

The critical success factors for ERP implementation: an organizational fit perspective

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Received 20 May 2001; accepted 1 September 2001

Abstract

Since early 1990s, many firms around the world have shifted their information technology (IT) strategy from developing information systems in-house to purchasing application software such as enterprise resource planning (ERP) systems. IT managers responsible for managing their organization's ERP implementation view their ERP systems as their organizations' most strategic computing platform. However, despite such strategic importance, ERP projects report an unusually high failure rate, sometimes jeopardizing the core operations of the implementing organization. This study explores the root of such high failure rate from an "organizational fit of ERP" perspective. Based on the relevant literature, we define the concept of organizational fit of ERP and examine its impact on ERP implementation, together with ERP implementation contingencies. The results from our field survey of 34 organizations show that ERP implementation success significantly depends on the organizational fit of ERP and certain implementation contingencies.

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Keywords: ERP implementation; Organizational fit; ERP adaptation; Process adaptation; Organizational resistance

1. Introduction

Under the pressure to proactively deal with the radically changing external environment, many firms have changed their information system (IS) strategies by adopting application software packages rather than in-house development [12,25]. An application package such as enterprise resource planning (ERP) system is one solution to the information technology (IT) industry's chronic problems of custom system design: reduced cost, rapid implementation, and high system

quality [28]. Although application packages have these benefits over custom design of applications, packaged software has problems of their own: uncertainty in acquisition [14] and hidden costs in implementation [29].

In a survey of the IT managers responsible for managing their organization's ERP projects, two-thirds of the respondents viewed their ERP systems as their organizations' most strategic computing platform [47]. Despite such perceived importance, it was reported that three quarters of the ERP projects were judged to be unsuccessful by the ERP implementing firms [13]. What makes ERP implementation so unsuccessful? Swan et al. [46] argued that the root of such high failure rate is the difference in interests between customer organizations who desire unique business solutions and ERP vendors who prefer a

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generic solution applicable to a broad market. Such conflicting interests led us to explore an organizational fit perspective of ERP implementation.

An important criterion used in selecting an ERP system is the ERP fit with the current business processes [9]. Although the fit between ERP and the organizational context is believed to be critical for successful ERP implementation, few examined the organizational fit issues of ERP empirically. Soh et al. [44] suggested that the organizational fit of ERP might be worse in Asia, because the reference process model underlying most ERP systems is influenced by European or US industry/business practices, which are different from Asian business practices.

The relative invisibility of the ERP implementation process is also identified as a major cause of ERP implementation failures [13]. Markus and Robey [33] attributed such invisibility to the unpredictably complex social interaction of IT and organization. The critical challenge of ERP implementation is believed to be the mutual adaptation between the IT and user environment [49]. Such mutual adaptation process brings the organization's existing operating processes and the packaged software's embedded functionality into alignment through a combination of software configuration and organizational change [49]. But there are conflicting views on which type of adaptation, package adaptation or organizational adaptation, is more desirable in the different contexts.

ERP diffusion agencies including ERP vendors and consulting firms recommend strongly that ERP projects embody the universally applicable 'best practice' and should be implemented without extensive adaptation of the packaged software [1]. In contrast, some academics maintain that the notion of 'best practice' is illusory and potentially disruptive because ERP does not provide models for every process of every industry and most firms usually reconfigure or add new functionality to ERP systems for optimal use within their unique context [46].

Besides, since ERP philosophy is process-based, rather than function-based, ERP necessitates disruptive organizational changes [17,49,50]. Successful ERP implementation must be managed as a program of wide-ranging organizational change initiatives rather than as a software installation effort [18]. Such IT-driven initiatives require change of the organization's socio-technical system, which is intertwined

of technology, task, people, structure, and culture [7]. Thus organizational resistance to change is identified as a critical success factor for ERP implementation [26,34]. In this study, we define the concept of organizational fit of ERP and empirically examine its impact on ERP implementation success along with the moderating roles of ERP implementation contingency variables such as ERP adaptation, process adaptation, and organizational resistance.

This paper is organized in five sections. First, ERP related literatures are reviewed. The next section introduces the research model and hypotheses. Research methodology is then described, followed by the presentation of the results. The paper concludes with the discussion of the research findings and implications for future research and practice.

2. Theoretical perspectives

2.1. Organizational fit of ERP

Because of the multiplicity of the organizational dimension, researchers studying IS contingencies have typically focused on the fit between specific organizational dimension and IS [21,23]. In a review of the IS contingency research, Weil and Olson [51] found that over seventy percent of the studies followed a model assuming that the better the fit among the contingency variables, the better the performance. They categorized the contingency variables of interest to IS researchers into strategy, structure, size, environment, technology, task, and individual characteristics.

Attributing the inability to realize value from IT investments to lack of alignment between the business and IT strategies, Henderson and Venkatraman [19] developed the 'strategic alignment model', emphasizing the multivariate fit among business strategy, IT strategy, organizational infrastructure and processes, and IT infrastructure and processes. With an exploratory survey of small business, Marius and Ashok [30] hypothesized that packaged software implementation success is positively associated with the degree of vendor fit with user organization and the degree of software fit with user organization, respectively.

In ERP research, Gattiker and Goodhue [10] suggested that while inter-dependences among sub-units

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