Chapter I

ERP Systems Impact on Organizations

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ABSTRACT

Enterprise Resource Planning (ERP) systems are in most cases implemented to improve organizational effectiveness. Current research makes it difficult to conclude how organizations may be affected by implementing ERP systems. This chapter addresses this issue by presenting an artifact evaluation of ERP systems. The evaluation is based on the Competing Values Model (Quinn & Rohrbaugh, 1981; Rohrbaugh, 1981). The evaluation shows that ERP systems support effectiveness criteria, related to internal and rational goals of organizations. The evaluation also points out weaknesses in ERP systems, especially in areas related to human resource management and organizational flexibility. The result of the evaluation is used to discuss the impact of ERP systems on organizations and is presented as a series of hypotheses.
INTRODUCTION

Enterprise Resource Planning (ERP) systems have had an enormous impact on businesses and organizations around the world (Howcroft & Truex, 2001; Swanson, 2000). ERP systems are in most cases implemented with the goal to improve some aspect of the organization, e.g., strategic, organizational, business, management, operational, or IT-infrastructure (Hedman & Borell, 2002).

Studies show improvements, such as business process improvement, increased productivity and improved integration between business units (Davenport, 2000; Hedman & Borell, 2002; Hitt, Wu, & Zhou, 2002; Howcroft & Truex, 2002; Masini, 2001; Murphy & Simon, 2001; Poston & Grabski, 2001; Shang & Seddon, 2000). In order to achieve these benefits, organizational changes are required (Van der Zee & De Jong, 1999). Thereby, ERP systems are often assumed to be a deterministic technology, since organizations have to align their organizational structure, business process and workflow to the embedded logic of the ERP system (Glass, 1998). However, the casual relationship between ERP systems and organizational change has been questioned (Boudreau & Robey, 1999). The impact and benefit of ERP systems is unclear (Andersson & Nilsson, 1996). The only thing we know for certain is that the implementations are very resource consuming (Davenport, 1998).

The ability to determine or to appraise the impact of ERP systems would be of great importance from both theoretical and practical perspective. However, this is difficult for several reasons: First, it is not possible to draw explicit conclusions from IS benefit research (DeLone & McLean, 1992) on ERP systems. Second, there are inconsistent and contradictory findings from research on information technology and organizational change (Robey & Boudreau, 1999). Third, the interdependency between ERP system and organization requires interpretive and holistic evaluation methods (Borell & Hedman, 2001). Fourth, the measurement of organizational effectiveness is an elusive, complex and socially constructed construct (Campbell, 1977). Fifth, there is a lack of theorizing regarding the IT-artifact (Orlikowski & Iacono, 2001).

The purpose of this chapter is to evaluate the market leading ERP system, i.e., SAP R/3 Enterprise, in order to increase the understanding of how ERP systems may affect organizations and organizational effectiveness. The next section argues for conducting and evaluation of ERP systems with IS research as a frame of reference. The subsequent sections present an artifact-evaluation approach, an evaluation framework based on the Competing Values Model (Quinn & Rohrbaugh, 1981; Rohrbaugh, 1981), and the ERP system in question. In the final section, the results are summarized and presented as a series of hypotheses speculating how ERP system might affect organizations and organizational effectiveness. Future research directions are also suggested.
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