Chapter 22
A New Dynamic Framework for Managing ERP Development and Enterprise Strategy

Ben Clegg
Aston University, UK

Yi Wan
Aston University, UK

ABSTRACT

The enterprise management (EM) approach provides a holistic view of organizations and their related information systems. In order to align information technology (IT) innovation with global markets and volatile virtualization, traditional firms are seeking to reconstruct their enterprise structures alongside repositioning strategy and establish new information system (IS) architectures to transform from single autonomous entities into more open enterprises supported by new Enterprise Resource Planning (ERP) systems. This chapter shows how ERP engage-abilities cater to three distinctive EM patterns and resultant strategies. The purpose is to examine the presumptions and importance of combing ERP and inter-firm relations relying on the virtual value chain concept. From a review of the literature on ERP development and enterprise strategy, exploratory inductive research studies in Zoomlion and Lanye have been conducted. In addition, the authors propose a dynamic conceptual framework to demonstrate the adoption and governance of ERP in the three enterprise management forms and points to a new architectural type (ERPIII) for operating in the virtual enterprise paradigm.

INTRODUCTION

Enterprise Systems (ESs) have progressed over the last fifty years as a result of constant interaction between changing business requirements, technological maturity, and organizational structures

(Wortmann, 2000). Perceptive people in both enterprise management and information systems suggest that there is soon going to be available a truly integrated technical solution for Enterprise Resource Planning (ERP) systems (Chorafas, 2001), that will make the newly conceived 'virtual value chain' and the e-marketplace concepts a reality (Rayport & Sviokla, 1995; Porter & Millar,

1985). As recent trends in business and technology have focused on inter-organizational collaboration and information system that enhance them (Banker et al., 2010), many companies recognize the critical interdependencies that exist among the firms, suppliers and customers, which cannot be described in terms of simple contractual exchanges, but involve the interactions and network effects with appropriate new enterprise paradigms and information technology. The importance of such inter-firm (i.e. intra-enterprise) relations has been recognized by the structural concepts of vertically integrated enterprises (Lynch, 2003; Joskow, 2003), extended enterprises (Powell, 1990; Davis & Spekman, 2004), virtual enterprises (Byrne & Brandt, 1993; Goranson, 1999), business dynamic networks and strategic alliances (Todeva, 2006; Reuer, 2004) and in the related technical support systems such as web-based Service Oriented Architecture (SOA), Platform as a Service (PaaS), and Software as a Service (SaaS) (Bass & Mabry, 2004; Torbacki, 2008; Candido et al., 2009). Particularly, the *enterprise* here is defined as "…an entity including partnerships or associations that can be made up of parts of different companies". Although some arguments concern the core competences that affect the design and management of the enterprises structures (Binder & Clegg, 2006), the "interconnectedness" of intra-enterprise governance is criticized as there lacks sufficient consideration and contribution to the impact of ERP systems on future enterprise strategies and *vice versa*. In addition, since current prevailing ERP systems are not able to support virtual enterprise structures, we propose a contingency term called "ERPIII" in this chapter to describe such future agile enterprise management systems.

This research study is important because of the increasing competitive and dynamic business circumstance are forcing modern companies to improve their competencies by incessantly learning and re-engineering to adapt to rapid changes around highly complex supply chain in the era of globalization. Along with the emerging multi-national virtual networks, more importance has been attached to the inter-organizational network, "agile enterprise" and "agile manufacturing" capabilities (Pal & Pantaleo, 2005; Cummins, 2009; Vazquez-Bustelo & Avella, 2006), in order to continually evolve and optimize the strategic international trade and operations. As consequence, advisable enterprise management strategies and advanced information technologies (e.g. ERP systems) would play as the active tools to enhance intra-enterprise performances, increase the customer-driven markets share and high flexibilities in product/service and business processes, shorter global manufactured product life cycle, narrow niches, handle diverse environmental conditions, and create value within the context of globalized world (Palaniswamy & Frank, 2000). This chapter, therefore, delivers a new dynamic framework for managing ERP systems development and enterprise strategies concurrently.

Extant studies on ERP systems tend to focus on making core system modules better by blending or uniting them with new types of functions or applications to form "extended ERP" (Michel, 2000) as managers have been enticed toward new information technologies for the key to survival and developing a competitive edge (Chen, 2001) rather than investigating how ERP systems can be better designed to support and govern dynamic intra-enterprise management strategies. Also, despite an emerging body of literature about enterprise management strategies has drawn much attention in exploring new enterprise structures and significant organizational forms (Browne & Zhang, 1999; Davis & Spekman, 2004), design and operation to gain core and unique competences (Zhang & Dhaliwal, 2008; Binder & Clegg, 2006), it neglects how enterprise management paradigms can be applied to develop ERP systems from an information systems perspective. Therefore, commencing with: inter-company collaboration as a point of departure from conventional thinking, rather than individual companies, the objectives of this chapter we address are:

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