Chapter 11

Enterprise Resource Planning and Knowledge Management Systems: An Empirical Account of Organizational Efficiency and Flexibility

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Enterprise resource planning (ERP) systems and knowledge management (KM) promise organizations the benefits of enhancing competitiveness and continuous revitalization. This chapter compares the characteristic differences and similarities between the two initiatives and examines how they influence organizational efficiency and flexibility when implemented within a global engineering firm. We suggest that the two initiatives are conceptually complementary but can only create a synergy when the design of organizational routines and practices fits into the metaroutines imposed by ERP and KM, and the social processes are nurtured within functions and cross-functionally.


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INTRODUCTION

Two new organizational initiatives can be identified that are being or have been widely implemented. The first is ERP systems (Cerullo and Cerullo 2000) and the second is knowledge management (KM) systems (Davenport, De Long and Beers 1998). ERP systems are sold as a vehicle for integrating the core business activities of an enterprise, such as finance, logistics and human resources. They are based on developing common IT infrastructures and business processes where previously, especially in large globally distributed corporations, many systems and processes co-existed, making integration very difficult. The suggestion is that these systems can play an important part in leveraging organizational competitiveness through improving the way in which strategically valuable information is produced, shared and managed. Through improving these processes organizational efficiency should be enhanced. KM systems emphasize how firms can enhance competitive advantage through the more effective utilization of their knowledge assets through allowing free flow of knowledge across organizations (Birchall and Tovstiga 1999; Brand 1998; Starbuck 1992). Through improved knowledge sharing and knowledge creation, flexibility should be enhanced.

While prior studies have provided useful insights on each of these initiatives independently, few empirical studies take into account both initiatives and investigate their influence on organizational efficiency and flexibility. In this paper we examine the extent to which these two initiatives, when enacted within a single organization, are complementary or contradictory, and how the combination of the two influences organizational efficiency and flexibility.

Conceptual Foundations

The ability of firms to effectively respond to environmental opportunities, while simultaneously developing efficient internal processes, has long been seen as central to an organization’s success (Geletkanycz and Hambrick 1997; Volberda 1996). A large body of literature has, thus, focused on examining the interface between the external environment and internal organizational processes, providing theoretical explanations that pinpoint the needs for efficiency and flexibility (e.g. Davidow and Malone 1992; Wright and Snell 1998), and more critically, a tradeoff between them (Ghemawat and Costa 1993).

Influenced largely by the information processing paradigm, one stream of theoretical development has tended to focus on improving efficiency through the continuous accumulation of information (e.g. Cyert and March 1963; Epple, Argote and Devadas 1996). Others have emphasized the importance of organiz-
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