



The influence of inter-firm IT governance strategies on relational performance: The moderation effect of information technology ambidexterity[☆]



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ABSTRACT

How to create value from information technology (IT) in multi-firm situations has attracted the notice of both researchers and practitioners. However, as a critical factor to enhance relational performance, the inter-firm IT governance strategy has not been sufficiently studied. Based on the contractual and relational governance literature, this paper presents two inter-firm IT governance strategies, namely, balancing (focusing on achieving a close match between the relational and contractual governance) and complementing (focusing on creating synergy between the relational and contractual governance) governance strategies. Using data collected from 200 firms, we examined the relationship between these two governance strategies and relational performance. Furthermore, we studied the influence of a contingent factor, IT ambidexterity (simultaneous pursuit of IT flexibility and IT standardization) on this value generation process. Our results indicate that both inter-firm IT governance strategies, but especially the balancing strategy, can help increase relational performance, and IT ambidexterity also can influence the choice of governance strategies of focal firms. Specifically, focal firms with low IT ambidexterity prefer using a balancing governance strategy rather than a complementing governance strategy. On the other hand, focal firms with high IT ambidexterity can reduce or mitigate the risks of unbalancing strategy (such as the contractual-dominant or relational-dominant governance strategy), and then enhance the synergy effects of contractual and relational governance. Implications for theory and practice are also discussed.

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1. Introduction

Recently, many firms have collectively leveraged information technology (IT) and achieved performance in multi-firm environments. How to create relational performance from IT in a multi-firm situation has attracted the notice of both researchers and practitioners (Grover & Kohli, 2012; Rai, Pavlou, Im, & Du, 2012).

In a multi-firm environment, effective inter-firm IT governance¹ has become the prerequisite to creating relational performance (Alreemy, Chang, Walters, & Wills, 2016; Weill & Ross, 2004), as it sets up a control structure that reduces transaction costs and avoids opportunism, and incentivizes new value creation (Grover & Kohli, 2012; Han et al., 2012; Jarvenpaa & Majchrzak, 2015; Wu, Straub, & Liang, 2015). For example, Amazon.com provides inter-firm IT governance for hundreds of retailers to create value for its partners by providing an affordable online interface for searching, ordering, and paying for products or services as well as a mechanism for conflict resolution (Grover & Kohli, 2012). Therefore, in order to achieve

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¹ We adopt the definition from Weill and Ross (2004), IT governance is specifying the decision rights and accountability framework to encourage desirable behavior in the use of IT. It is considered to play a role in affecting efficiency and effectiveness in inter-firm coordination hubs (Cao et al. 2013).

high relational performance, focal firms should adopt proper inter-firm IT governance strategies to facilitate e-collaboration activities.

The information systems (IS) literature related to inter-firm IT governance deals primarily with the IS outsourcing environment (Benaroch, Lichtenstein, & Fink, 2016; L. Cao, Mohan, Ramesh, & Sarkar, 2013; Huber, Fischer, Dibbern, & Hirschheim, 2013; Lioliou, Zimmermann, Willcocks, & Gao, 2014; Rai, Keil, Hornyak, & Wüllenweber, 2012). Inter-firm IT governance usually includes contractual governance and relational governance (Cao, Mohan, Ramesh, & Sarkar, 2013). Contractual governance refers to using contracts to safeguard against opportunism and conflicts in the inter-firm business activities. Relational governance (also called social governance or informal governance) implies a set of norms or trust to coordinate inter-firm business activities. Both relational and contractual governance are necessary and effective governance mechanisms in the process of managing IT outsourcing deals (Deng, Mao, & Wang, 2013; Kim, Lee, Koo, & Nam, 2013; Tiwana, 2010), and researchers have found that the association between contractual and relational governance contains complementarities and substitutions in IS outsourcing (Huber et al., 2013). Prior research focused primarily on the substitutive or complementary role of governance on performance outcomes (Cao & Lumineau, 2015) and has found that a balance between relational and contractual governance is essential to firm performance (Cao et al., 2013). An unbalancing governance (such as relational-dominant or contractual-dominant governance²) would hurt firm performance (Z. Goo, Kishore, Rao, & Nam, 2009). However, few studies (especially empirical studies) explored the balance of contractual and relational governances in an inter-firm setting.

Furthermore, IT provides a key platform on which focal firms compete through utilizing their digitized processes, knowledge, and design capital (Sambamurthy, Bharadwaj, & Grover, 2003). In particular, IT ambidexterity, the focal firm's simultaneous pursuit of IT flexibility and IT standardization (Lee, Sambamurthy, Lim, & Wei, 2015; Mithas & Rust, 2016), can complement inter-firm governance strategies to enhance firm performance. For instance, IT flexibility can help the contractual-dominant governance strategy to add other flexible terms that have not been included in the contracts. IT standardization, on the other hand, can reduce the risks of the relational-dominant governance, such as opportunism by abusing trusts. Therefore, with IT ambidexterity, firms can achieve higher relational performance by combining proper inter-firm IT governance strategies. However, current IS literature is mainly concerned with the effect of IT flexibility (Tallon & Pinsonneault, 2011), ignoring the ambidexterity between IT flexibility and standardization, and how to use this IT ambidexterity to improve operational efficiency and effectiveness in the multi-firm environment.

To fill two gaps in the extant literature, we first identify the following two dimensions of governance strategies³ that can be used to combine contractual and relational governance: (1) the **balancing** dimension, which is a firm's orientation to maintain a close relative match between contractual and relational governance (i.e., a harmonious use of both types of governance); and (2) the **complementing** dimension, which is a firm's orientation

to focus on the synergy between contractual and relational governance (Cao et al., 2013; Lumineau & Henderson, 2012). We evaluate the impact of these two dimensions of a firm's governance strategy on **relational performance**, which is defined as mutual benefits that are jointly created by focal firms and their partners (Rai, Pavlou et al., 2012). Furthermore, we explore the role of **IT ambidexterity** in influencing the process of governance strategies. For example, **IT ambidexterity** can complement either governance strategies (contractual-dominant or relational-dominant) respectively. Our primary research question is (1) how do two governance strategies (balancing and complementing) enhance a firm's relational performance? and (2) how does IT ambidexterity moderate the effects of two governance strategies on a firm's relational performance?

By focusing on balancing and complementing governance strategies and investigating the causal relationship of each governance strategy with relational performance, and exploring the moderating role of IT ambidexterity, this paper contributes to the extant literature of how firms adopt proper governance strategies with IT ambidexterity. Using firm-level data collected from 200 firms in machine, tool, computer, electronics, wholesale, retail etc., we find that relational performance is induced by these two governance strategies, especially the balancing governance strategy. Furthermore, depending on the level of IT ambidexterity, focal firms can choose a suitable governance strategy to enhance relational performance.

In the following section of the paper, we present our theory development and research model. We generate four hypotheses. Next, we introduce our research design, discuss the details of our analysis, and present our findings. We end with a discussion of our findings and their implications.

2. Theory development and research model

2.1. Contractual and relational governance under multi-firm environments

Governance is considered to play a critical role in affecting efficiency and effectiveness in inter-firm coordination or collaboration (Wang, Tai, & Grover, 2013). How to use different governance mechanisms to manage inter-firm relationships has received considerable interest among both information systems and supply chains scholars. Traditionally, there are two essential mechanisms of inter-firm governance: contractual governance and relational governance (Cao & Lumineau, 2015). Contractual governance highlights the significance of contracts between the focal firm and its channel partners to safeguard against opportunism and conflicts. On the other hand, relational governance emphasizes the importance of using a set of norms and trust between exchange channel partners to regulate inter-firm collaborative activities.

Prior literature that examines the joint impacts of the two governance mechanisms on performance presents two competing positions. On the one hand, some scholars have asserted that contractual governance substitutes relational governance or relational governance substitutes contractual governance in explaining performance (Rai, Keil et al., 2012; Wang, Yeung, & Zhang, 2011). This means that the joint use of the two governance mechanisms is negatively related to firm performance. For example, contractual and relational governance substitute for business process outsourcing (BPO) satisfaction (Rai, Keil et al., 2012). Also, other researchers found substitutions in the Chinese buyer-supplier relationship (Li, Xie, Teo, & Peng, 2010). On the other hand, more and more scholars have stated that the complementarities between two governance mechanisms may be leveraged to increase firm performance. In the IT outsourcing environment, researchers found that contractual elements of service level agreements (SLAs) complemented

² Contractual-dominant governance is a kind of strategy that focal firm adopts to focus on the contractual governance; Relational-dominant governance is a kind of strategy that focal firm adopts to focus on the relational governance.

³ Our conceptualization of the balancing and complementing dimensions of a focal firm's inter-firm IT governance strategy to combine contractual governance and relational governance is based on the fit concepts proposed by Venkatraman (1989). This paper focuses on (1) fit as complements (where the influence of a given variable on an outcome variable is a function of a third variable) and (2) fit as balance (where the difference in the levels of the two variables influences an outcome variable). A similar conceptualization was adopted by Cao, Gedajlovic, and Zhang (2009), Tang and Rai (2014).

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