



Decision execution mechanisms of IT governance: The CRM case

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ABSTRACT

Employing the literature on IT governance and the structuration theory of technology assimilation, this research develops a conceptual model to examine decision execution mechanisms of IT governance in post-adoption stages of CRM diffusion, i.e. CRM use, impacts on business processes, and impacts on firm performance. While the literature mainly addresses the forms and contingencies of IT governance structures for decision making, we focus on IT governance mechanisms for decision execution, that is, the role of top management, business managers and IT managers in post-adoption stages of technology diffusion and how these groups are held accountable for their role. We conceptualize decision execution mechanisms of IT governance as including two dimensions: vertical advocacy from top management and horizontal coordination between business and IT managers. Decision execution mechanisms are assumed to facilitate CRM use and value creation. We analyze a dataset of 82 Chinese firms to examine the model and associated hypotheses. Our results show that: (1) decision execution mechanisms, including both vertical advocacy and horizontal coordination, significantly contribute to the three stages of CRM diffusion; (2) vertical advocacy has a notably greater effect on CRM use and firm performance gains than horizontal coordination, which has a greater effect on process gains. (3) CRM use creates operational and strategic benefits in customer-oriented business processes, which further improves firm performance. These findings have important implications for understanding how IT governance shapes the diffusion of CRM technology.

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1. Introduction

As firms are investing heavily in enterprise digital platforms such as enterprise resource planning (ERP), customer relationship management (CRM), and supply chain management (SCM), IT governance has been regarded as an important issue for realizing effective IT deployment (Agarwal & Sambamurthy, 2002). Especially, CRM systems have received increasing attention by firms (Rigby, Reichheld, & Schefter, 2002). *Customer relationship management* (CRM) systems are enterprise applications that integrate and manage all aspects of customer interactions with the organization to improve the efficiency and effectiveness of customer-oriented business processes, including marketing, sales and customer service (Gefen & Ridings, 2002; Karimi, Somers, & Gupta, 2001). As CRM systems facilitate customer-oriented business processes across multiple business units, effective IT governance for such applications involves extensive organizational efforts in aligning corporate strategy, business processes, management support, and skill development (Bull, 2010; Goodhue, Wixom, & Watson, 2002; Reychav & Weisberg, 2009). This raises important new issues

regarding IT governance structures and mechanisms, as the traditional view of IT governance may not adequately address today's strategic, managerial, and technological complexity in governing new business innovations (Agarwal & Sambamurthy, 2002; Weill & Ross, 2005).

First, the literature on IT governance focuses mainly on determining who makes IT decisions and why (i.e. *decision making structures* and the factors underlying such structures), while far less on what are the role of different groups (e.g. top management, business managers, and IT managers) in the *execution* of such IT decisions and how these groups are held accountable for their role (i.e. *decision execution mechanisms*) (Boynton, Jacobs, & Zmud, 1992; Weill, 2004).

Second, the traditional view of IT governance classifies decision making structures into three main categories: the centralized models (where top management such as CEO, top executives or IT steering committee holds the authority for making IT decisions), the decentralized model (where divisional business units or functional IT units make IT decisions), and the federal model (where top management makes decisions on IT infrastructure and divisional units make decisions on business deployment of IT) (Boynton & Zmud, 1987; Von Simson, 1990). Researchers have come to the consensus that the federal model is more appropriate for large firms since it balances enterprise-wide requirements with business

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unit requirements (Brown & Magill, 1994; Sambamurthy & Zmud, 1999). However, no matter what a decision making structure firms may have, the execution of decisions on complex, multidivisional business applications such as CRM systems requires significantly high levels of *both* centralized top management support and decentralized collaboration between business and IT managers (Agarwal & Sambamurthy, 2002). Therefore, even the federal model, which emphasizes different decision makers for different IT applications, may not fully address the fact that executing the decision on one specific multidivisional application demands both centralized and decentralized mechanisms. This further calls for research on decision execution mechanisms.

In this research, we intend to study the decision execution mechanisms in the context of CRM diffusion. CRM systems are intended not only to automate customer-oriented business processes to reduce costs, but also to collect and analyze customer data to improve customer satisfaction and increase selling opportunities (Karimi et al., 2001). Although firms are boosting their CRM investments,¹ they have seen vastly different outcomes of such investments (Rigby & Ledingham, 2004). There are a number of studies that have investigated the assimilation and performance effects of CRM, as well as the antecedent determinants (e.g. Karimi et al., 2001; Mithas & Krishnan, 2004; Romano & Fjermestad, 2001, etc.). In this study, we focus on investigating the specific decision execution mechanisms for CRM diffusion through theoretical lens of IT governance and the structuration theory of technology assimilation. We wish this research would provide a new theoretical perspective for understanding the role of decision execution mechanisms in affecting the use and value of CRM systems.

Motivated by the above considerations, our study focuses on two key research questions:

- (1) What are the key dimensions of IT governance mechanisms for executing CRM decisions?
- (2) How would such decision execution mechanisms influence the use and value of CRM systems? To better understand these issues, we draw upon the structuration theory and the literature on IT governance as theoretical guidance, and develop a conceptual model to examine the role of decision execution mechanisms in CRM diffusion.

2. Theoretical development

2.1. IT governance

IT governance has been catching more attention of researchers recently, in view of firms' heavy investments in business IT innovations such as ERP, CRM, and SCM systems (Brown & Grant, 2005; Weill & Ross, 2005). As defined by Weill (2004), IT governance refers to "the framework for decision rights and accountabilities to encourage desirable behavior in the use of IT" (p. 3). Accordingly, we deem IT governance as including two parts: the first is *decision making structures* that determine who makes decisions on different IT applications and who has input to a decision; the second part is *decision execution mechanisms* that determine the role of different groups (e.g. top management, business managers, and IT managers) in executing IT decisions and how these groups are held accountable for their role (Weill, 2004). This is consistent with the view of Boynton et al. (1992), which states that IT governance

is about the location, distribution, and pattern of *both* managerial responsibilities (regarding decision making) and control (regarding decision execution) that influence the initiation and deployment of IT (p. 1). Multiple researchers share the same view of IT Governance (e.g. Duffy, 2002; IT Governance Institute, 2003; Van Grembergen, De Haes, & Guldentops, 2004).

The extant literature has mainly focused on the first part, i.e. decision making structures of IT governance. Although research on the fundamental concepts represented in the above definition started as early as in the 1960s (though indirectly, e.g. Garrity, 1963), it is until late 1990s that the term "IT governance" has become prominent, as represented by the work of Brown (1997) and Sambamurthy and Zmud (1999) with the notion of "IS governance framework" and later "IT governance framework". Along the way, researchers have investigated the forms of decision making structures, and the contingency factors that lead to the adoption of such structures. Specifically, researchers have found three basic forms of decision making structures (with other mixed forms in between): the *centralized* model (where top management makes IT decisions), the *decentralized* model (where divisional business units or functional IT units makes IT decisions), and the *federal* model (where top management makes decisions on IT infrastructure and divisional units make decisions on business deployment of IT) (Sambamurthy & Zmud, 1999).

Multiple studies have addressed the advantages and disadvantages of each of these three forms of decision making structures (e.g., Brown, 1997; Boynton & Zmud, 1987; Von Simson, 1990, etc.). Researchers have formed the consensus that for large firms, top management should hold the decision rights on IT infrastructure and enterprise-wide IT applications, while divisional units should make decisions on local business deployment of IT, which is close to a federal model (Brown & Magill, 1994; Sambamurthy & Zmud, 1999). Along this line, researchers have studied the contingency factors that affect firms' choices of these models, such as organizational structure and environment (Boynton et al., 1992; Olson & Chervany, 1980), business strategy (Henderson & Venkatraman, 1993; Venkatraman, 1997), firm size and industry (Ahituv, Neumann, & Zviran, 1989; Clark, 1992; Ein-Dor & Segev, 1982).²

Yet, research on decision execution mechanisms has been rather unsystematic. In fact, several researchers have long since used the term "IT governance" to describe the set of mechanisms for ensuring successful execution of IT decisions and thus the attainment of IT capabilities (Henderson & Venkatraman, 1993; Loh & Venkatraman, 1992). However, research issues on decision execution mechanisms (i.e. what are the role of top management, business managers and IT managers in executing IT decisions collectively, and how they should play their role) have not been systematically studied from the perspective of IT governance. One stream of previous research has investigated the significant role of top management championship in safeguarding the successful assimilation of IT (e.g. Angeles, Corritore, Basu, & Nath, 2001; Hartono, Li, Na, & Simpson, 2010; Kankanhalli, Teo, Tan, & Wei, 2003; Meador, Guyote, & Keen, 1984; Naranjo-Gil, 2009; Purvis, Sambamurthy, & Zmud, 2001; Reich & Benbasat, 1990). Another stream has studied the strategic importance of collaboration and partnerships between business and IT managers in securing effective IT deployment (e.g. Boynton, Zmud, & Jacobs, 1994; Chen, Sun, Helms, & Jih, 2008; Coughlan, Lycett, & Macredie, 2005; Nelson & Coopridge, 1996; Pollalis, 2003). Combining the two streams of research, a number of studies have shown that effective execution of IT decisions requires *both* vertical advocacy from top

¹ According to Gartner, Inc. (2008), "Worldwide customer relationship management (CRM) software revenue is projected to surpass \$8.9 billion in 2008, a 14.2 percent increase from preliminary 2007 revenue estimates of \$7.8 billion. . . The market is poised for healthy growth through 2012 when revenue is forecast to reach \$13.3 billion."

² See Sambamurthy and Zmud (1999) for a comprehensive review.

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