IT-Based Knowledge Capability and Commercialization of Innovations:
Modeling the Impacts of Ambidexterity and Absorptive Capacity

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ABSTRACT
The author provides a framework comprising of propositions for further research explicating the relations between IT-based knowledge capabilities (IT-KC) and Commercialization of Innovations (CI). They posit that a firm’s absorptive capacity and ambidexterity (ability to explore and exploit) affect CI. Further, absorptive capacity too can be an antecedent to ambidexterity. IT based knowledge capability (which is an instantiation of IT capability) is found to positively moderate the relationship between ambidexterity and commercialization of innovations, and also is an antecedent to potential and realized absorptive capacity. The author ties the seemingly isolated bits of literature together into an integrative theoretical model for testing.

INTRODUCTION
In order to extract strategic value from information technologies (IT), firms have to apply IT capabilities to harness and exploit their knowledge capabilities to continually innovate their business products, services, and processes. Knowledge management researchers have been trying to link investments on information technology for knowledge management with firm performance. The current knowledge management literature shows mixed results in establishing a relationship between IT investment on firm performance, which has been attributed to factors such as sample size, data sources, and industry type (Devaraj & Kohli, 2003; Kohli & Devaraj, 2003). However, we argue that central problem is that the relationship has not been conceptualized through the lens of three aspects of firm innovations: IT-Based Knowledge Capabilities (IT-KC), Absorptive Capacity, Ambidexterity and Commercialization of Innovations (CI).
In this study, we examine the knowledge capabilities that are supported and/or enabled by information technology (IT) and posit a theoretical model that establishes a link between IT and innovation derived through IT-based knowledge capabilities. We draw on knowledge-based view of the firm and argue that IT-KC better enable firm innovation by enabling new idea generation and facilitating the conversion of these ideas into new products and services that can be introduced into the market. In addition we argue that link between IT-KC and CI are mediated by Ambidexterity and Absorptive Capacity.

In this study, we examine the knowledge capabilities that are supported and/or enabled by information technology (IT) and posit a theoretical model that establishes a link between IT and commercialization derived through IT-based knowledge capabilities. This study is motivated by two major reasons. First, IT has become critical for supporting knowledge management initiatives and nurturing innovation (Alavi & Leidner, 2001). IT enables to better manage the creation, dissemination, and usage of knowledge and makes firms more productive and competitive (Davenport et al., 2008). IT-based knowledge capabilities are thus consequential to firm strategy (Joshi et al., 2010) and value creation (Joshi, Chi, Datta, & Han, 2010; Piccoli & Ives, 2005). However, an extensive survey of the existing literature on IT and management reveals that there is a conspicuous gap in the literature between IT and innovation. IT’s contribution and assistance in supporting, building, and strengthening a firm’s knowledge capabilities has been increasingly recognized (Alavi & Leidner, 2001; Sambamurthy & Subramani, 2005; Tanriverdi, 2005). The link between knowledge capabilities and firm innovation has also been emphasized (Cohen & Levinthal, 1990; Leonard-Barton, 1992; Leonard-Barton, 1995). Yet, limited research has been done to systematically examine the link between IT-based knowledge capabilities and innovation. A few conceptual and anecdotal studies have examined the relationships between IT-based knowledge capabilities and innovation (Davenport, 1993; Davenport, Prusak, & Strong, 2008; Holsapple & Singh, 2003). Even fewer studies have empirically investigated the aforementioned (Joshi, Chi, Datta, & Han, 2010; Sabherwal & Sabherwal, 2005; Tippins & Sohi, 2003). As more companies turn to IT in an attempt to enhance firm competitiveness, this gap must be systematically addressed by empirically examining specific innovation outcomes and processes from idea generation to new product introduction that may benefit from IT investment and practice. By doing so, an in-depth understanding of the relationship between IT-based knowledge capabilities and firm innovation becomes critical. Second, mixed results have been found in the literature in establishing a positive relationship between IT investment and its effect on firm performance, which may be attributable to a number of factors such as sample size, data sources, and industry characteristics (Kohli & Devaraj, 2003). However, emerging empirical evidence has shown that IT does not necessarily create a competitive advantage and there is no significant direct relationship between IT investment and firm performance (Hitt et al., 1996; Kohli & Devaraj, 2003; Mahmood & Soon, 1991; Powell & Dent Micaleff, 1997; Tippins & Sohi, 2003; Zahra & Covin, 1993). Here, we postulate that firm innovation may be an important intermediate factor between IT investment and firm performance outcomes and an investment in IT itself is less likely to drive competitive advantage for firms. Instead, to extract strategic value from IT, firms have to use IT to exploit IT-based knowledge capabilities to continuously innovate their products, services, and business processes. To our knowledge this relationships has not been systematically examined in the IT literature.

To bridge the gap in the existing literature, we draw on knowledge-based view of the firm to examine the link between IT and commercialization of innovations. We argue that IT-based knowledge capabilities better enable firm innovation by enabling new idea generation and facilitating the conversion of these ideas into new products and services that can be introduced into the market.
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