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Customer knowledge management and IT-enabled business model innovation: A conceptual framework and a case study from China

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Summary This paper provides a conceptual framework to explore the linking mechanisms between customer knowledge management and IT-based business model innovation. With a case study from a Chinese leading telecommunications company, this paper attempts to empirically justify the model. In this conceptual model, three types of customer-related knowledge (i.e., knowledge about customer, knowledge from customer and knowledge for customer) contribute to value creation in business model innovation within different mechanisms. Meanwhile, IT increases knowledge accessibility for both firms and customers in value delivery, and enables firms to increase revenue streams with lower costs in value capture for business model innovation. The study links customer knowledge management research to business model innovation literature, and extends the customer knowledge management research through integrating both customer perspective and firm perspective. For practitioners, this study may help companies to understand the linking mechanisms and identify the opportunities of gaining benefit from bridging customer knowledge management and business model innovation.

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Introduction

The literature has highlighted the importance of business model design to firm performance (e.g., Afuah, 2004; Zott & Amit, 2008), especially with the emergence of the Internet technology and its massive adoption for e-business (Ghaziani & Ventresca, 2005). Despite scholars may use different definitions of business model in different ways, there

is some consensus that it describes the design of the value creation, delivery and capture mechanisms to be employed by firms (Chesbrough, 2010; Chesbrough & Rosenbloom, 2002; Teece, 2010; Zott, Amit, & Massa, 2011). Due to the post-industrial rise of the knowledge economy and digital technology, IT-enabled business model becomes an important locus of innovation and the design of an appropriate IT-enabled business model is increasingly seen as a crucial business decision for firms (Amit & Zott, 2001; Chesbrough, 2010; Teece, 2010).

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Meanwhile, as Teece (2010) noted, in order to successfully realize the potential of business model, firms need to be more customer-centric—“deliver value to customers, entice customers to pay for value, and convert those payments to profit” (Teece, 2010, p. 172), and manage customer-related knowledge more effectively (Rollins & Halinen, 2005). In doing so, firms need to not only actively acquire knowledge from customers, but also activate the knowledge interaction between firms and customers and the knowledge sharing among users (Baldwin, Hienerth, & von Hippel, 2006; Franke & Shah 2003; von Hippel, 1986, 1994). Therefore, understanding customers’ demand and behavior through managing the knowledge flow between a firm and its customers becomes a critical activity for business model innovation (Novo, 2004; Smith & McKeen, 2005). However, it is worth noting that the linkage between customer knowledge management and business model innovation remains a less discussed issue in the literature. In addition, although the importance of IT to customer knowledge management and business model innovation has been emphasized in the literature (Amit & Zott, 2001; Rowley, 2002), the process and mechanisms behind the influence of customer knowledge on IT-enabled business model innovation remain mostly as a black box (Zott et al., 2011). This paper attempts to bridge these theory gaps. More specifically, in this paper we focus on two related questions. First, what types of customer-related knowledge are included in IT-enabled business model innovation and how do these different types of knowledge influence the process of business model innovation? Second, as an enabler for business model innovation, how does IT influence the linkage between customer-related knowledge and business model innovation? In doing so, we introduce a conceptual framework to capture the linking mechanisms between customer knowledge management and IT-enabled business model innovation through integrating both customer perspective and service provider/producer perspective. Then case study method will be employed to validate this conceptual framework.

The rest of the paper is organized as follows: A conceptual framework gives the research framework; research method describes the case subject and data collection; the empirical results from a longitudinal case study are presented in case study; and finally, in the discussion and conclusion section of the paper, we provide a summary of the research findings, theoretical contributions, managerial implications, limitations and future research directions for the study.

A conceptual framework

A business model defines how a company creates and delivers value to customers, and then converts payments received to profits (Teece, 2010). In essence, it describes the design or architecture of the value creation, delivery, and capture mechanisms (Chesbrough, 2010; Chesbrough & Rosenbloom, 2002; Teece, 2010; Zott et al., 2011). Value creation is defined as the process in which a firm makes or increases the value flows embodied in and/or associated with market offerings for its customers and business partners (Amit & Zott, 2001; Teece, 2010). Value delivery refers to the stream of activities through which a firm provides

market offerings and associated value flows to its customers (Amit & Zott, 2001; Morris, Schindehutte, & Allen, 2005). Value capture refers to a variety of practices, methods and mechanisms that a firm attempts to realize economic benefit from offering value flows to its customers (Dubosson-Torbay, Osterwalder, & Pigneur, 2002; Gambardella & McGaham, 2010; Teece, 2010).

The concept of business model becomes prevalent with the widespread use of information technology since the 1990s. A substantial body of research has focused on IT-enabled business model, because IT provides new ways in which firms interact with their customers (Brynjolfsson & Hitt, 2004) and opens new horizons for business model innovation by creating unconventional exchange mechanisms and transaction architectures (Amit & Zott, 2001; Mendelson, 2000). Although the generic typologies and the components of IT-enabled business models have been frequently discussed (see Zott et al., 2011 for a literature review), none of the prior studies has analyzed the relationship among business model components and customer knowledge management. We attempt to fill this research gap by investigating the linking mechanisms between customer knowledge management and IT-enabled business model innovation (see Fig. 1).

Customer knowledge management as sources of value creation

In turbulent business environment, companies often highly value external knowledge outside the company (Chesbrough, 2003). As a kind of external knowledge, customer knowledge is viewed as an important resource that can be managed to support new product development (Joshi & Sharma, 2004), to facilitate the sensing of emerging market opportunities (Gibbert, Leibold, & Probst, 2002), and to improve long-term customer relationships (Darroch & McNaughton, 2003).

As such, customer knowledge management is concerned with the management and exploitation of customer-related knowledge (Rowley, 2002). In general, customer-related knowledge involved in the interactions between a firm and its customers can be classified into three types (see Fig. 2): knowledge about customer, knowledge from customer, and knowledge for customer (Gibbert et al., 2002; Smith & McKeen, 2005).

Knowledge about customer is a kind of knowledge that the firm attains in order to know its targeted customer better (e.g., record of customer transactions, products used, and certain personal preferences) (Smith & McKeen, 2005). Such knowledge is actively acquired from customers or other agents and accumulated as a valuable knowledge base during long-term business operations (Itami & Nishino, 2010). Companies can attain such knowledge from websites, search portals, surveys, or product catalogs in analyzing and exploring potential customer needs. Most often, this type of knowledge is associated with the design, development and improvement of product and service.

Knowledge from customer refers to the knowledge feedbacked and contributed by customers (e.g., the ideas, thoughts, and information a firm receives from its customers regarding their preferences, creativity, or consumption

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