Balancing control and flexibility in joint risk management: Lessons learned from two construction projects

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Abstract

Joint risk management (JRM) is an approach that highlights the importance of collaboration between the project actors in managing risk that cannot be identified at the outset of the project. Despite the recognition of the concept in the literature, the use of JRM in practice seems to be rare. Based on contingency theory, we investigate how mechanistic (control-oriented) and organic (flexibility-oriented) management systems influence the implementation of JRM in two construction projects. In the first project, the actors managed to achieve a balance between control and flexibility, which paved the way for successful JRM. The extensive use of control in the second project hampered flexibility and constrained the use of JRM. We conclude that JRM requires both control for managing risk that has been identified and flexibility for dealing with unforeseen events. When a mechanistic approach is dominant, risk management remains a formal process carried out individually rather than collaboratively.

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1. Introduction

Risk management (RM) is an integral part of project management. A great deal of research about risk management has been focused on the development and assessment of models and tools for dealing with project risk (e.g. Baccarini and Archer, 2001; Baloi and Price, 2003; Chapman and Ward, 2003; Del Cano and De la Cruz, 2002). Despite the variety of available tools and techniques, RM is often criticized for being inadequate (e.g. Osipova and Eriksson, 2011a; Tang et al., 2007) and not achieving its main objective — to bring more certainty to a project by minimizing threats and maximizing opportunities. While some risks can be foreseen at the beginning of a project and allocated among the project actors, other risks are difficult to predict. For example, in their early stages, the majority of construction projects are very abstract and involve risks that are derived from uncertainty about project scope, organizational structure, the responsibilities and liabilities of different actors etc. These risks are difficult to allocate between the parties at the project outset. Moreover, even risks that have been identified and allocated may change in scope and require different types of response. In order to manage such risks successfully, collaborative efforts among project actors are needed. Joint risk management (JRM) is about the dynamic management of risk (Rahman and Kumaraswamy, 2005). A dynamic approach implies that the identification and assessment of project risk, along with the response to it, are performed proactively and jointly throughout the project (Hartman et al., 1997). Despite the fact that JRM is arguably an effective tool, the use of JRM still seems to be rare (Doloi, 2009; Osipova and Eriksson, 2011b; Rahman and Kumaraswamy, 2004).

Opportunistic behavior is an inherent phenomenon in projects because participants have different objectives and strive to optimize the result for their own organizations rather than the project (de Man and Roijakkers, 2009). To handle opportunistic behavior, the majority of project management tools are control-oriented, emphasizing hierarchical structures, centralized decision-making and the division of work and responsibilities (Lenfle and Loch, 2010). The drawback with such a control focus

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is that it hampers collaboration and adaptability. At the same time, project organizations have to be flexible to changes and challenges in order to be able to manage the uniqueness, uncertainty and complexity of projects (Geraldi, 2008). Thus, control and flexibility are both needed if a project is to be managed effectively. As control and flexibility are two contradictory approaches, the achievement of an optimal balance between them is one of the greatest challenges for a project organization (Raisch, 2008).

Burns and Stalker (1961) were pivotal pioneers of contingency theory. They investigated the circumstances under which control-oriented mechanistic organizations and flexibility-oriented organic organizations were most prosperous. Subsequent studies have followed in their footsteps and supported their theory, mostly at a company level. More recently, studies have also discussed the roles of control and flexibility in project management (e.g. Geraldi, 2008; Koppenjan et al., 2011; Lenfle and Loch, 2010; Sine et al., 2006). These authors agreed that modern project organizations have to manage the coexistence of mechanistic (controlling) and organic (flexible) approaches in a way that facilitates the achievement of project objectives. Risk management is a part of the overall project management process and, therefore, is affected by mechanistic and organic management systems.

However, there is still a lack of knowledge about how to manage the tension between control and flexibility in project organizations. There are no ready answers about how organizations achieve an optimal combination and studies that improve our understanding about weaknesses and strengths of different approaches are relevant. Furthermore, despite the fact that risk can significantly affect project objectives, the influence of control-oriented and flexibility-oriented approaches on the risk management process has not been investigated. It should thus be worthwhile to examine how the extent of control and flexibility in projects influence JRM. We attempt to address this question by integrating risk management literature and organizational theory about mechanistic and organic management systems in a study of two construction projects.

The purpose of this paper is to investigate how mechanistic and organic management systems influence the implementation of JRM. We have formulated two research questions:

1. What is control and flexibility from a project-based organizational perspective?
2. How do control and flexibility affect the implementation of JRM?

The paper begins by presenting a theoretical framework that aims to identify the characteristics that distinguish between control-oriented and flexibility-oriented project organizations. In the next section, uncertainty and risk management literature is presented and the connections between control/flexibility and RM are discussed. Following the two theoretical sections, the empirical methods are described and two case studies serve as illustrative examples of how different extents of control and flexibility can affect the implementation of JRM. The paper ends with a concluding discussion about the practical and theoretical contributions of this research.

### Table 1

<table>
<thead>
<tr>
<th>Characteristics of mechanistic and organic organizations (from Burns and Stalker, 1961).</th>
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<tbody>
<tr>
<td><strong>Mechanistic</strong></td>
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<tr>
<td>The specialized differentiation of functional tasks</td>
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<tr>
<td>The abstract nature of each individual task (distinct from the whole organization)</td>
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<td>The precise definition of rights and obligations attached to each functional role</td>
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<td>Hierarchical and vertical structure of control, authority and communication</td>
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<td>Location of knowledge at the top of the hierarchy</td>
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<td>Working behavior is governed by instruction and decisions made by superiors</td>
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<td>Importance and prestige of individual knowledge</td>
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