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Leveraging integrated information systems to enhance strategic flexibility and performance: The enabling role of enterprise risk management☆,☆☆

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ABSTRACT

Enterprise risk management (ERM) has arguably become the dominant strategic management focus of organizations primarily due to a combination of factors—stakeholders' aversion to uncertainty, volatility of the current marketplace, and compliance mandates such as the Sarbanes–Oxley Act. The purpose of this study is to develop and test a theory of the impact of ERM on two aspects of organizational performance, strategic flexibility and supply chain performance. The study is designed to examine conflicting views on the effect of increased levels of governance on organizations' flexibility and supply chain performance, and determine whether ERM capability influences the observed differential effects. Building on theories related to the electronic integration perspective of firm agility and the role of knowledge integration on the activation of the link between strategic flexibility and performance, we develop a theory of ERM as an enabler of IT integration, flexibility, and performance. A cross-sectional field study of six companies illustrates the interrelationships and provides preliminary support for the theory. Subsequent testing using data from 155 Chief Audit Executives provides strong support for the theory. The results show that a broad-based, strategic approach to ERM enhances flexibility and strengthens the relationship between flexibility and performance. The results also provide evidence that enhanced IT integration is the mechanism through which ERM strengthens both flexibility and in turn performance.

1. Introduction

Enterprise risk management (ERM) is rapidly becoming the dominant strategic management approach within organizations as they face a social phenomenon termed "the risk management of everything" (Power, 2007; Bhimani, 2009; Mikes, 2009; Mikes,

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2011). Normatively, ERM encompasses both the identification of events and environmental changes that potentially impact an organization's goals, and the recognition of threats and opportunities facing the organization (Bhimani, 2009; Collier, 2009, 48–49). As ERM is adopted and strengthened, risk management processes move from a rudimentary focus on compliance and prevention (i.e. downside risk) toward a strategic approach that focuses on the opportunity side (i.e. upside) of risk identification and response (Collier, 2009, 46; COSO, 2009, 1). This shift has been driven by a number of different forces including increased levels of stakeholder aversion to uncertainty, volatility of the current marketplace, increased globalization, increased competition, and additional compliance mandates such as the Sarbanes–Oxley Act (SOX) in 2002 (Power, 2007; Mikes, 2009; Arnold et al., 2010). As Power (2009, 852) notes, expectations that organizations will embed risk management and internal control systems throughout their business processes "have become an unquestioned ERM imperative". While top management teams have rapidly adopted the ERM movement (Power, 2007), theoretical understanding of how and when ERM facilitates value chain activities is limited (O'Donnell, 2005).

The purpose of this study is to develop and test a theory of the impact of ERM on two aspects of organizational performance, strategic flexibility and supply chain performance, in order to better understand the role of ERM in facilitating or hindering performance. The theory is developed through an amalgamation of three emergent theoretical perspectives related to risk management orientation (Power, 2007, 2009; Mikes, 2009, 2011), IT integration (Nazir and Pinsonneault, 2012), and flexibility for performance (Patel et al., 2012) that provide insights into the interrelationships. The primary theoretical lens is that of the culture of risk management whereby the relentless expansion of measurement-based risk management is often viewed as providing a false sense of control that can have deleterious effects (Power, 2007, 2009; Mikes, 2009); whereas a more integrative risk management view that focuses on internal and external environmental changes, can position the organization to be better prepared to react to threats and opportunities (Mikes, 2011). The former is considered a defensive postured ERM that is calculative in nature; while the latter is viewed as strategic ERM which uses a more visionary approach to risk management. Applying this risk management theory to the supply chain environment provides the explanatory capability to extend the understanding of the relationship between IT integration and strategic flexibility. Emergent theory posits that strong internal integration of information across organizational units leads to flexible organizations only when management structures are able to integrate information on external environmental changes (Nazir and Pinsonneault, 2012), a capability provided by strategic ERM. Strategic ERM should both guide enhancements to IT integration that improve the capture of enterprise-wide internal information and provide strong monitoring capability for identifying changes in the external environment. This combination improves the organization's sensing capability and through support of strategic flexibility facilitates development of responding capability. Similarly, contemporary theory on the relationship between flexibility and supply chain performance suggests the relationship is inconsistent and that organizational structures somehow effect the way organizations "absorb, explore and exploit knowledge"—a necessary condition for flexibility to lead to performance (Patel et al., 2012). Patel et al. (2012) note little is known about how firms "absorb, explore and exploit knowledge"; critical processes for organizations to establish responding capability. We theorize that ERM is a strategic management approach that facilitates knowledge absorption, exploration, and exploitation, and as a result is a determinant of the strength of the relationship between flexibility and performance.

We test our theoretical model using a two-step process. First, a cross-sectional field study of six companies was conducted to explore the consistencies of their operations with the theorized relationships. These case studies provide support for the basic tenets of the theory and support a broader-based testing of the theory. Second, survey responses from 155 Chief Audit Executives (CAE) were used to examine the theoretical relationships across a diverse set of firms operating in supply chain environments. Analysis of the survey data generally provides support for the theory. The results indicate that ERM has a positive relationship with the extent of IT integration and, through IT integration, has a positive relationship with strategic flexibility. However, ERM does not have the hypothesized moderating effect on the relationship between IT integration and flexibility. As theorized, ERM has a positive indirect effect on supply chain performance through the enhancement of IT integration and increased flexibility, but the strength of this relationship is also positively influenced by the level of ERM (i.e. ERM has a moderated mediation effect on the relationship between flexibility and performance).

This research contributes to the ERM literature in several ways. First, we explore the contexts in which companies have implemented ERM to understand and theoretically model the interrelationships and organizational structures that provide the link between ERM processes and organizational performance. Second, we focus on ERM as a strategic management initiative, recognizing the importance this strategic level focus has on enterprise-wide integration of ERM initiatives. Third, we directly address on-going concerns that risk management requirements under SOX 404 disadvantage companies and hinder their ability to maintain competitive supply chain activities. Specifically, our results indicate that higher levels of ERM activity are associated with *increased* strategic flexibility and, in turn, improved supply chain performance, and that strong ERM magnifies the strength of the relationship between flexibility and performance. Fourth, our results demonstrate the integral role of IT integration in facilitating ERM efforts to establish flexibility and improve performance.

The remainder of the paper is organized into four sections. Section 2 presents an overview of the theory development leading to the hypotheses and the development of the research model. This is followed by the research methods and results sections. The fifth and final section provides a summary of the research findings, a review of the limitations of the study, and a discussion of the implications of the research findings.

2. Theory development and hypotheses

Why do some organizations report impediments to their supply chains from newly integrated risk management procedures while others report improved efficiencies? The professional literature is replete with arguments supporting the benefits and