Executive Summary

Competitive Performance Impacts of IT-Enabled Product and Process Innovation Capabilities: The Contextual Influence of Dysfunctional Competition

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Innovation has been documented as an engine for growth and obtaining competitive advantage. In most countries, about 30 to 50 percent of firms introduce a product or process innovation in a three-year period (Hall 2011) and on average, more than one-third of a firm’s revenue comes from products or processes that did not exist five years earlier (Nambisan 2003). Indeed, the Organization for Economic Co-operation and Development (OECD) (2010) describes innovation—defined as the introduction of a new or significantly improved product, process, or method—as holding the key to boosting productivity in a highly competitive and connected global economy. The importance of innovation has attracted a large number of researchers in marketing and management strategy to study its antecedents and consequences (for review, see Evanschitzky et al. (2012) and Calantone et al. (2010)). Surprisingly, little is known about how information technology (IT) plays a role in innovation despite the rising role of IT in firm strategy and operations. Recently, some scholars in information systems have emerged to explore the role of IT in innovation such as how IT stock (Kleis et al. 2012) and IT asset portfolio (Xue et al. 2012) affects innovation. However, a close examination of previous studies on IT-enabled innovation (and more broadly IT-enabled capabilities and firm performance) reveals the following three research gaps:

1. IT capability has been operationalized and measured in various ways such as investment in IT asset portfolio (Xue et al. 2012), IT stock (Kleis et al. 2012), and digital IT systems (Pavlou and El Sawy 2010), among others, which cannot fully reflect the firm’s ability to assemble, integrate, and use IT-based resources to perform business functions (Rai et al. 1997).

2. Although innovation capabilities can encompass product and process innovation capabilities, existing studies typically focus on one type without considering the other (e.g., (Grover and Saeed 2007; Rai and Tang 2010; Sambamurthy et al. 2003; Xue et al. 2012).

3. Extant studies focus on how business-specific – as opposed to institutional – environmental factors (e.g., demand uncertainty, competitive intensity, and technological turbulence) moderate the link between IT capabilities and firm performance (Bensaou and Anderson 1999; Grover and Saeed 2007; Xue et al. 2012). We need to broaden our consideration to the institutional level as the legal system and framework may not establish a fair and equitable environment for firms to compete (Lin et al. 2009; Peng 2003; Shi et al. 2012).
To address these identified research gaps, we draw on extant research on IT-enabled capabilities (El Sawy and Pavlou 2008; Mithas et al. 2011; Rai and Tang 2010) and institution-based view of strategy (Peng 2003; Wright et al. 2005) to develop a theoretical framework about the enabling roles of IT capabilities on innovation capabilities within the context of dysfunctional competitive environment. Specifically, we examine (a) how internal-focused IT capability and market-focused IT capability separately affect product innovation capability and process innovation capability, and (b) how product and process innovation capabilities individually affect competitive performance. Because each type of IT capabilities and each form of innovation capabilities represent different foci and underlying assumptions, examining each of their individual impacts offers nuance insights to firms.

Moreover, the institutional environment establishes a framework that affects how managers make strategic choices (Peng et al. 2009). When voids exist in an institutional environment (Lin et al. 2009; Peng 2003; Shi et al. 2012), dysfunctional competition, defined as the opportunistic, unfair, or unlawful competitive behavior in an industry (Li and Atuahene-Gima 2001), can result. Since it may constrain the opportunities for some firms but may reduce the barriers to competitive imitation of productive resources or capabilities for other firms, it is imperative to examine (a) and (b) in the presence of dysfunctional competition and explore how the theoretical linkages stated in (a) and (b) vary.

Using data collected from 241 firms in China to test our model, our results illustrate the positive effect in each of the theoretical linkages of IT capabilities—innovation capabilities—competitive performance. More importantly, we find that dysfunctional competition acts as a double-edged sword – as dysfunctional competition increases, it strengthens the enabling effect of internal-focused IT capability but weakens the enabling effect of market-focused IT capability. Similarly, dysfunctional competition strengthens the positive effect of process innovation capability on competitive performance but reduces the positive impact of product innovation capability.

Our research demonstrates that “institutions matter” when it comes to understanding IT-enabled innovation capabilities and the resulting business value. We identify the influence of dysfunctional competition on the effectiveness of IT capabilities to serve as operands of product and process innovation capabilities: internal-focused IT capability is more effective in enabling product innovation capabilities when dysfunctional competition is high and market-focused IT capability is more effective in enabling process innovation capabilities when dysfunctional competition is low. We also identify the influence of dysfunctional competition on competitive advantages derived from IT-enabled innovation capabilities: process innovation capability generates greater competitive advantages when dysfunctional competition is high and product innovation capability generates greater competitive advantages when dysfunctional competition is low. Cumulatively, our study provides a nuanced explanation of IT-enabled innovation capabilities and their competitive performance by integrating the logic of the IT-enabled organizational capabilities perspective with the logic of the institutional-based view of strategy.
References


