



Influence of ERP systems on business process agility

Ravi Seethamraju^a, Diatha Krishna Sundar^{b,*}

^a *The University of Sydney Business School, Sydney, Australia*

^b *Indian Institute of Management Bangalore, Bangalore, India*

KEYWORDS

ERP;
Business process agility

Abstract Past research on the effect of ERP systems on agility is contradictory, and research on the post implementation effects of ERP systems on agility is limited. Employing a cross sectional field study, this exploratory study analyses how key defining features of enterprise systems environment—integration, process optimisation, and best practices—affect agility. Standardisation of processes has mixed effect on agility and depends on the extent of standardisation implemented and whether it included prior simplification. Rather than the ERP-system enabled environment, the inadequacies in implementation and poor process optimisation prior to ERP implementation are restricting process agility.

© 2013 Indian Institute of Management Bangalore. Production and hosting by Elsevier Ltd. All rights reserved.

Introduction

Ever-changing customer requirements, unrelenting financial reporting requirements, and competitive cost pressures require firms to rapidly adjust, redesign, and adapt their processes and capabilities. In today's volatile business environment, ability to sense, shape, and respond to dynamic customer needs, emerging business opportunities, and unprecedented threats are considered a critical business capability (Pralhad, 2009). In addition, dealing with challenges associated with the exponential growth of data volumes, organisational realignments that include mergers,

acquisitions, spin-offs, and outsourcing decisions require continuous unbundling and re-bundling of business processes. Thus, agility defined as the ease and speed with which firms can reconfigure, redesign, and realign their processes to respond to these needs, threats, and opportunities (Raschke & David, 2005; Sambamurthy, Bharadwaj, & Grover, 2003), has become an essential capability for business organisations today.

Though the relationship between a firm's agility and information technologies has been studied in the past, the underlying contradictions between information technology (IT) and agility have not been satisfactorily researched (Lu & Rammurthy, 2011). Some studies argue that IT enables agility by improving decision making, facilitating communication (Davenport, Harris, & Cantrell, 2004), delivering electronic integration (Nazir & Pinsonneault, 2012), and providing digital options (Sambamurthy et al., 2003). Others contend that IT impedes agility (Overby, Bharadwaj, & Sambamurthy, 2006; Weil, Subramani & Broadbent, 2002) partly due to rigidity of information systems and technology artifacts (Galliers, 2007; Wensley & Stijn, 2007). Even though several IT vendors and consultants have made it

* Corresponding author. Tel.: +91 80 26993276.

E-mail addresses: ravi.seethamraju@sydney.edu.au (R. Seethamraju), diatha@iimb.ernet.in (D. Krishna Sundar).

Peer-review under responsibility of Indian Institute of Management Bangalore



Production and hosting by Elsevier

their key strategy to help organisations achieve agility, an understanding of the relationship between firm agility and information technologies is limited (Lu & Rammurthy, 2011; Nazir & Pinsonneault, 2012). While leading vendors offer a variety of technical and organisational solutions to achieve agility, and software vendors promise this agility through their enterprise systems and their suite of applications, their capacity to deliver the required capability has not been empirically studied (Tallon, 2008).

With enterprise resource planning (ERP) systems firmly entrenched in most firms today and considered the backbone to managing business processes, understanding the influence of these systems on process agility is important. Despite the accumulated knowledge about ERP projects, research on post-implementation effects of ERP systems in general and on agility and innovation in particular is still limited (Nazir & Pinsonneault, 2012; Peng & Nunes, 2009; Schlichter & Kraemmergaard, 2010). With ERP systems associated with agility (Goodhue, Chen, Boudreau, Davis, & Cochran, 2009) as well as rigidity (Galliers, 2007), the underlying contradictions are largely unknown and under researched. This research extends prior research on the post-implementation effects of ERP systems in firms and analyses the specific role played by ERP systems on process agility. Set against a resource-based view, the research analyses the link between ERP systems and business process agility from the perspective of the benefits of ERP systems. By analysing the impact of capabilities such as integration, process optimisation, and best practices enabled by the implementation of ERP systems on process agility, this study contributes to the literature by demonstrating how process agility, an intermediate outcome, is likely to affect organisational outcomes such as cost, efficiency, and profit (Tallon & Pinsonneault, 2011). This paper will first review the literature on ERP systems and agility and discuss the research model emerging from the literature review. It will then describe the research method employed in this study, and finally, present its findings and conclusions.

Literature review

Business processes are central to the way organisations and individuals interact with one another (Malone, Crowston, & Herman, 2003). Dealing with the effects of globalisation, the pressure to bring out new products and services rapidly, and improving operations are the top three priorities of business organisations in the future (Gartner Research, 2012) and business processes are the key enablers in dealing with these challenges. The current requirements for enterprises to be cost-effective and responsive make it difficult for enterprises to stick to well-defined, static processes. It is considered necessary for a firm to rapidly reconfigure, modify, and shape a process in order to respond to internal and external changes (Ray, Barney, & Muhanna, 2004).

Agility, a complex concept, has been analysed in a range of disciplines. Built from the literature on flexibility in economics, the concept of agility was further developed in agile manufacturing and in strategic management and information systems literature. Agility merges the four competitive dimensions of cost, quality, dependability, and flexibility and moves beyond them to encompass an ability

to respond rapidly to any unexpected changes in the market and business environment. Flexibility refers to the capability of an organisation to move from one task to another, adapt to expected changes and respond to change requests economically (Becker, 2001), while agility is about the speed to detect and respond to changes in the business environment (Li, Chung, Goldsby, & Holsapple, 2008).

Though different facets of agility have been defined and discussed across the literature, operationalisation of the process agility construct has only been recently discussed (Raschke & David, 2005; Tallon, 2008). Some researchers consider agility as a broad concept with two dimensions – “sense” and “respond” capabilities. Agility is defined as “the ability to detect opportunities for innovation and seize those competitive market opportunities by assembling requisite assets, knowledge, and relationships with speed and surprise (Sambamurthy et al., 2003: p.245). Li et al. (2008) used two dimensions – speed and capabilities of the firm to use resources and to respond to changes – to define agility. Sambamurthy et al. (2003) defined business agility as the capability of firms in managing their internal operations and interactions with their eco-systems and identified three types of agility – customer agility, partnership agility, and operational agility.

While the first two deal with managing relationships with customers and partners, operational agility refers to the ability to rapidly redesign existing processes. Similarly, Li et al. (2008) identified two dimensions of agility – alertness and responsiveness. Thus, the key dimensions of agility are the ability to sense or detect changes in the environment with speed and the ability to respond to those changes with speed.

Digitised platforms of business processes that include ERP, customer relationship management (CRM), and supply chain management (SCM) systems, help firms build and deliver this critical capability, i.e. agility (van Oosterhout, Waarts, & van Hillegersberg, 2006; Sambamurthy et al., 2003). This capability not only helps firms in developing new information-based products and services but also in building organisational and inter-organisational relationships through streamlining and reconfiguring their processes (Agarwal & Sambamurthy, 2001). Enterprise resource planning systems are large scale, real time integrated application packaged software that support business processes, information flows, reporting, and business analytics (Seddon, Calvert, & Yang, 2010). These systems impound deep knowledge of designing and executing business processes and since they are complex systems they may cause assimilation difficulties and challenges (Robey, Ross, & Boudreau, 2002). Despite huge investments in the software, in implementation, maintenance, user training, and continuous updates, many implementation failures and less than satisfactory benefits have been reported in the literature (Davenport, 2000; Nah, Tan, & Teh, 2004; Seddon et al., 2010).

Impact of investments in information technologies on a firm’s performance has been an important issue for practitioners and academics (Wade & Hulland, 2004). Most of the literature on IT impact has focused on the standard firm performance metrics (Oh & Pinsonneault, 2007) and largely overlooked agility. Literature on agility has tended to focus on conceptual concerns such as benefits of agility (Galliers,

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات