Implementing enterprise resource planning and knowledge management systems in tandem: fostering efficiency and innovation complementarity

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Abstract

This paper examines the simultaneous implementation within a single organization of two contemporary managerial information systems—Enterprise Resource Planning (ERP) and Knowledge Management (KM). Exploring their simultaneous deployment within an organization provides an opportunity to examine the resulting interactions and impacts. More specifically, we examine their combined influence on improving organizational efficiency *and* flexibility, two outcomes which traditional organizational theory suggests are incompatible. Through an interpretative case study, the research confirms that: (1) the two systems can be implemented in tandem to good effect; (2) complementarity between the two systems is possible, although this is not an automatic outcome, it has to be fostered. This complementarity is analyzed in relation to the four mechanisms (namely partitioning, enrichment, metaroutines and switching) proposed by Adler, Goldoftas and Levine (Organization Science 10 (1999) 43), as vital for the simultaneous development of organizational efficiency and flexibility.

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1. Introduction

Within the field of IS/IT there has been a tendency to embrace new concepts so that the field has been populated by example after example of one fad or fashion after another (Galliers & Newell, 2001). A key problem here is that these 'latest fads' often appear to disregard past learning from the IS/IT literature. So, for example, while Davenport (1996) belatedly referred to Business Process Reengineering (BPR) as 'the fad that forgot people', so Knowledge Management (KM) has been criticized for emphasizing technology at the expense of people (Scarbrough, Swan & Preston, 1999). Moreover, these different IS/IT fashions are often conceptually rather different from one another. Indeed, it has been argued that each new fashion follows on from the last in the sense that it addresses the problems that were an unintended negative consequence of the previous one (Benders & van Veen, 2001). For example, BPR was typically associated with down-sizing, which meant that many employees were made redundant as organizations sought to improve the efficiency of their business processes and reduce costs. Many organizations subsequently found that an unintended negative consequence of their BPR initiative was a loss of organizational knowledge, which they had quite literally allowed to 'walk out the door' in the form of redundant employees. Subsequent KM initiatives were arguably a response to this problem.

What this faddishness means in practice is that many companies introduce new IS/IT concepts, often in quick succession. Indeed, two or more new IS/IT fashions may be being implemented simultaneously within a given company. Given that the implementation of multiple systems is likely to produce effects that are different than the effects of implementing a single system, research investigating the simultaneous implementation of IS/IT concepts would seem to be an issue worthy of investigation. This is so especially where the particular IS/IT concepts being introduced concurrently are rather different in their underlying philosophy. This then, is the focus of this paper. We explore the impact of the concurrent implementation of an Enterprise Resource Planning (ERP) and a Knowledge Management (KM) system within a single case company. Both ERP and KM systems are currently being widely implemented across organizations (see, for example, respectively *Communications of the ACM*, 2000 and Alavi & Leidner, 2001). In all probability they are being implemented simultaneously, or at least their implementations overlap in many companies, as in the case company described in this paper. Specifically, we examine the impact of introducing these two initiatives simultaneously within a single organization.

In this introductory section we examine the key defining characteristics of ERP and KM systems. ERP systems have been defined as enterprise-wide packages that tightly integrate business functions into a single system with a shared database (Lee & Lee, 2000). They have also been characterized as comprehensive software solutions that integrate organizational processes through shared information and data flows (Shanks & Seddon, 2000). Thus, ERP systems are marketed as a vehicle for integrating the core business activities of an enterprise, such as finance, logistics and human resources, and as a means of overcoming problems associated with so-called