between different projects and levels within the organizations.

The actions and experiences of individuals in different parts of the organizations constitute the core of the case study. As such, the research takes a practice perspective and is ontologically informed by structuration theory, in the sense that structure and agency are mutually constituted (Edwards, 2016). In this view, actors may purposefully change practices to a greater or lesser extent depending on their position within the structure. This implies that the primary understanding of the organization lies with the actors (Czarniawska, 2014). They are 'knowledgeable agents' (Giddens, 1984) and can reflect on the structure within which they act. From this standpoint, interviews and observations, are good ways of getting to know the organization one is studying. Yet, the structure in which individuals act in both enable, restrain, and guide actions (i.e., they can be seen as the 'rules of the game'). Therefore, the policy and legislative context have been equally important to include in the case material.

The longitudinal and processual aspects of the case have been a key component in the research methods. Longitudinal studies that seize development across projects are few (Bakker *et al.*, 2016) and the case provided an opportunity to follow multiple projects within a single organization, simultaneously, over an extended period of time. To differentiate between various types of longitudinal case studies, Blazejewski (2011), introduce four separate features of the research. Firstly, there is *case time*, i.e., the timeframe of the case. Then there is the *research time*, that indicates when the empirical material was gathered and the *temporal research perspective*, specifying if the researcher is studying an ongoing process or an historical event. Finally, there is the *temporal data perspective*, indicating whether the empirical material is historical (e.g., retrospective interviewing) or is accounts of ongoing events and concurrent documents which relate to the events under study. These differentiations are valuable to describe the overlap of collection of empirical material building the

case and the investigated case temporal boundaries. Here, the collection of empirical material was gathered in intervals, distributed in four rounds over the course of the case study, and was not continuous over the whole case time. Blazejewski (2011) define this as a ‘multiple-shot’ method, meaning that the research time and the case time coincide but only at intervals. The collection of empirical material will be further specified in section 4.3.

To summarize, the study builds on a longitudinal case study of the implementation process of a collaborative procurement strategy. The unit of observation has been the individuals in different parts of the public client and the formalized decisions (policy, project procurement documents, etc.). Although the unit of analysis has differed between the appended papers, the overarching focus has been on the development of new practices associated with the implementation of the collaborative procurement strategy.

The following section introduces the empirical case and the Swedish Transport Administration and gives an overview of the seven projects in the study. From this, the collection of empirical material for the case study, and the analytical process are explained.

4.2 The empirical case – A new collaborative procurement strategy in the Swedish Transport Administration

The Swedish Transport Administration is one of Sweden’s largest agencies; in total, the agency employs approximately 9000 individuals and the total budget for 2023 was almost 90 billion SEK (approx. 8 billion EUR). Of the total budget, almost 60 billion SEK were spent on the procurement of services and goods of a second contracting party (Trafikverket, 2023).

The Swedish Transport Administration is a large organization with several responsibilities, ranging from the responsibility for building, maintenance and long-term planning of State-owned infrastructure, to scheduling train traffic and authorizing driver’s licenses. Figure 1 shows a simplified organizational scheme (highlighting parts of the organization and the projects essential in the study).

The Swedish Transport Administration was founded in 2010 by a merger of the former road- and railroad administrations, and some additional smaller agencies within the infrastructure sector. According to the governmental instruction, in addition to provide the necessary conditions for a sustainable infrastructure, the Swedish Transport Administration should *‘in their role as a client’*, especially aim to *‘increase productivity, innovation, and efficiency on the markets for investment and maintenance’* (SFS 2010:185).

During the agency’s first years, this instruction gave rise to several initiatives to increase productivity, efficiency and innovation. In 2009, the government asked for the establishment of a ‘Productivity committee’ to consider how the Swedish Transport Administration could act to fulfill the government’s instructions. This work ended up as recommendations (SOU 2012:39) on how the agency could use procurement as policy tool. The Swedish Transport Administration’s role as a client was formulated as a ‘pure client’² policy (Trafikanalys, 2017), which resulted in a shift towards design-build contracts and an idea to distance the client from the contracting partners in order to leave room for market driven innovation. The Productivity committee suggested that 50% of the contracts would be procured as design-build contracts, where the contractor is responsible for the design and production (in contrast to traditional design-bid-build contracts where the client is responsible for design and the contractor is responsible for production).

However, in 2016, the Purchasing department had formalized a new procurement strategy, replacing the ‘50/50’ principle. The new procurement strategy was instead built on a fit-to-project procurement model, similar to procurement strategies presented in (Eriksson and Hane, 2014) and emphasizes that large and complex project may benefit from collaborative procurement approaches. According to this new procurement strategy, the project-specific procurement model should thus be based on certain criteria (complexity, uncertainty, and degrees of freedom). Depending on the project type, the strategy recommends a contract type, reward system, and

² The translation for the Swedish term “Renodlad beställare” applied in the Swedish Transport Administration.

procurement model. Complex projects with high uncertainty are suggested to be procured with emphasis on collaboration. This collaborative procurement strategy was specified in a framework called High collaboration but often referred to in the organization as ‘the ECI-model’. The formal High collaboration framework/ECI-model is based on four parts, specifying the possible alternatives for choosing the reward system, contract arrangements, procurement criteria, and a list of stipulated collaborative activities such as co-location, conflict management, collaboration facilitator and joint decision making. This doctoral project was initiated in connection with the development of the High collaboration framework, to follow the implementation.

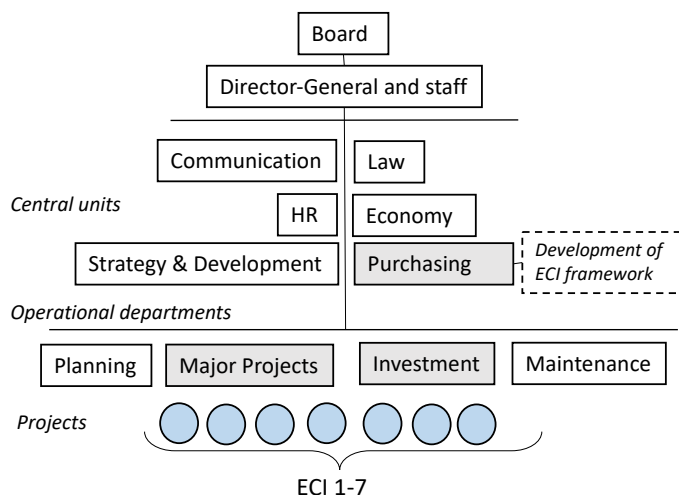


Figure 1. The organization of the Swedish Transport Administration with the projects in the case study (colored in blue). Grey color indicates the parts at central level most relevant for the study.

The case study includes empirical material from seven ‘ECI-projects’, hereafter referred to as ECI 1-7, and from central level, particular from the Purchasing department. The seven projects are road and railroad projects ranging from 20 M EUR to 500 M EUR, on the time of awarded contract. They are part of either Swedish Transport Administration’s operational department Investment Projects, or Major Projects, depending on the size. However, belonging have

change over the course of the research project due to internal re-organizations. A brief overview of the projects in the case study can be found in Table 1.

Table 1 Overview of the projects included in the case, with their estimated budget and duration when contract was signed. These figures have changed in all projects.

	Type of project	Contract signed	Planned traffic	Department	Initial budget
ECI 1	Railroad in dense urban area	2015 Contractor 1	2025	Major Projects	350 M EUR
ECI 2	Railroad in dense urban area	2016 Contractor 2	2026	Major Projects	400 M EUR
ECI 3	Road, new section	2016 Contractor 3	2020	Investment Projects	20 M EUR
ECI 4	Railroads, partially urban areas	2017 Contractor 2	2024	Investment Projects	200 M EUR
ECI 5	Railroad tunnel in urban area	2018 Contractor 4	2024	Investment Projects	250 M EUR
ECI 6	Road, highway in dense urban area	2018 Contractor 5	2023	Major Projects	250 M EUR
ECI 7	Railroad tunnel in dense urban area	2019 Contractor 5	2026	Major Projects	500 M EUR

The choice of projects in the study have been made based on an initial aim to include all large ECI projects in the study if possible. When the study started in 2017, ECI 1- 4 were the only ongoing projects with ECI/High collaboration and they were all included in the case (ECI 3 was not included in the first interview round because of its smaller size). Later, in 2018, additional projects had been procured within the formal framework of ECI in the Swedish Transport Administration. To adhere to the overall aim of the research, a decision was taken to include the new ECI/High collaboration projects. Subsequently ECI 3, 5, 6, and 7 were included in the case study. A timeline of the projects (starting

when contract is signed with contractor) and the collection of material for the case study, can be found in Figure 2.

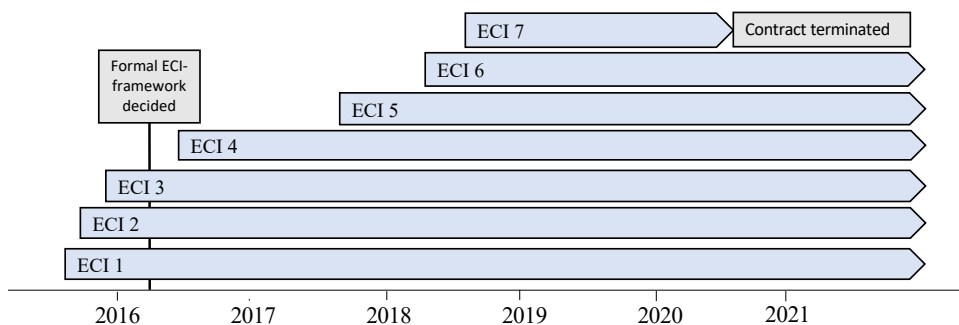


Figure 2. Timeline of the seven projects (starting from when contracts were signed with contractor).

As described, the idea was to include all of the projects in the Swedish Transport Administration applying the ECI procurement model, and up until 2020, the seven projects included here were the total number of ECI contracts procured in the agency. There have been a few additional projects applying this model in the Maintenance department within the Swedish Transport Administration, but these have not been included because of their different scope. There is also a large railroad program planning to use a new collaborative procurement strategy, rather similar to the ECI model but with a different label. As these projects were not associated with the initial initiative in 2016 that this research followed, they have instead been included in the study as a part of the general development process in the organization.

4.3 The collection of empirical material

The case study builds on empirical material from interviews, organization- and project-specific documents, as well as a smaller number of observations and informal conversations when visiting the projects (see Table 2 for a summary of empirical material). However, the primary empirical material of the case consists of semi-structured interviews in the client's, contractors', and technical and managerial consultants' organizations.

Table 2 summary of empirical material

Type of data	Description	Sources
Interviews	Transcripts and initial notes from semi-structured interviews with program, and project members (client, contractor and consultants) as well as officials in the Swedish Transport Administration at the Purchasing department, Strategic Development, Law, and Major Projects departments.	71 interviews, 51 unique respondents.
Documents	Documents from the projects and general policy documents for the Swedish Transport Administration: organizational procurement strategy, formal procurement routines, ECI /High collaboration framework, large projects procurement strategy, tendering documents, contracts (consultancy contracts, collaboration contracts and design build-contracts), relevant presentations to external audiences, and certain meeting-minutes for collaboration meetings.	> 500 pages
Observations	Field notes from visits to the projects. Observations include collaboration meeting, risk workshop visit to visual design studio, informal conversations in connection to interviews.	39 hours of observation

4.3.1 Interviews

Interviews have been conducted in *four rounds* (I: 2017, II: 2018-2019, III: 2020-2021, and IV: 2023) throughout a period of seven years, early 2017 to spring 2023 (including two periods of parental leave in 2017 and 2022).

Following an explorative and inductive approach, interviews have been semi-structured for me to be able to ask follow-up questions and for the respondents to describe their experiences more freely (Kvale and Brinkmann, 2009). The interview questions have evolved during the case study. Overall, the interviews have covered three main themes: 1) development of project-specific contracting models 2) expectations, and experiences of project practices 3) integrating structures, and the relationship between the different parts of the organization (i.e., between the individual projects and between the projects and the permanent organizational functions). For interviews with members in the permanent organization, the questions centered round the relationship between the projects and the purchasing function and the development process of procurement strategies, learning between projects and developments of policy. Questions were adjusted to the particular role of the interviewee.

In total, 71 semi-structured interviews have been conducted with 51 unique respondents (i.e., some interviewees have been interviewed on more than one occasion). Interviewees were in total: 32 client representatives, 12 contractor representatives and 6 consultants (see Table 3 for a summary of the interviewees in each round, for a complete list see Appendix.). The interviews were recorded and transcribed. On average the interviews lasted for 72 minutes, ranging from 40 minutes to three hours.

Table 3 summary of the interviews and interviewees and in each round.

Collected empirical material	1th round Spring 2017	2nd round Autumn 2018 - spring 2019	3rd round Autumn 2020 - spring 2021	4th round Spring 2023
ECI 1	8 interviews (client/ contractor/ consultants)	6 interviews (client/ contractor/ consultants)		1 interview (client)
ECI 2	7 interviews (client /contractor/ consultants)	5 interviews (client/ contractor/ consultants)		1 interview (client)
ECI 3		4 interviews (client/ contractor/ consultants)		1 interview (client)
ECI 4	3 interviews (client)	2 interviews (client/ contractor)		1 interview (client)
ECI 5		3 interviews (client/ contractor)		1 interview (client)
ECI 6		1 interview (client)	2 interviews (client/contractor)	1 interview (client)
ECI 7		8 interviews (client /contractor)	5 interviews (client/ contractor/ consultants)	1 interview (client)
Central level within the Swedish Transport Administration.	2 interviews (Purchasing dep.)		4 interviews (Purchasing dep, Major Projects dep.)	5 interviews (Strategic Development, Law, Major Projects, Purchasing dep.)
Total	20 interviews	29 interviews	11 interviews	12 interviews

Overall, as a minimum, the project managers from contractor and client side have been interviewed in each of the seven projects. The *first round* of interviews was held in ECI 1, 2, 4 and with two public officers in the Purchasing department. Interviews were conducted in spring 2017 (total of 20 interviews). In ECI 1 and 2 interviews were held with several members of the project management team in the client and contractor organization and covered more general themes, such as: experiences of the new collaborative contracting model, which processes and routines were applied in the projects, how these developed over time, and difficulties and benefits with the new collaborative contracting model. Here, some representatives from the engineering consultants that were part of the project management team were also interviewed. These interviewees were chosen based on snowballing (Kvale and Brinkmann, 2009). In ECI 4, fewer interviews were conducted, as the projects were much smaller and less similar to the formal collaborative contracting framework in the Swedish Transport Administration than ECI 1 and 2. At the Purchasing department, interviews were conducted with the responsible public officers for the new ECI/High collaboration framework to get their view of the new collaborative procurement strategy and its implementation.

The *second round* of interviews (2018-2019, total of 29 interviews) were held after four additional projects were added to the case in 2018. Here, the unit of analysis was clearly limited to the development process instead of a detailed understanding of each project. Thereby, interview questions were more focused on the overall development process and questions regarding learning structures in the organization (e.g., how previous projects and organizational policies shaped project-specific practices, and how learning was captured and transferred in the organization). In effect, fewer interviews were conducted in each project in the second round. In ECI 1, 2 and 4 follow-up interviews were made to ascertain project progress.

The *third round* of interviews (2020-2022, total of 10 interviews) were conducted mainly to follow-up with the two latest projects (ECI 6 and 7) due to change in personnel at the client side. In addition, some supplementing interviews were made at the central level, for example with the Head of the

Major Projects operational department to get an overview of the current work and views on collaborative procurement strategies.

In the final, *fourth round* of interviews in spring 2023 (total of 12 interviews), the aim was to gain a final overview of the ongoing work at both the project and central level. As time passed, new collaborative contracting initiatives were noticed at the central level. I therefore included the key actors involved in the development of these alternative collaborative procurement strategies, in order to understand how they were related to ECI/High collaboration from 2016. Thus, beside follow-up interviews with all project managers at the client side, interviews were conducted with individuals in the permanent organization, for example, the Head of the Purchasing department, section Head of the Legal department, a Senior Advisor on contracting issues, and the public officers responsible for the High collaboration at the Purchasing department. See table in Appendix 1 for a complete list of interviews.

All 71 interviews have been conducted by myself, 11 of them were done in the company of a more senior researcher (i.e., supervisors). Doing some of the interviews together with others has been beneficial for the analytical process, as it has offered the opportunity to reflect on the content in direct connection to the interview. It was also a good way to constantly apply a reflexive approach (i.e., being constantly conscious about my own role in the research process) as the initial interpretation of an interview could be challenged by the views of the other people (Alvesson and Sköldbberg, 2018).

4.3.2 Observations and documents

The observations, in contrast to interviews, have not been systematically performed in all projects included in the case study. However, the observations have been important for my overall understanding of the case and the context. I have also been able to validate or question some of the material in the interviews based on my fieldnotes. Additionally, in the opposite direction, I have been able to formulate questions based on my observations. For example, if I observed a collaborative design meeting in one project, I could ask interviewees in other projects regarding their design processes in comparison

to the observed one. In the *first round*, observations were done in collaboration workshops in ECI 1 and 2 and at program level for ECI 1 and 2. In the *second round*, several observations were made in ECI 7, including for example collaborations meetings and risk workshop. Furthermore, a full-day internal education was observed on the new procurement strategy for project managers was observed. In the *third* and *fourth rounds* of collecting empirical material, no observations were made (partly due to the Covid-19 epidemic). However, I attended several internal workshops at the Purchasing department in my role as doctoral student and it has added to the overall understanding of the developments in the permanent organization.

Project-specific documents served as an important material and have served as a triangulating tool regarding technical issues in the specific contracts, and as a validation instrument of information given in interviews. In the *first round*, the project-specific contracts for ECI 1 and 2 were analyzed and compared to the formal High collaboration framework. In the *second round*, all of the project-specific contracts were analyzed and compared to find similarities and differences. This analysis fed into the interview questions. The policy documents, the procurement strategy documents and the formal collaborative contracting framework are key documents and have been an intrinsic part of the case study and in *all the four rounds* of empirical material collection, new or updated versions of the policies have informed the analysis in different ways. The empirical material in the form of formal documents have provided an essential link between the policy (central) level and the project level.

4.4 Analyzing the empirical material

Qualitative research is not only describing a series of action, but the researcher has the role of an active interpreter of the material (Alvesson, 2003), to explain practices in organizations (Nicolini, 2012). Brinkmann (2018) cites Foucault, who (allegedly) said: *people know what they do, they frequently know why they do what they do, but what they don't know is what 'what they do' does* (p.596). Relating the findings to previous theory when analyzing the case therefore becomes essential. As Ragin, (1992) describes it: *"theoretical ideas and principals provide ways to see the empirical world"* (p.218). In practice,

this meant that the refinement of the case boundaries, also called the 'casing' processes (Ragin, 1992), together with the establishment of the analytical framework(s) to understand the case, was carried out in tandem with the collection of empirical material.

In the research processes, papers were developed chronologically, building on the current empirical material at that time (indicated in Table 4). However, to increase accessibility for the reader, the order of the papers as appended in the thesis is not chronological. Instead, after the introductory Paper I, Paper II, aims to give the reader an overview as it accounts for the entire longitudinal case study. Paper III and IV zoom in on specific periods or aspects of the case. In Paper V, the complete case study is again analyzed.

Using different theoretical perspective and frameworks in the papers have increased my understanding of the case as a whole by emphasizing specific parts of the case. Langley (1999) refer to the work of Giddens (1984) when describing that *'mutual influence is difficult to capture simultaneously'* as an argument to temporary 'bracket' influences. In that sense, the papers are a type of 'bracketing' of certain aspect of the entire case analysis, and they can be seen as building blocks of the complete case study. Generally, literature on project-based organizing have been guiding the analysis of the research throughout the whole study, together with additional literature for analysis in each paper. In the beginning of the research project, existing literature on collaborative procurement strategies provided a basis for my understanding and fed in to the analysis of Paper I. Further, literature on public organizations and the importance of the individuals in policy implementation guided the study in Paper III, which subsequently directed focus toward the importance of intra organizational routines and organizational legitimacy - significant for the analysis in Paper IV and II. Finally, in Paper V, the project-based organizing literature is applied to contribute to literature on public procurement. See Figure 3 for an overview of the research and analytical process.

During the collection of data, the material was continuously read through to identify recurring themes and create an understanding of the overall case. This

resulted in a “database” in NVivo where the interview material was structured, and coded in three general themes based on the interview questions: organizational processes and roles, structure across projects, and results of the new collaborative contracting framework (in terms of innovation, sustainability, time savings and quality). For each of the specific papers, a subset of empirical material was analyzed with regard to the specific aim and research question of the paper and more detailed accounts of the specific analytical process can be found in the respective papers. After the second round of gathering empirical material, seven project descriptions/narratives were developed based on the material in the case study; these descriptions/narratives were developed and completed in the final round of data collection.

Paper I and Paper V are co-authored with senior researchers outside the doctoral research project and external cases have been included in these two particular papers. In Paper I, eight additional projects were analyzed with respect to their procurement strategies. The additional projects were two Swedish projects with Design-Build contracts, three Swedish projects with Design-Build-Maintain contracts and three projects with Design-Build-Finance-Maintain contracts in the Netherlands. Paper V also includes an external case study, following the construction of a municipal park in The Netherlands. External case studies were conducted by the co-authors. More detailed descriptions of these cases can be found in each respective paper. Table 4 gives a summary of the empirical material included in each of the five papers.

Table 4 The empirical material analyzed for each of the appended papers

Empirical material	1st round	2nd round	3rd round	4th round	External case studies
Paper I					
Paper II					
Paper III					
Paper IV					
Paper V					

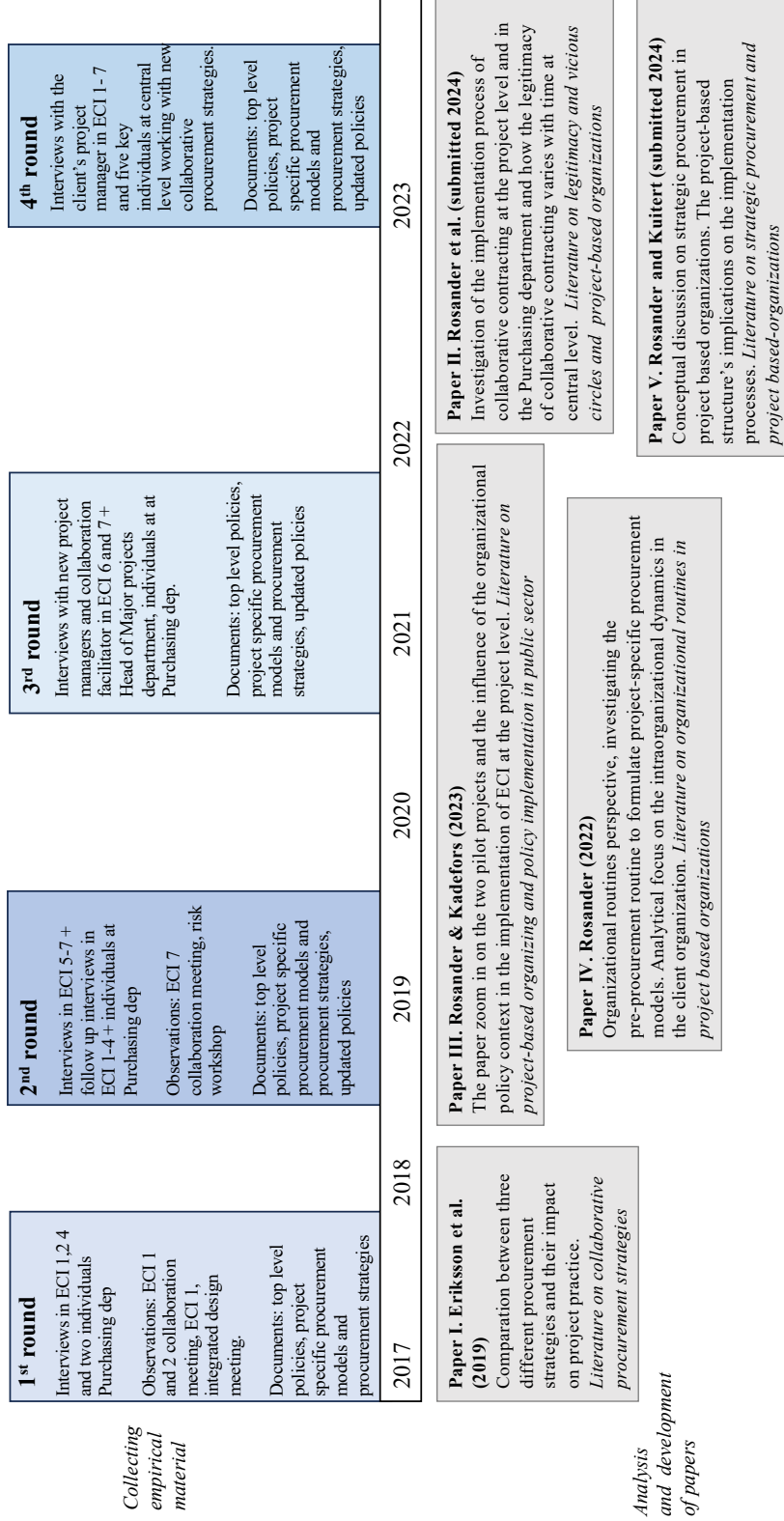


Figure 3. Illustration of the research process, timeline of data collection, analysis, development and important literature for each of the five papers.

4.5 Reflections on research quality and limitations

The quality of qualitative research is generally considered to build on trustworthiness, including the criteria of credibility, dependability, transferability and confirmability (Denzin and Lincoln, 2018). However, to conduct the research project as a case study should be based on the research aim to understand the actual project practices and experiences in its context. Therefore, the generalizability of this method lays not in a large number of observations. Instead, the fact that the researcher engages fully in one context to get a deep understanding of all the complexity, contradictions and surprising aspects of one case is what actually gives the opportunity to theorize and challenge and developed theory (Ketokivi and Choi, 2014, Martinsuo and Huemann, 2021). Therefore, transferability and confirmability can be obtained through providing a thick case description, including original statements and retaining the ambiguity of a case (Siggelkow, 2007). This gives the readers the opportunity to apply the presented results in other contexts and understand the researcher's interpretations. However, to give an extensive case description is difficult in article format, and from that perspective, there could have been benefits to write this thesis as a monography. Yet, as each paper zooms in on one particular aspect of the case, I do hope that this thesis as a whole can serve as such a 'thick' case description.

Additionally, to increase credibility, the case triangulates between different types of empirical material (Stake, 1995). Further, empirical material was triangulated by using other sources of information, such as documents, or asking other project members how they remembered specific events (Brunet *et al.*, 2021). Additionally, as interviews were conducted in several stages, it was possible to pick up issues raised by other respondents, or the interviewee in previous interviews as another form of triangulation.

Member-checking (e.g., let the respondents react to their own statements after an interview etc.) can increase the credibility and dependability of the case, in addition to providing a possibility for participants to reflect on the material and nuance their statements (Candela, 2019). For each project, a

description/narrative based on all interviews, observations, and project-specific documents were developed as an initial analysis (Miles and Huberman, 1994). These descriptions were based on chronology, from how the client organization produced the project-specific procurement models (which is the main focus in Paper IV), to the experience and implementation of ECI (focus in Paper I and III). The case descriptions were sent out (in 2019) to key interviewees in each project to increase the research transparency. Moreover, it also gave the participants an opportunity to comment on the project descriptions, which was a way to triangulate my own interpretations of the interview material to add robustness of the analysis and a way for the project members to reflect and clarify or nuance their own statements (Candela, 2019). These descriptions were also part of a research report to the Swedish Transport Administration. In 2023, similarly an overview of the whole case study was written as a final report to the Swedish Transport Administration and was likewise sent to the individuals in the research project for them to get the opportunity to react on the descriptions and quotations.

The case boundaries span over several projects and possibly could instead have been to follow one of the projects in the case more in depth, and study detailed daily practices of the interorganizational collaboration, to provide insight on how collaborative practices are established. However, this would have eliminated the opportunity to illustrate the collaborative contracting development process based on experience in several projects, which is rare in the current literature on collaborative contracting. The case with its current boundaries provides a more extensive, longitudinal cross-project study, which is also called for in project studies (Bakker *et al.*, 2016). Based on the current lack of cross-project case studies in the literature, I chose to focus on the aggregated experiences from the projects, at the expense of the in-depth knowledge of the specific projects.

Finally, the research project in which this doctoral study was conducted is partly financed by the Swedish Transport Administration. This has increased accessibility to members in the projects, but can also be viewed as bias. The origin of the overarching research project was based on an interest in formal

contract arrangements and collaborative contracting, with a connection to the Purchasing department. However, since most interviews and observations have been conducted at the projects, it has been valuable to get the 'inside perspective' from the Purchasing department, to level the emphasis on project experience in the empirical material.

5 Summary of appended papers

This chapter summarizes the five appended papers of the compilation thesis. For each paper, the background and purpose of the paper as well as method and findings are provided.

Paper	Order of authors	Author's contribution
I.	Eriksson, P. E., Volker, L., Kadefors, A., Lingegård, S., Larsson, J. & Rosander, L.	Eriksson was the lead author. The initial idea was developed collaboratively between Eriksson, Volker, and Kadefors. Eriksson and Volker led the work; planning the paper, performing the analysis and literature review, and most of the writing. Rosander contributed with empirical material and specific analysis of the two Swedish ECI-projects.
II.	Rosander, L. Kadefors, A. & Eriksson, P. E.	Rosander was the lead author. Rosander initiated the paper, gathered the empirical material, analyzed the material and wrote the paper. Kadefors contributed with conceptual discussions and writing parts of the paper together with Rosander. Eriksson contributed with valuable ideas and editing.
III.	Rosander, L. & Kadefors, A.	Rosander was the lead author and gathered the empirical material partly in collaboration with Kadefors. Rosander initiated the paper, formulated the idea, conducted the analysis and did most of the writing. Kadefors contributed with conceptual discussions, editing, and writing parts of the paper together with Rosander.
IV.	Rosander, L.	As a single author, Rosander came up with the idea, conceived the study, gathered empirical material, analyzed, and wrote the paper. Kadefors, Hedborg, and Svensson contributed with valuable comments and ideas.
V.	Rosander L. & Kuitert L.	Rosander was the lead author, planned the paper and did most of the writing. The formulation of the initial idea, the gathering of empirical material, the thematic analysis, and writing the literature review were collaborative efforts. Kuitert gathered all the data, analyzed, and wrote the material for the second case.

5.1 Paper I: Collaborative procurement strategies for infrastructure projects: a multiple-case study

Background: Clients are increasingly including different forms of collaborative procurement models in their procurement activities. Paper I compares ten infrastructure projects applying four different types of integrating procurement strategies, namely: Design-Build (DB), Design-Build-Finance-Maintenance (DBFM), Design-Build-Maintenance (DBM) and a two-stage Early Contractor Involvement (ECI). The purpose of the paper is to investigate the link between procurement strategies and project performance, hence, how each strategy may improve efficiency and influence the level of innovation. The study analyzes the scope of inclusion on the supplier side in the projects (Eriksson, 2015), as well as learning processes and formalization of the collaboration between parties Eriksson (2017) in the implementation processes.

Methods: the paper builds on a comparative study of ten infrastructure projects in the Netherlands and Sweden (road and railroad). A multiple case study method was applied to capture the complexity of the ten projects: two DB projects, two ECI projects (namely ECI 1 and 2 in the case study presented in this thesis), three DBM, and three DBFM.

Findings and contributions: All procurement strategies were adopted to increase innovation and efficiency in the project. However, the procurement strategies vary regarding whether or not the contractor is included in the design phase, and whether the maintenance and finance responsibility of the road or railroad is included in the contract. The study pinpoints the many different strategies currently applied by large European public infrastructure clients to increase innovation and efficiency, and the difficulties in comparing their outcome. Furthermore, the findings suggest that all actors saw significant opportunities in collaboration between different roles and levels and in including contractors earlier than in traditional contracts. However, it seems that it is difficult to achieve the full potential of the procurement strategies, and achieve the expected results. Even though innovation and efficiency were perceived to be enhanced in many projects, the study highlights some contextual, cultural, and legal limitations. For example, legal decisions in the

planning phase decreased the flexibility in design solutions proposed by the contractor, and time and financial pressure made the contractors stick with well-known solutions. The study contributes to the ongoing debate in the field of construction management on the effect of procurement strategies on project performance and learning in client organizations (Volker and Hoezen, 2017). The key contribution of the paper is to illustrate that contractual incentives to increase innovation and efficiency are a complex matter that cannot be easily transferred between contexts, which also spurred the research focus in Paper III. The study further shows how the ten projects experience contradictory implementation effects that were hard to evaluate beforehand, (e.g., that contractual incentives created the wrong driving forces). This phenomenon implies that in order for repeat public clients to reach the full potential of new collaborative contracting models, it is important to keep a long-term perspective and refine and learn from initial experiences.

5.2 Paper II: Never-ending cycles of collaborative contracting initiatives – dynamics of legitimacy in a public client organization

Background: Public clients still struggle with the implementation of new initiatives and the institutionalization of new innovative procurement models (cf. Bresnen and Lennie 2023). Yet, as public infrastructure clients are often permanent organizations that frequently procure infrastructure project of various sizes, there should be opportunities to learn between projects and refine the procurement and governance models over time. The purpose of this paper was to explore the theoretical and practical question of why many initiatives by public clients to introduce collaborative contracting struggle to become institutionalized. Theories on legitimacy in public organizations (Brunsson, 2002), and project-based settings (Hetemi *et al.*, 2020), were applied to understand how legitimacy demands within and between projects, the permanent organization, and the sector level, influence development and dissemination of collaborative contracting practices.

Methods: The paper builds on empirical material from the longitudinal case study presented in the thesis, including empirical material collected in ECI 1-7, as well as at the central level, over seven years. The material was analyzed using a temporal-bracketing method (Langley, 1999) to establish six periods in the development process, also including initiatives preceding the case study.

Findings and contributions: During the implementation process of the ECI/high collaboration framework, the public client officers at different levels need to balance between different forms of legitimacy work over the years. The need to build legitimacy is associated with the different values and goals at project, central, and political levels, respectively. The discussion in Paper II raises important questions regarding which structures need to be in place for new collaborative contracting models to become an institutionalized practice used widely in the sector. Furthermore, the findings of the article emphasize how the demands of legitimacy in the permanent organization can hamper the long-term building of client capabilities at the project level. The paper highlights the dynamic relationship between the central and project levels in a

project-based organization when attempting to change project practices. When implementing the ECI model, at the project level, practices continued to be refined and developed as the projects progressed, while at the central level, the initiative was put on hold based on early implementation issues in the first ECI projects.

Findings thus illustrate the development process at multiple levels, and show how collaborative procurement initiatives are repeatedly prepared, launched, questioned, put on hold, and then relaunched under a different name. Thus, in line with Brunsson and Olsen (1993), the organization finds itself in never-ending cycle of reform – whereas none of the reforms fundamentally change operations. As such, the findings add to the current debate in project studies on the interface between the permanent and the temporary in project-based organizations (Sydow and Windeler, 2020), by challenging the common view that projects are temporary and the central levels constitute permanent structures.

5.3 Paper III: Implementing relational contracting in a public client organization: the influence of policy clashes, resources, and project autonomy.

Background: The aim of the paper was to explore the implementation process of a novel collaborative procurement strategy in two large infrastructure projects. The analysis takes a policy implementation perspective, adding to traditional project-centric explanatory models in the construction management literature (Engebø *et al.*, 2020). An analytical framework including three dimensions of policy implementation was developed to guide the analysis, namely: policy ambiguity and policy clashes, managerial attention and resources, and organizational structure. As it covers policy implementation on different organizational levels, the framework increases the understanding of how the policy context and other features of the permanent organization influence practices at project level.

Methods: The paper builds on empirical material from two projects (ECI 1 and 2) in a large infrastructure program. The material includes interviews with clients, contractors and consultants (technical and management), document analysis and complementary observations.

Findings and contributions: Many implementation problems were similar in the two projects. Specific project issues were, for example, problems with managing open-book accounting, coordinating responsibility in the design process and creating a joint process to agree on the target costs. Applying a policy implementation lens highlighted three structural features of the implementation processes that were found to make it harder to develop new practices. First, findings showed that while the projects did apply a new ECI model in their procurement, it was ambiguous and vague, and specific issues on how collaboration would actually be organized were left to the project level to solve. For example, many in the client organization found that the new ECI model clashed with the existing 'pure client' policy, a general procurement policy in the Swedish Transport Administration associated with a more distant relationship with contractors. Second, the lack of structural support and additional resources to facilitate implementation caused confusion and

ambiguity in the implementation process (see, for example, Matland, 1995). As such, the individual attitudes of the project managers became crucial in developing practices at the project level, and the findings show that the collaboration between the parties was significantly better in one of the projects.

The lack of preparation also applies to the contractor's organization, and both sides had a difficult time defining their roles in the projects and developing efficient joint practices. Based on this result, the organizational routines associated with the ECI model was investigated more in detail in Paper IV. Finally, the paper contributes to the understanding of how project autonomy operates in project-based organizations. While the projects experienced many difficulties, it was still assumed that these issues would be solved at project level. Similar to findings in, for example, Hartmann *et al.* (2014), the study shows a strong normative importance of the notion of project autonomy, while, in fact, the policy, resources, and structure of decision making in the permanent organization had significant influence on project matters and the project members' understanding of the procurement strategy.

5.4 Paper IV: Same same but different: dynamics of a pre-procurement routine and its influence on relational contracting models

Background: Building on literature in the construction management field concerned with the institutionalization of collaborative contracting practices, the paper aims to investigate how intra-organizational routines influence the developments of collaborative contracting within the construction sector (Bygballe *et al.*, 2021). The purpose of the paper was thus to explore and understand a specific pre-procurement routine in a client organization. The routine was analyzed based on the ‘routine dynamics’ perspective, viewing organizational routines as being flexible (Howard-Grenville, 2005), in contrast to traditional views on routines as prescriptive and static.

Methods: The paper is based on empirical material from the client side in ECI 1-7, and from the central level (e.g., at the Purchasing department). The studied ‘pre-procurement routine’ concerns the processes of formulating and deciding on project-specific procurement models. The empirical material include individual accounts of how a pre-procurement routine was enacted and how it is described in formal documents. A sequential analysis was performed on the empirical material to establish a schematic representation of the enacted routine. Additionally, the empirical material was thematically analyzed to investigate the relationship between consistency and stability in the routine.

Findings and contributions: The study show how the formalized routine - as developed in the Purchasing department, and the routine as enacted by project members are not similar and fundamental steps in the enacted routine are informal. The official decisions to go ahead with a procurement are made in the permanent organization, by a procurement board. To get the approval from the procurement board, the project needed to adhere to, for example, specific formulations originating in the centralized procurement strategy proposed by the Purchasing department. However, many of the actions that were taken in the pre-procurement routine aim at legitimizing the project-level decisions to the permanent organization (e.g., show that the project management level have

collected experiences from similar projects and consulted legal experts) so that the projects actually could go on with customized procurement documents.

The routine enactment allowed a balance between a goal of centralization as represented by the Purchasing department, and customization at the project level (cf. Salvato and Rerup, 2018). However, this flexibility resulted in a difference in routine output, and all projects varied in their adoption of the collaborative contracting framework. In addition, the findings suggest that learning between projects from previous experiences is central for the individuals enacting the routine, and important to legitimize the project level choices. Nonetheless, this learning processes were not part of the formalized routine provided by the Purchasing department. Although flexibility was appreciated by the individuals in the study, the variations between the contracts hamper long-term predictability of the public client. The paper adds to the current discussion on the role of organizational routines in temporary organizing, in particular how flexible routines may impact stability and change processes in project-based organizations.

5.5 Paper V: Tensions between Values, Autonomy, and Actors in project-based organizing - Can procurement in the public infrastructure sector be strategic?

Background: Public procurement activities are increasingly being attributed a strategic function and used as a tool to achieve policy goals (Grandia and Meehan, 2017). The aim of this paper was to investigate the impact that project-based organizing and project practices have on strategic procurement initiatives in the public sector.

Methods: By juxtaposing literature on strategic procurement from public administration with literature on the characteristics of project-based organizing, we propose an analytical framework emphasizing the impact of *value alignment*, *project autonomy* and involved *actors* when pursuing strategic procurement in public project-based organizations. Two cases in the Swedish and Dutch infrastructure sector, where strategic procurement has been adopted by public clients in the project-based infrastructure sector, are analyzed. The two cases build on interviews, document studies, and observations.

Findings and contributions: The study presents three tensions that arise when project-based organizations implement strategic procurement. First, the findings illustrate how alignment of value between the policy level and actual project procurement criteria is difficult to achieve, but essential for procurement to be a strategic activity. Projects are under pressure to complete a specific task (often within a very strict time and budget frame). If the strategic goals are not easily translated to match other project goals, the strategic goals will not be prioritized. Second, project autonomy is a core element of many project-based organizations, as the organizational structure implies that much of the decision rights lie with the project manager, together with institutionalized roles that support such decentralization. Therefore, many project managers act as gatekeepers when it comes to including other values in their project procurement. Third, in a project-based organization, procurement is not carried out by a specific procurement profession; instead, it is often designed by the project management team together with members of the

Purchasing department. In addition, other project stakeholders can indirectly be part of the procurement process, since projects, as an organizational form, is a way to combine actors from both the public and the private side. The study contributes to the literature on public administration and public procurement practices, first by showing the impact that the increasingly strategic position of procurement has on individuals involved in activities (Öjehag-Pettersson and Granberg, 2019). In particular, the paper contributes to advancing the understanding of how different organizational structures (Döhler, 2020) may influence public value delivery and how the policy goals included in strategic procurement must be adapted to the organization in which it is implemented to be of any real value.

6 Discussion

6.1 The implementation of a new collaborative procurement strategy

The first research question asked: *How does the implementation of a new collaborative procurement strategy in a public project-based client organization develop over time?* The implementation process had three distinct characteristics which will be discussed before moving to the following research questions.

6.1.1 A bottom-up initiative

As illustrated in the comparative study in Paper I, there is a trend among infrastructure clients to engage in different forms of collaborative contracting to increase the opportunities for innovation and flexible solutions in complex projects (Lahdenperä, 2012, Brunet and Jobidon, 2024). The momentum for collaborative contracting in the studied case came from multiple directions; both from inhouse project managers in the Swedish Transport Administration, and from market representatives. Illustrated in Paper III and Paper IV, collaborative contracting, in the form of Early Contractor Involvement (ECI), was first applied in two large infrastructure projects (ECI 1 and 2) where it had been proposed by contractors in the market dialogues prior to the procurement. Moreover, collaborative contracting was also requested in a sector-wide forum (Infraforum), hosted by the Swedish Transport Administration. The request for collaborative contracting was in part a reaction to the influential top-level policy ‘pure client’, which was introduced in 2010 when the Swedish Transport Administration was formed, and had driven the Transport Administration towards an arms-length relationship with contractors. Some project managers within the Swedish Transport Administration were questioning the ‘pure client’ policy, as they wanted to apply collaborative procurement strategies in their projects.

Paper III demonstrates that while ECI 1 and 2 were sanctioned by the top level (procurement board) as forms of ‘pilot projects’, the formulation of the ECI model applied in these two first projects was still a bottom-up initiative without

strong connections to the top-management of the agency, or to the Purchasing department. Instead, the Purchasing department simultaneously developed a new general procurement strategy and the framework for High collaboration on request by the Infraforum. During the development of the framework, the Purchasing department had discussions in Infraforum and with associated industry representatives, but less with the projects within their own organization.

Both the pilot projects (ECI 1 and 2) and the formal High collaboration framework were inspired by projects in the UK (such as High Speed 2) and suggested a two-stage contracting model with associated collaborative activities. Yet, the bottom-up features in the formulation of the new collaborative procurement strategy for the two pilot projects, ECI 1 and 2, contributed to a vagueness in the applied ECI model. The ambiguity that the project members faced trying to implement the ECI model resembles much of the conclusions by Johansson (2012), who illustrates the demanding role of public officers in infrastructure agencies, where a large part of the work is dedicated to negotiating between different values with various actor-groups. The findings in Paper I, III and V support these conclusions and illustrate how implementation of collaborate contracting is similar to other forms of policy implementation described by Matland (1995), illustrating that an ambiguous policy that does not align with existing practices will vary more in the implementation. The 'pure client' policy, on the other hand, was more authoritatively introduced by top-level management and more similarly understood and enacted in the organization.

One contract, ECI 7, was terminated after stage 1, largely due to delayed legal approval of construction. The prolonged design stage in ECI 7 much influenced the contractor's choice to exit the contract, as it did not align with their overarching business model to stay in design (with hourly rates as consultants) for such a long period. Windeler and Sydow (2001), in their study on change in the project-based TV sector, conclude that one influential actor can induce change in practices; however, the results are dependent on the other actor's adaptation and current practices. Relating this to the studied case, it is clear

that in order for the ECI model to endure in the Swedish infrastructure sector, the contractor organizations may need to adjust their business models to be able to engage earlier in the project life cycle. However, as the construction sector is characterized as being decoupled (Dubois and Gadde, 2002), this case study illustrates the importance of client predictability, over time, for contractors to adjust their practices to future tenders and projects (Kuitert *et al.*, 2019).

6.1.2 Variation in adoption of the collaborative procurement strategy

There is a general lack of consensus about the implications of different collaborative procurement strategies in practice (Mosey, 2019). The case here is no exception, and there was not any consistent view of what collaborative contracting actually meant in the Swedish Transport Administration, during the whole case study period. The High collaboration framework was largely developed by two public officers, working only part-time with the issue, and it was short and very general. Thus, when subsequent projects applied ECI using the formal framework they still had to finalize the details and develop their own project processes, for example regarding how to manage open book accounting and joint design processes.

The structured learning from the experiences of ECI/High collaboration was very limited, and there were not any formal centralized learning activities. For example, there was nothing similar to a 'Project Management Office' (Pemsel and Wiewiora, 2013) or other integrating mechanisms that can be seen in other project-based organizations. As described in Paper III, this lack of resources further reflects the low priority that collaborative procurement had in the organization (March, 1994, Thornton and Ocasio, 2008). Findings in Paper IV show how experiences instead were shared through informal contact between individuals in the projects. Thus, the study supports the conclusions of, for example, Hartmann and Dorée (2015), emphasizing that learning happens through social activities. Yet, without an established set of collaborate contracting roles, routines and practices that could be refined (Söderlund *et al.*, 2008), this informal social learning led to variations when integrating such experiences into subsequent projects' procurement models.

As described in Paper IV, the finalization of the project-specific procurement model was completed through a 'pre-procurement routine' at the project level. This routine was highly flexible and the adoption of the High Collaboration framework varied. Still, findings in Paper IV, and partly Paper II, show how contract formulations, procurement criteria and collaboration activities were mimicked from other projects. Thereby, findings support the suggestions by Söderlund *et al.* (2008), and Bygballe *et al.* (2021), stressing that organizational routines in project-based settings have a more stabilizing effect than organizational routines in other types of organizations.

Nevertheless, the findings in Paper IV equally indicate that organizational routines may have a balancing role in managing goal conflicts between the permanent organization and the project level. Findings expose a tension between different parts of the organization, where the project level often explicitly and implicitly opposes too much standardization and centralization of procurement practices. Project managers generally wanted to customize the procurement strategy to fit their own ideas, while central levels were more focused on adjusting the project level procurements to fit the terminology of the centralized procurement strategies. As Salvato and Rerup (2018) show, routines may be a constructive way to play out organizational goals (e.g., balancing artistic ambitions with cost). In the case of the pre-procurement routine, this balancing act instead legitimized varying practices and variations, in effect making the client organization less predictable for the contractors. While this type of autonomy and gatekeeper role of the project manager is commonly acknowledged in project-based settings (Bresnen *et al.*, 2005, Bredin and Söderlund, 2011), the findings in Paper II show the role organizational routines play in safeguarding this autonomy of the project managers and conserve their individual project practices.

6.1.3 Cycles of collaborative contracting initiatives

During 2016-2017, four additional projects were procured applying the official High collaboration framework. During this period, ECI 1, 2 and 3 had progressed and were approaching the end of stage 1, where they (especially ECI 1 and 2) faced conflicts regarding the level of the target cost. This spurred a criticism and uncertainty at central levels, where the ECI model was questioned, especially by the newly appointed Head of the Major Projects operational department, who feared that the projects were becoming more expensive than with more traditional procurement strategies. As such, the ECI model developed a 'bad reputation', and the public officer in the Purchasing department, developing the High collaboration framework, had to defend the framework against the 'purchasing board' (a group of managers that approves larger procurements) on several occasions. Consequently, in 2020, ECI/High collaboration was unofficially put on hold, and no new projects were procured using the collaborative procurement strategy. This development adds to, and partly explains, the findings by Plantinga *et al.* (2020b), showing how similar initiatives in a client organization in the Netherlands experience 'failure traps'; where initial experiences, of individual projects, determine the continuation or termination of certain procurement strategies.

Regardless of the rejection of the ECI model in the Purchasing department, the push for collaborative procurement strategies from the market remained. On top of much external criticism regarding cost overruns in several other (non-ECI) projects, the Swedish Transport Administration continuously struggles with bad relationships with contractors. At the sector level, contractor firms and industry associations continuously requested more collaborative contracts for large and complex projects. Consequently, as described in Paper II, ensuing increasingly low figures in a supplier satisfaction survey in 2022, a top-level initiative by the Director-General requested that the central level develop a new collaborative procurement strategy. See Figure 4 for a schematic summary and illustration of the development processes at project and at the central level.

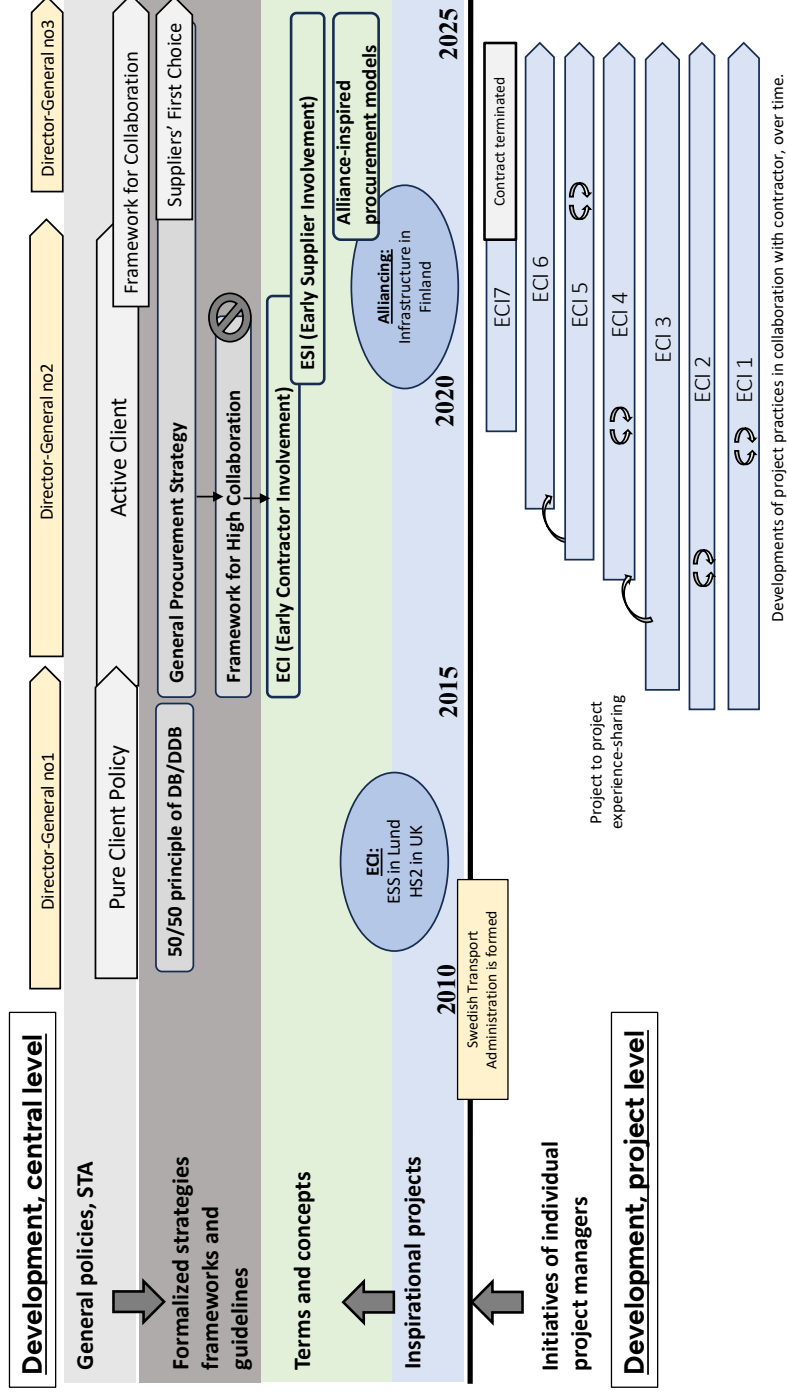


Figure 4. Timeline of the implementation processes and illustration of the developments at project- and central level. General policies in the Swedish Transport Administration, inspirational projects and strategies and concepts applied for collaborative contracting, over the years 2015-2024, are included.

As illustrated in Paper I, clients in other countries were increasingly applying non-traditional procurement strategies. One prominent example of this, that was articulated in the Swedish Transport Administration during this time was Finland (Aaltonen and Turkulainen, 2022). Thus, the new initiative was inspired by the successful implementation of alliancing contracts by the Finnish Transport Administration. The ‘alliance-initiative’ was therefore intentionally not associated with ECI and High collaboration, as they had been more of bottom-up initiatives in comparison. Even though this new initiative did have more support from central levels, the outcome of the new initiative was a number of ‘pilot projects’ where the project managers actively wanted to apply this new procurement strategy. These oscillating effects are described more in detail in Paper II.

Moreover, many of the individuals involved in the ECI projects were disappointed with the permanent organization’s low interest in the experiences in the ongoing ECI projects, and unhappy with the rapid turn to a new terminology for similar procurement strategies. In contrast to the ‘bad reputation’ that ECI had gained at central level, the experiences at project level had improved over time. In 2023, during the final round of interviews, the project managers were largely satisfied with the ECI model applied in their specific project. Each project was somewhat isolated in the development of project routines and practices, such as processes to handle open book accounting, establish collaborative purchasing routines, and negotiating other contractual issues.

However, over time, in the individual projects these practices were refined collectively with the contractors who equally had to develop new capabilities at their side. Thereby, at project level, the ECI model outlasted the lifecycle of the ‘High collaboration’-initiative in the Purchasing department. Brookes *et al.* (2017), similarly show that there are multiple temporalities within a mega project. The mega project, in itself, rather becomes a more or less permanent context in which different temporalities are embedded. However, in contrast to Brookes *et al.* (2017) this case articulates that while the multiple timeframes within a large project are important to acknowledge, the differences in

timeframes between the projects and the permanent organization are equally important to understand. Building on the conclusions by Grabher (2004), Sydow and Windeler (2020) and (Kadefors, 1995), the findings in Paper II instead show that perhaps it is more important to emphasize how roles and practices at project level are stabilizing – more permanent - features in project-based sectors.

6.2 The influence of structural and cultural project autonomy

The second research question narrowed down on the project-based structure: *How are the implementation processes influenced by the characteristics of the project-based structure of the client organization?*

Project level autonomy and legitimacy associated with professional roles is a well-established feature of the project-based construction industry (Kadefors, 1995). Willems *et al.* (2020) state that project autonomy differs between projects and is actively shaped by the individuals in the projects. One discovery, aggregating the findings of Paper II, III, IV and V, is that project autonomy has had a large impact on the implementation process. However, the autonomy in the studied case projects has two sides which are sometimes contradictory. On the one hand, project autonomy shapes the project's possibilities to make procurement decisions in a way that suits the project manager (Willems *et al.*, 2020). The project autonomy thus causes variations between projects. In effect, variations were visible already between ECI 1 and 2 in the same program. This resonates well with the recent findings of Bresnen and Lennie (2023) showing how the decision to introduce a best-practice model for collaboration in a major infrastructure program in the UK resulted in a differentiation of the model based on the project-specific prioritizations of different aspects of the collaboration. In the design of the project-specific procurement models, in the case studied here, the most established project managers were allowed to adjust the framework more freely. This highlights the importance of position in the organization to enact agency (Howard-Grenville, 2005).

On the other hand, since top management did not endorse the new collaborative procurement strategy, there was a lack of resources, and many technical and

practical issues needed to be resolved at the project level. As such, the projects were still highly restricted by the permanent organization, as discussed in Paper IV. Relating the findings to the ideas proposed by Brady and Davies (2004) on the different ways of learning in project-based organizations, the situation of these ECI-projects could be described as ‘vanguard projects’ managed within a part of the organization intended to manage similar and repetitive projects. This put the project members in a difficult situation, where they did not have enough freedom to really develop new practices, but neither enough structure and centralization to benefit from economies of repetition and organization-led learning.

Noteworthy, many in the organization see the development of collaborative practices as solely a project activity and question how the central level could contribute. The cultural inclination to privilege projects in the whole organization limits the role central level can have in learning and refinement of practices as the long-term development is not prioritized by anyone in the organization. This can be compared to Davies et al. (2018), where the permanent functions take on larger responsibility in refining contracts over time. The findings in Papers II and III resonate well with the study by Hartmann *et al.* (2014), comparing two large public clients in the Netherlands and the UK. The development of a framework for High collaboration, in the Purchasing department was only implicitly sanctioned by the top level and not a Director-General initiative. Furthermore, it was not associated with additional resources or endorsement. As discussed in the papers, this lack of resources and attention hampered the implementation processes, as designing and agreeing on new project collaborative practices took a lot of time and effort of the project members, at both the contractor and client sides.

To summarize, the project-based character of the client organization influences the implementation processes. First, in the development and initiation of new procurement strategies. Second, it manifests itself in the strong project autonomy and strong professional roles. Still, the project had to strike a balance between the decentralized project autonomy and the more bureaucratic

regulatory context with multiple existing and contradicting policies and lack of resources and top-level attention.

6.3 Legitimacy and conflicting values in political organizations

The third research question was: *How are the implementation processes influenced by the public character of the client organization?*

Being a political organization implies that the organization as a whole adheres to different types of goals, causing shifting legitimacy demands in different parts of the organization. In line with the discussion by Schapper *et al.* (2006), on inconsistent values in public procurement, the top-level policies in the Swedish Transport Administration emphasized that ‘value for money’ and the ‘bottom up’ initiatives of ECI/High collaboration were consequently not prioritized when it appeared to increase project cost. When the legitimacy of the ECI model was questioned, the Head of the Major Projects operational department, as well as members of the Purchasing department swiftly abandoned the procurement strategy (Brunsson and Olsen, 1993, Plantinga *et al.*, 2020b). Brunsson and Olsen (1993) showed that many public organizations were in a constant reform due to inconsistent legitimacy and normative demands in the organization’s environment. According to (Ashforth and Gibbs, 1990, Zuzul and Edmondson, 2016), ad hoc legitimacy work can act to hamper the long-term learning in the organization. The hesitation towards centralization and standardization at the project level (Bredin and Söderlund, 2011), increased even more with the rapid changes in procurement strategies at central level.

External legitimacy work is important for all organizations, and for public organizations in particular (March and Olsen, 1989, Johansson, 2012). Here, external legitimacy for the Swedish Transport Administration in the infrastructure sector was thus prioritized over the internal relationships between the projects and the permanent organization. Findings in Paper III similarly illustrate that the benchmarking and market dialogues in ECI 1 and 2 acted as a way to legitimize the choices to use an ECI model in the two pilot projects.

Discussions of legitimacy in projects have often focused on the external (political) legitimacy (Hetemi *et al.*, 2020) of a single project (Clegg *et al.*, 2002, Aaltonen, 2013). Yet, the aggregated findings of Paper II, III IV and V illustrate the importance of *internal* legitimacy in the implementation process. First, findings in Paper IV illustrate how the project managers had to legitimize the choices made in the project-specific procurement models. When enacting the 'pre-procurement routine', there was a learning phase in which project managers learned from the experiences of other projects. This phase, which included both mimicking previous projects (Miterev *et al.*, 2017a) and addressing previous negative experiences, was important to build legitimacy for the project internally, and subsequently get approval from the procurement board for the project-specific procurement model.

In essence, the public character of the organization increased the legitimacy demands on the Purchasing department, and the refinement and development of the High collaboration framework was not their priority. As central levels did not focus attention on project experiences, the *intra*-organizational legitimacy between the central and project levels decreased, thereby further increasing the distance between the 'talking' part of the Swedish Transport Administration from the 'action' (Brunsson, 2002). Furthermore, the Swedish public sector is in general characterized by strong decentralization (Hall, 2015). In effect, as discussed in 6.2, the publicness of the organization seems to have made the projects even more decoupled from the permanent organization than projects in a private project-based organization would have been.

7 Conclusions

Based on one longitudinal case study, the five scientific papers illustrate the accumulated process over time of how new practices develop (or not) in public project-based organizations. The theoretical and managerial contributions of the study are presented in the final chapter below.

In this thesis, the case of implementing a collaborative procurement strategy in the Swedish Transport Administration has been studied over the course of seven years. The purpose of the thesis was to *increase the understanding of how new organizational practices develop at different levels in public project-based organizations*. The findings of the thesis illustrate *how* the implementation process evolved over time and how the implementation processes within the permanent organization and at the project level diverged. In the projects, initial practical issues were influenced by policy clashes and a lack of resources to develop new roles and routines for the projects. However, many of the issues at the project level were resolved over time with the contracting parties. In the permanent organization, another trajectory was followed. While initiating and developing a collaborative procurement strategy, no central resources were applied to refine and learn from the implementation at project level, resulting in series of different initiatives.

The aggregated findings of the appended papers show how the adhocracy-like, project-based operational parts of the bureaucratic public infrastructure organizations create tensions which affect the individuals involved in the implementation process and restrain the development of shared practices in different ways. Members of bureaucratic organizations are expected to follow its rules and principles, while project members are more often directed by the project's specific need or professionalized roles in the sector.

By shifting focus from the project and instead addressing the context in which the projects are embedded, the findings show how the collaborative procurement strategy clashed with existing policy. This subsequently influenced how the individuals interpreted the strategy and translated it into

project practice. As such, legitimacy has been found to be an important factor shaping the implementation. Early negative experiences resulted in the discontinuation of the implementation of the collaborative procurement strategies in new projects, and thus hampered developments of long-term project capabilities. Finally, the view of projects as autonomous, influenced the individuals at both the project level and in the permanent functions. This made the project independent in some aspects, yet the projects depended on formal and hierarchical policy decisions in the permanent organization. To generalize, one of the explanations for a lack of broader institutionalization of collaborative contracting in the infrastructure sector is this tension in integrating the two rule systems of bureaucratic organizing and project-based operations with its associated responsibilities and role division.

7.1 Contribution to research

The results of the study contribute to three domains in the literature, first to the construction management literature and the development, implementation and institutionalization of collaborative procurement strategies. Second, this thesis contributes to project studies by showing in detail how *public* project-based organization and its specific characteristics influence developments of new interorganizational practices. Finally, the thesis contributes to the public administration literature concerned with the influence of organizational structure on public activities in general, and specifically procurement practices.

The thesis contributes to the construction management literature as its results shed light on the dynamics behind the large variations seen between adoptions of collaborative procurement strategies (Walker and Lloyd-Walker, 2015, Brunet and Jobidon, 2024), even within the same organization (Bresnen and Lennie, 2023). The findings highlight the importance of the intra-organizational context and how contracting framework/models/strategies that are conflicting with other policies, may result in vaguely defined collaborative models which, in turn, cause variations in practices between projects. Not least, the longitudinal character of the study further adds to construction management literature by illustrating how the long-term developments at organizational level relates to the developments at project level. This is a context

perspective which has been lacking in the literature on collaborative contracting (Bresnen and Marshall, 2000, Engebø *et al.*, 2020).

Contributions are also made to project studies. The five appended papers, together with the discussion, aim to develop the understanding of *public* project-based organizations further (Mahura and Birollo, 2021). For example, by revealing how the temporality of policy decisions in public project-based organization may contrast the traditional views on temporary organizing (cf. Brookes *et al.*, 2017, Sydow and Braun, 2018). Shifting legitimacy (Hetemi *et al.*, 2020) is additionally shown to result in circles of initiatives of new collaborative procurement strategies developed at central level, while projects procured with previous strategies continue need develop the 'old' procurement strategy independently without support from central functions. This is similar to the 'constant reforming' organization described by (Brunsson and Olsen, 1993), emphasizing the significance of acknowledging the public aspect of these infrastructure clients. Further, by focusing on the intra-organizational processes and routines at different levels (Bygballe *et al.*, 2021), the thesis illustrates how conflicting goals between the permanent organization and the projects influences the institutionalization of collaborative contracting. In this particular case, the enactments of organizational procurement routines spurred variation in the adoption and design of the collaborative contracting model.

Over time, practices did develop at project level but had trouble spreading because of a lack of long-term strategy at central level. While such learning deficiencies are common in project-based organizations (Grabher, 2004), they are most often explained by the high project autonomy, while the influence of inconsistent norms and legitimacy demands in the permanent organization has been less addressed. Adopting a longitudinal method and process perspective in project studies (Bakker *et al.*, 2016, Brunet *et al.*, 2021) is vital, as these type of development processes becomes visible over time.

Finally, the thesis contributes to the public administration literature by revealing in detail how the project-based structure influences strategic procurement activities in the public sector: Alignment of values, autonomy of

projects and the number of actors involved in procurement processes are all shown to influence the way strategic goals can be achieved when project procurement is used as a tool for policy implementation. The project-based structure is not always aligned with the ‘top-level’ priorities. This thesis enriches the public procurement literature by clearly showing that this independence, or autonomy, of the project is an important feature of public procurement activities in infrastructure (and other project-based parts of the public sector).

As such, the study contributes to the stream of research covering policy implementation, specifically on public procurement, showing how organizational structure matters (Glas *et al.*, 2017, Döhler, 2020). Furthermore, it illustrates how the individuals involved in procurement practices are essential in shaping the implementations of policy goals or adoption of procurement strategies (Johansson, 2012, Hupe and Hill, 2016, Öjehag-Pettersson and Granberg, 2019). Different professions and their role in the procurement processes must be recognized when studying public procurement.

7.2 Managerial implications

Three main managerial contributions may be derived from this research. Firstly, it is imperative to understand the implementation context. In the more successful implementations of collaborative procurement strategies, for example in Finland, the initiatives have been endorsed by top-level management in the key organizations, and preceded by a substantial period of coordination and preparation within the client organization as well as among other organizations in the sector. However, other factors, such as size of the market, how the public sector is organized, and local roles, may differ. This means that a client may not take a ‘successful’ collaborative procurement strategy from another context (e.g., a similar client in another country) and think the implementation process, by default, will work similarly.

Secondly, this thesis redirects focus to the individuals acting in the complex environment with a multitude of demands, conflicting policies, increasing complexity and interdisciplinary sustainability issues. This adds to the high pressure on project managers and other public officers on the frontline of the

organization. Thus, it is imperative that the policy formulation includes the operational part of the client organization and that their experiences are a key part of future initiatives to implement collaborative contracting or other procurement strategies and policies in public sector organizations.

Thirdly, the findings of the study accentuate the importance of long-term persistence for client organizations implementing new procurement models, as well as coordinated action with respect to parallel initiatives in the sector. Market actors must see that there is an incentive to change their associated organizational practices to meet the changed demands associated with collaborate procurement strategies.

7.3 Avenues for further research

To build on the findings of the thesis, it would firstly be valuable to investigate other public clients and their markets (for example municipalities), and how the structures and legitimacy of public organizations influence the learning trajectories in those cases. This would advance our understanding of how project capabilities are developed specifically in the public sector.

Furthermore, the findings direct focus to the importance of *intra*-organizational routines in the development of *interorganizational* collaborative contracting practices as clients in the pre-procurement phase 'set the stage' for collaboration between parties later on. It would thus be valuable to further investigate the various roles of routines in project-based settings has on the development of project capabilities. This would consequently include the connections between organizational routines at different levels within an organization, in interorganizational projects and at sector level.

Additionally, this study has focused mainly on the client, and future research would do well to investigate similar topics at the contractor and consultant side more carefully, as it would add to the question of how long-term change happens and institutional trust is built, in a project-based sector. Moreover, this thesis shows that there is a great variation in the ways the client translates

collaborative contracting between projects; how should the market adjust to this?

Lastly, there is a great need for research to emphasize the practice and 'bottom-up' perspective of public procurement activities in public sector since the top-down perspective is still prevailing at the policy formulation level for public procurement.

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Appendix

Project	Respondents	Round I (2017)	Round II (2018– 2019)	Round III (2020– 2022)	Round IV (2023)
ECI 1 & 2	Program Manger	x	x		
	Project Procurer	x			
	Head of Economy and staff in program	x			
ECI 1	Project Manager, client	x			x
	Assistant Project Manager, client	x	x		
	Previous Assistant Project Manager, client	x			
	Project Manager, contractor	x	x		
	Head of Regional department, contractor	x	x		
	Technical Consultant	x	x		
	Collaboration Facilitator	x			
	Collaboration Facilitator 2		x		
ECI 2	Project Manager, client	x	x		x
	Project Manager, contractor	x	x		
	Head of Regional department, contractor	x	x		
	Technical Consultant	x			
	Collaboration Facilitator, contractor	x	x		
	Collaboration facilitator 2		x		

ECI 3	Previous Project Manager, client		x		
	Project Manager, client		x		x
	Project Manager, contractor		x		
	Technical Consultant		x		
ECI 4	Project Manager, client*	x x*	x		x
	Project Procurer, client*	x x*			
	Assistant Project Manager, client *	x*			
	Assistant Project Manager, client *	x*			
	Project Manager, contractor		x		
ECI 5	Previous Project Manager, client		x		
	Project Manager, client*				x*
	Assistant Project Manager, client*		x*		x*
	Project Procurer, client*		x*		
	Project Manager, contractor		x		
ECI 6	Previous Project Manager, client		x		
	Project Manager, client			x	x
	Project manager, contractor			x	
ECI 7	Program Manager, client		x		
	Previous Project Manager, client		x	x	
	Project Manager, client			x	x
	Collaboration Facilitator, client		x		

	Project Procurer		x		
	Technical Manager, client		x		
	Project Manager, contractor		x	x	
	Collaboration Facilitator, contractor		x		
	Collaboration Facilitator, consultant			x	
	Technical Manager, contractor		x	x	
Central dep.	Strategist (responsible for ECI framework)	x*		x x x	x
	Strategist (active in developing ECI framework)	x* x			
	Head of Law department				x
	Program procurement manager				x
	Head of Major Projects department			x	
	Senior Advisor, department of Strategic Developments				x
	Head of Purchasing department				x
*= group interview, 2-4 interviewees.			Total 71 interviews, 51 interviewees		

