



## Effect of internal cost management, information systems integration, and absorptive capacity on inter-organizational cost management in supply chains <sup>☆</sup>

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### A B S T R A C T

Inter-organizational cost management is a strategic cost management approach to managing costs that span organizational boundaries in supply chains. Drawing on the resource-based view of the firm, we develop a model to predict which inter-related resources might enable companies to manage inter-organizational costs. We test this model using a survey of managerial accountants whose organizations are part of a supply chain. Using structural equation modeling, we conclude that the resources of internal electronic integration, external electronic integration, internal cost management, and absorptive capacity play significant direct and indirect roles in the development of an inter-organizational cost management (IOCM) resource. We find that these resources are inter-related and together are useful in enabling companies to ultimately benefit from managing inter-organizational costs. We find in particular the importance of relational resources associated with absorptive capacity in the development of an IOCM resource. Our research contributes to theory and practice by explaining how specific resources can be combined in allowing companies to better manage inter-organizational costs.

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### Introduction

Inter-organizational cost management (IOCM) is a strategic cost management practice that extends the application of cost management activities beyond the traditional management of internal costs to include managing costs among supply chain partners. In many cases, these activities are easily recognized as inter-organizational applications of traditional cost management activities, such as an inter-organizational application of activity-based costing (Kaplan & Narayanan, 2001). IOCM activities may also be viewed as supply chain management techniques bene-

fitting supply chain partners, such as just-in-time processes to manage and control inventory levels (Berry, Ahmed, Cullen, & Dunlop, 1997; Callioni, de Montgots, Slagmulder, VanWasenhove, & Wright, 2005). The common theme defining IOCM activities is that they involve collaborative or cooperative actions among supply chain members to reduce costs and to create value for organizations in a supply chain (Coad & Cullen, 2006; Cooper & Slagmulder, 1998). Based on this view of inter-organizational cost management, the set of techniques for managing boundary spanning costs can be considered an organizational resource used to create firm value (Coad & Cullen, 2006; Cooper & Slagmulder, 2004).

Prior research on activities related to inter-organizational cost management has mainly consisted of narrowly focused studies, often longitudinal and case studies (e.g., Cooper & Slagmulder, 2004; Dekker & Van Goor, 2000; Mouritsen, Hansen, & Hansen, 2001) that examined only

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a few specific IOCM activities. Individually, these studies reveal how certain organizational attributes or practices enable one or two cost management activities in the context of a limited number of companies. While these studies contribute to our understanding of inter-organizational cost management, they lack a unifying framework that would be useful to organizations wanting to manage their inter-organizational costs. Our objective is to develop a theory-based framework that unifies these prior studies and provides guidance to organizations interested in managing inter-organizational costs with supply chain partners. We draw upon the resource-based view of the firm to develop and test our framework of the resources required to enable an inter-organization cost management resource. The resource-based view of the firm focuses on how organizations derive value through the strategic application of their resources (Amit & Schoemaker, 1993; Barney, 1991; Holweg & Pil, 2008; Peteraf, 1993; Wade & Hulland, 2004). Resources are described as being valuable, rare, imperfectly imitable (i.e. unique), and having no equivalent substitutes (Anderson & Dekker, 2009; Barney, 1991; Combs & Ketchen, 1999; Das & Teng, 2000; Holweg & Pil, 2008; Peteraf, 1993; Wade & Hulland, 2004). Resources may be firm-specific or may span firm boundaries such as physical assets that are jointly placed in partner firms. In addition, resources can consist of organizational capabilities, routines, and various other attributes of supply chain relationships (Anderson, 1990; Dyer & Singh, 1998; Holweg & Pil, 2008; Wade & Hulland, 2004).<sup>1</sup> Given that Coad and Cullen (2006)<sup>2</sup> perceive IOCM as a value-adding resource, the resource-based view serves as an appropriate framework for identifying the resources that facilitate this strategic resource.

Consistent with Coad and Cullen (2006), we position individual IOCM activities as part of an overall IOCM resource. Furthermore, we study several firm-specific and relational resources as possible enablers of IOCM: internal electronic integration, external electronic integration, internal cost management, and absorptive capacity. With the support and cooperation of the Institute of Management Accountants, we collect data related to various organizations' cost management practices and supply chain relationships. Structural equation modeling is used to test the overall model representing our framework, as well as to test the hypothesized relationships among the resources and how they enable IOCM. Thus, we take a quantitative, theory-driven, positivist approach that complements prior studies by examining the following research questions: (1) To what extent do the resources of internal and external electronic integration, internal cost management, and absorptive capacity enable an organization's IOCM resource, and (2) To what extent are these resources inter-related?

Our findings offer several contributions to the resource-based view of the firm and IOCM research and theory. We

find that the resources of internal and external electronic integration, internal cost management, and absorptive capacity enable an overall IOCM resource and that these resources themselves are inter-related. Through a broad-based survey that empirically examines these enabling resources, we extend previous research findings in the area of IOCM. Our theoretical model suggests an order to the development of these resources and their relative importance. As a contribution to the resource-based view, we find that both firm-specific and relational resources (such as those associated with absorptive capacity) are inter-related and contribute to the development of the IOCM resource. Finally, we provide an improved understanding of how these resources coalesce to enable organizations to engage in IOCM and how organizations might more effectively and efficiently develop an IOCM resource to ultimately create value.

This paper is organized as follows. First, we examine the extant literature on inter-organizational cost management and the resource-based view of the firm, developing hypotheses about the various IOCM-enabling resources and their relationships. Second, we describe the scale development process where we operationalize the resources into measurable constructs. Third, data collection and the analysis using structural equation modeling are described. Finally, we discuss the results and implications and present our contributions and conclusions.

## Background, theory and hypothesis development

### *IOCM background*

Historically, the norm for inter-organizational behavior has been for autonomous organizations to engage in arm's length transactions with other organizations (Cullen, Berry, Seal, & Dunlop, 1999). However, as recognized by strategic cost management proponents (e.g., Berry et al., 1997; Shank, 1989; Shank & Govindarajan, 1992), this arms-length or independent focus by organizations makes it difficult to take advantage of joint cost reductions and management synergies among supply chain partners. This fact perhaps explains why companies have recently started to collaborate with their supply chain partners. In doing so, the collaborating organizations must be able to identify potential inter-organizational synergies and manage specific resources needed to extend cost management beyond organizational boundaries (Anderson, 2007; Anderson & Dekker, 2009; Cooper & Slagmulder, 1998; Das & Teng, 2000; Dekker, 2004; Dyer & Singh, 1998; Hakansson & Lind, 2004; Hakansson & Lind, 2007).

One example of a collaborative effort is the identification and management of inter-organizational costs. Specifically, inter-organizational cost management consists of one or more activities that allow organizations to manage costs that extend beyond their boundaries (Coad & Cullen, 2006; Cooper & Slagmulder, 2004). Through the sharing and use of information and other resources, the objective is to reduce costs in the value chain, as well as to enhance the strategic position of all organizations involved<sup>3</sup> (Ander-

<sup>1</sup> For this study, we focus on the general term "resource" instead of defining each type of resource. The exception is that we differentiate firm-specific and relational resources because we feel that this distinction contributes to the current literature on organizational resources.

<sup>2</sup> Coad and Cullen (2006) characterize IOCM as a capability, which is one example of resources under the resource-based view framework.

<sup>3</sup> This is in contrast to one partner using their market power to force changes on the other partner.

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