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The influence of task- and location-specific complexity on the control and coordination costs in global outsourcing relationships

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ABSTRACT

Several reputable industry sources have recognized that many organizations fail to realize the financial benefits sought with outsourcing. Further, prior research has found that outsourcing organizations struggle to estimate accurately the so called "hidden costs" associated with managing these inter-organizational relationships. This is especially true of complex, globally distributed outsourced services. In this study, we use dyadic data on 102 outsourcing relationships to investigate how dimensions of task- and location-specific complexity influence the degree of control and coordination costs incurred by the customer organization. Results from our hierarchical regression analysis demonstrate that the scale of the service and the geographic distance between the customer and provider locations are associated with higher levels of both control and coordination costs. Task breadth and geographic dispersion are significantly associated with increased control costs, but not coordination costs. Counter to our expectations, control costs decrease with the degree of service customization, whereas both control and coordination costs are negatively related to the average cultural distance between provider and customer organizations. These findings contribute unique empirical evidence to the outsourcing, offshoring, and international service operations literature.

1. Introduction

Notwithstanding the prevalent role that outsourcing now plays in nearly every industry, many firms struggle to realize the performance benefits they sought when deciding to outsource. Indeed, numerous industry sources (e.g., Bain & Co., Booz Allen Hamilton, Dun & Bradstreet) have estimated that 30–50% of outsourcing organizations fail to realize their performance expectations (Disher et al., 2005; Doig et al., 2001; Gottfredson et al., 2005). A frequent contributor to these disappointing outcomes is underestimating the resources needed to manage the relationship with the service provider adequately (Aron and Singh, 2005; Dibbern et al., 2008; Overby, 2003). A Deloitte Consulting report found that 62% of outsourcing firms indicated that they required more management resources than initially estimated (Landis et al., 2005). These additional expenses are often referred to as the "hidden costs" of outsourcing (Narayanan et al., 2011; Overby, 2003; Sanders et al., 2007). Given the number of studies identifying these costs, it is not apparent that they are actually "hidden". Yet, it is clear that firms experience difficulty in accurately estimating the costs of outsourcing beyond simply supplier cost and profit (Carmel and Tija, 2005). These problems amplify in the complex globalized context reflecting many modern outsourcing relationships (Aron and Singh, 2005; Cioni, 2007).

In 2006, the Commonwealth of Virginia entered into a 10-year, $2.3 billion information technology (IT) outsourcing contract with Northrop Grumman Corporation (Towns, 2009). This disappointing relationship exemplifies many of the aforementioned challenges. In 2009, the Joint Legislative Audit and Review Commission (JLARC) released a scathing assessment of the initiative's progress and impact on the 72 in-scope agencies (JLARC, 2009). The report outlines several performance shortfalls, including severely missed milestones, operational disruptions at multiple agencies, and unsatisfactory network reliability. Among the causes cited for this disappointing performance are: inadequately understanding the *complexity* of the engagement, poor communication and coordination between internal and external stakeholders, inadequate contractual provisions, and an ill-defined and incomplete performance measurement system. This non-anomalous example illustrates two common challenges firms face in managing inter-organizational relationships: control and coordination.

Several prior studies have identified control and coordination as two necessities for managing inter-organizational relationships

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effectively (Das and Teng, 2000; Dibbern et al., 2008; Tanriverdi et al., 2007; White and Lui, 2005). In the present paper's context, control is aimed at aligning the service provider's behaviors with the customer firm's interests. Aside from these behavioral concerns, the performance of the outsourcing relationship also depends on effectively integrating processes (Crowston, 1997), resources (Dibbern et al., 2008; Van de Ven et al., 1976), and information (Clemons et al., 1993) across firm boundaries (i.e., coordination). The time, effort, and resources associated with achieving adequate levels of provider control (i.e., *control costs*) and inter-firm coordination (i.e., *coordination costs*) are prominently noted "hidden costs" with outsourcing (Barthélemy, 2003; Dibbern et al., 2008; Sanders et al., 2007). Given the difficulties firms experience in estimating these extra costs, the dearth of quantitative empirical research investigating attributes of outsourcing engagements that drive the extent to which outsourcing firms incur control and coordination costs is surprising. Indeed, in discussing the "extra costs" of outsourcing, Dibbern et al. (2008, p. 334) observe "There is still little knowledge about the sources of their magnitude." Using dyadic data collected on 102 outsourcing relationships, the present study begins to address this literature deficiency.

The previously referenced Virginia JLARC report identified complexity as a root cause of the control and coordination difficulties experienced in the Commonwealth's relationship with Northrop Grumman by asserting "Complexity of the State's IT environment was not understood" (JLARC, 2009, p. 40). This industry observation is consistent with two prominent theoretical perspectives which emphasize the salient role of complexity in causing inter-firm control and coordination difficulties. As will be explicated in our theoretical development, transaction cost theory asserts that complexity enhances the risk of opportunism and the need for more costly formal control mechanisms. Likewise, information processing theory contends that greater complexity is associated with the need for more expansive coordination mechanisms. Thus, these established theoretical perspectives as well as observations from practice suggest that an important starting point for understanding factors contributing to greater control and coordination costs is the complexity of the outsourcing engagement. Complexity is a multi-faceted construct examined in an array fields. For parsimony, this study concentrates on two broad categories of factors that contribute to the overall complexity of the outsourcing engagement: task-specific complexity factors (i.e., scale, breadth, and customization) and location-specific complexity factors (i.e., geographic dispersion, geographic distance, and cultural distance). The decision to focus on task- and location-specific complexity and not other complexity dimensions was motivated by three considerations. First, these two sets of factors reflect two germane decisions that the literature recognizes outsourcing organizations must make: [1] defining the content and scope of the work to be outsourced (Aron et al., 2005; Clemons et al., 1993; Gilley and Rasheed, 2000; Lacity et al., 1996; Sanders et al., 2007) and [2] deciding where the work should be performed (Aron and Singh, 2005; Metters, 2008a,b; Rao, 2004; Tanriverdi et al., 2007). Secondly, as discussed in detail in the following section, these two sets of factors have independently been recognized as important contributors to control and/or coordination challenges in inter-firm relations. Finally, the complexity factors we consider are consistent with the definition of complexity derived from the seminal work by Campbell (1988). Drawing on Campbell (1988), we define task-specific (or location-specific) complexity factors as those task-related (or location-related) characteristics that contribute to high levels of information load, diversity, or uncertainty. In summary, the extant literature recognizes task- and location-specific factors as important outsourcing considerations that contribute to complexity and the often under-estimated control and coordination costs in inter-organizational relationships. Accordingly, the research question that we address is:

> How does the task- and location-specific complexity of the outsourcing service influence the extent to which the customer organization incurs control and coordination costs?

In addressing this research question, this study makes several important contributions. The primary managerial contribution is the examination of how salient decisions made regarding the scope of the outsourced work and location of where the work is to be performed impact the control and coordination costs that are frequently under-estimated when entering outsourcing relationships. We find that these task- and location-related decisions have a meaningful influence on the extent to which control and coordination costs are incurred; these findings are particularly strong for control costs. These findings also contribute to the outsourcing literature which has identified the existence of hidden control and coordination costs, but has thus far provided insufficient empirical evidence of factors which drive the level of these costs. This deficiency is especially true with respect to coordination costs as there is scant empirical research linking *either* task- or location-specific complexity factors to inter-firm coordination costs. To the inter-organizational control literature, we contribute by empirically identifying important location-specific factors which influence the difficulty and cost of deploying formal control mechanisms (e.g., enforceable contracts). This literature has examined the effect of task-related factors, but its consideration of location-related factors has been limited. To our knowledge, the current study represents the first large-scale empirical study to concurrently investigate the impact of task- and location-specific complexity factors on the inter-organizational management costs with outsourcing. Finally, this study contributes to the nascent international service operations literature. In evaluating the influence of location-specific complexity factors on control and coordination, this study directly contrasts inter-firm relationships with different service provider location characteristics (e.g., domestic only, domestic and offshore locations, single offshore location, multiple offshore locations, etc.) As such, this study makes an additional managerial contribution by informing the process of evaluating the relative merits of providers with potentially different global service footprints. It has been recognized that empirical studies explicitly comparing international and domestic relationships are rare in the operations literature (Kaufmann and Carter, 2006; Li et al., 2010). Ours is the first quantitative empirical study to explicitly examine how location-specific factors, largely driven by the choice of domestic vs. offshore outsourcing, are associated with control and coordination costs in inter-firm relations.

The next section presents the positioning of this paper relative to prior literature. Section 3 provides the theoretical underpinnings for the research hypotheses. Our research methods and data analytic techniques are detailed in Sections 4 and 5. The statistical results are detailed in Section 6, and a discussion of the implications is presented in Section 7. Section 8 concludes with study limitations and future research opportunities.

2. Background literature

Three related empirical streams of research were surveyed for this study. The first considers the impact of task-specific complexity on the cost and efficiency of outsourcing. Second, prior contributions explicating the unique challenges of managing offshore relationships were evaluated. Empirical studies incorporating control and coordination costs or difficulties as the outcome variable are the third literature stream. Table 1 synthesizes these streams highlighting the prior contributions and existing gaps in the