

Successful implementation of ERP projects: Evidence from two case studies

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Abstract

This research examines what factors facilitate or inhibit the success of ERP projects and what actions can be taken to bring troubled ERP projects under control. It uses a case study methodology grounded in business process change theory to compare a successful ERP implementation with an unsuccessful one. Data was collected by conducting interviews at various levels of the subject organizations and by examining their archived records when available. The study proposes that a cautious, evolutionary, bureaucratic implementation process backed with careful change management, network relationships, and cultural readiness can lead to a successful ERP project implementation as opposed to a revolutionary project scope mandated autocratically by top management without organizational readiness and proper change management. Some actions are also recommended that can help bring troubled ERP projects under control. © 2002 Elsevier Science B.V. All rights reserved.

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1. Introduction

It is well known by now that improper implementation of Enterprise Resource Planning (ERP) software projects can cause considerable problems for companies [1]. For instance, Hershey Foods Corporation in 1999 reported a 19% drop in 3rd-quarter profits and a 29% increase in

inventories over the previous year due to order-processing problems caused by its faulty \$112 million ERP implementation [2]. The city of Oakland too reported problems of missing or erroneous paychecks generated for city employees by its \$21 million ERP project [3]. Miller Industries reported a \$3.5 million operating loss in the 4th-quarter of 1999 due to the costs and inefficiencies of its ERP system, while WW Grainger Inc. reported a \$11 million reduction in operating earnings from its improper ERP implementation [4]. These numbers are startling but what is more a cause of concern is that these reported instances involve the software of all

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primary ERP vendors. Thus fault cannot be attributed to only one vendor. On the other hand, McKesson HBOC has reported a successful implementation of its \$50 million ERP back-office system that now processes sales orders totaling 1.5 million line items and \$100 million of business each day [5], whereas CaseBook Water & Power Technologies, a \$30 million manufacturer of water purification systems has seen improvements in materials management, project management, and employee productivity due to its ERP system [6].

Given the large financial commitment that an ERP project requires and the potential benefits it can offer if successfully implemented, it is important to understand what is needed to ensure a successful ERP implementation. Thus, two research questions are central to this paper: (1) What factors facilitate or inhibit the success of ERP projects, and (2) what actions can be taken to bring troubled ERP projects under control? This paper attempts to answer these questions by examining the ERP implementation experiences of two companies—one unsuccessful and the other successful. It draws on business process change (BPC) theory [7] as well as escalation theory [8] to identify what could have been done to turn around the first project, and to explain the success of the second project.

2. Theory

Since ERP implementation has come to involve changing the business processes of companies that implement such software [9,10], we felt that business process change theory may prove useful in explaining the outcomes of our case studies. BPC is defined as organizational initiative to design business processes to achieve significant (breakthrough) improvement in performance (e.g. quality, responsiveness, cost, flexibility, satisfaction, shareholder value, and other critical process measures) through changes in the relationships between management, information technology, organizational structure, and people [11,12]. These initiatives may differ in scope from process improvement to radical new process designs depending on the degree of change undertaken in

each organizational subsystem and their interactions. Thus, in any examination of BPC outcomes, consideration should be given to (a) the environmental conditions for change and (b) the ability of the organization to manage change in these conditions. Kettinger and Grover [7] have proposed a model that considers both these aspects of BPC management. According to their model, *any significant business process change requires a strategic initiative where top managers act as leaders in defining and communicating a vision of change. The organizational environment, with a ready culture, a willingness to share knowledge, balanced network relationships, and a capacity to learn, should facilitate the implementation of prescribed process management and change management practices. Process and change management practices, along with the change environment, contribute to better business processes and help in securing improved quality of work life, both of which are requisite for customer success and ultimately, in achieving measurable and sustainable competitive performance gains.* The individual components of the framework (shown in Fig. 1) are described below and applied to the subsequent case analysis to determine if they facilitate or inhibit the success of ERP projects.

2.1. Strategic initiatives

Process change typically begins with strategic initiatives (often included in the corporate strategic plan) from the senior management team [13]. These could be a reaction to a need or a proactive push to leverage potential opportunities [14]. Evidence also exists that strategic change, and arguably process change, is often incremental, informal, emergent, and is based on learning through small gains [15] versus being revolutionary and radical. According to [16], strategic initiatives can be forced on the organization through mandate (autocratic) or pushed through consensus within existing systems of the organization (bureaucratic). Alternatively, champions of change could emerge to seek out creative ideas and make them tangible [17].

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