



CENTERIS - International Conference on ENTERprise Information Systems / ProjMAN - International Conference on Project MANagement / HCist - International Conference on Health and Social Care Information Systems and Technologies, CENTERIS / ProjMAN / HCist 2017, 8-10 November 2017, Barcelona, Spain

Governance lifecycles of inter-organizational collaboration: A case study of the Port of Rotterdam

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Abstract

An increasing use of inter-organizational collaboration systems can be observed. As multiple organizations often rely on these systems, even for business-critical processes, proper governance of these systems is crucial. This study aims to explain governance of inter-organizational collaboration systems by describing roles in collaborations, governance lifecycles, governance models, and how these roles affect the governance model in the lifecycles. A case study in Port of Rotterdam is described. The port collaboration in Rotterdam has gone through one full governance lifecycle and has entered the second iteration after the set-up of Portbase. During both cycles, the collaboration has maintained its Network Administrative Organization governance model. The case study analysis of Rotterdam's port community provides an example of how a systematic approach could help to discuss and communicate the governance of inter-organizational collaboration systems.

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Peer-review under responsibility of the scientific committee of the CENTERIS - International Conference on ENTERprise Information Systems / ProjMAN - International Conference on Project MANagement / HCist - International Conference on Health and Social Care Information Systems and Technologies.

Keywords: Collaboration; Lifecycle; Governance; Inter-organizational system; Port.

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1. Introduction

Inter-organizational collaboration systems have emerged to address the operational and information system related challenges of traditional collaborations¹. Companies expect benefits and competitive advantages from their collaborations, such as network expansion, business process simplification, cost reduction, or other benefits that are unique for each domain. As multiple organizations often rely on these systems, even for business-critical processes, effective governance of these systems is crucial.

Inter-organizational governance is the act of coordinating a collaboration of multiple companies^{2, 3}. Current literature has acknowledged the lack of attention on governance of inter-organizational collaborations which are supported by information systems². The governance ensures that the diverse coordination needs of the different members in a collaboration are met. Moreover, the paradigm of governance of collaboration is shifted from a static perspective towards a dynamic context-dependent perspective⁴. This lack of knowledge has been exacerbated by the increasing complexity of collaborations. Despite being the result of joint agreements between companies, inter-organizational collaborations do not eliminate the competition between these companies. Moreover, the global competition nowadays has urged collaborations to expand over the boundary of industry sectors, countries, and continents.

In a maritime port collaboration, this complexity of inter-organizational collaboration is apparent. Ports are critical hubs in which Supply Chain (SC) activities are drawn together. The performance of the port authorities, companies, government, and other entities in carrying out their SC activities largely depends on the effectiveness of their collaborations. SC activities at ports are increasing, but so is competition in global SCs⁵. Port collaborations are commonly supported by a Port Community System (PCS), which is the state of the art in information systems that connects SC actors in port environments using inter-organizational services. Designing governance is viewed as a crucial step in developing a PCS⁶. Thus, to design effective PCSs, an understanding of inter-organizational governance is needed. A study by De Langen⁷ has focused on the governance of port collaboration, but this study only addresses the governance as coordination mechanisms. Another study by Srour et al.⁸ discusses the lifecycles of port collaborations, but this study has not shown how the theory of dynamic governance could be used in analyzing an in-depth case study. This study aims to demonstrate the theory of dynamics governance by analyzing the governance of an inter-organizational collaboration in the Port of Rotterdam; this case study gives an understanding of the port's changing governance and how the roles of each actor involved form the dynamic behavior.

2. Inter-organizational Port Collaborations

A port collaboration is the act of independent companies working together to execute their SC activities related to one or multiple ports. To coordinate this cooperation, port collaborations can adopt a PCS. "A PCS is an electronic platform which connects the multiple systems operated by a variety of organizations that make up a seaport, airport or inland port community. It is shared in the sense that it is set up, organized and used by firms in the same sector – in this case, a port community"⁶.

In explaining the inter-organizational collaborations in ports, it is important to understand the roles of each company related to the collaborations. Chandra and Hillegersberg¹ proposed five general roles based on the analysis of several Supply Chain Collaborations (SCCs). This classification is suitable to be used to analyze the port collaboration context and as a structured way to communicate the collaborations' boundary design, business model, and governance to their potential members or other parties. The five roles are:

- *Members*. Entities which are the members of a port collaboration can be involved in the operational, tactical, or strategical activities of the collaboration. The members adopt the shared services to support their SC activities in the port environment. In order to maintain their access to these services, the members can invest into the PCS or pay per transaction. This category may include port authorities, customs, stevedores and terminal operators, freight forwarders and maritime agents, pre- and on-carriage operators, importers, exporters, and shippers.
- *PCS operators*, are providers who deliver the PCS, either software and/or platform as a service, for supporting the coordinated SC activities of port collaborations' members and enabling the collaborations. PCS operators are responsible to manage and maintain the PCS according to Service Level Agreements (SLA) with members⁶.

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