# Enterprise Resource Planning (ERP):

## A Postimplementation Cross-Case Analysis

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## ABSTRACT

*In today's intensely competitive marketplace, companies can benefit strategically and tactically from enterprise resource planning (ERP) systems, if implemented correctly. However, with failure rates estimated to be as high as 50% of all ERP implementations, companies can be negatively impacted by a poorly performing ERP system. The research on ERP has focused on events leading to the selection, evaluation, and implementation of the ERP system. The intent of this research is to identify new or lightly researched theories regarding the difficulties of ERP implementations that can help practitioners successfully manage ERP implementations by performing a post-ERP implementation examination of eight corporations. We examine operations management (OM) literature rather than information systems (IS) literature in order to provide IS readers with an alternative yet valuable analysis. Further, we purposely avoid well-established findings by performing a large literature review. This article is based on a qualitative research design using case-study methodology. The propositions derived from the case studies form solid insight into the considerations that may influence the success of an ERP system.*

*Keywords:    case studies; enterprise resource planning (ERP); implementation; planning; project management; technology*

## INTRODUCTION

In today's highly competitive manufacturing environment, firms are implementing enterprise resource planning systems to address the problem of fragmentation of information or "islands of information" in business organizations. ERP systems promise to computerize an entire business with a suite of software modules covering activities in all areas of the business. Furthermore, ERP is now being promoted as a critical link for integration between all functional areas within a firm's supply chain, and has shown to be a significant contributor to a corporation's success, if implemented correctly. ERP systems improve efficiency within the four walls of an enterprise by integrating and stream-

lining internal processes (Anderson, 2000; Koch, 1999). Kalling (2004) has also speculated that ERP may be a source of competitive advantage.

The ERP implementation efforts of many manufacturing companies have resulted in partial failure and, in some cases, total abandonment. Trunick (1999) reports that 40% of all ERP installations only achieve partial implementation, and nearly 20% are scrapped as total failures. Some of the failures have been shown to be user related in that new technology is not always acceptable (Nah, Tan, & Teh, 2004). An American Production and Inventory Control Society (APICS) Conference Board report issued in June 2001 stated that 40% of participants failed to achieve their business case after having implemented ERP for at least 12 months (Salopek, 2001). Other authors have suggested that the failure rate may be higher than 50% (Escalle, Cotteleer, & Austin, 1999). In a recent survey by Deloitte Consulting LLC, 25% of the 64 Fortune 500 companies surveyed said they suffered a drop in performance when their ERP systems went live (Evangelista, 1998). This is after believing that they had successfully installed the system. A recent study conducted by Professors Austin and Nolan of the Harvard Business School reveals that a remarkable 65% of executives believe ERP systems have at least a moderate chance of hurting their business because of implementation problems (Cliffe, 1999). At present, ERP is a new phenomenon and the research relating to ERP implementations is very limited (Al- Mashari, 2000; Dong, 2001; Nah, Lau, & Kuang, 2001; Parr, Shanks, & Drake, 1999). Most of the research to date focuses on preimplementation activities and provides some answers to a successful "path forward" for firms wanting to implement an ERP system. Research shows that some firms have successfully implemented ERP systems with some excellent performance improvement (Anderson, 2000; Melnyk & Stewart, 2002). However, since many ERP systems fail to meet their objectives after going live (Cliffe, 1999; Salopek, 2001), it is logical to conclude that there must be postimplementation improvements be-

ing performed by firms committed to using ERP as a successful business tool. This research seeks to uncover new information about the successful implementation and management of ERP systems by analyzing eight firms who have multiple years' experience, with varying degrees of success, with ERP systems.

The intent of this research is to identify new or lightly researched theories regarding the difficulties of ERP implementations that can help practitioners successfully manage ERP implementations by performing a post-ERP implementation examination of eight corporations. Our findings are formed into propositions. We examine operations management literature rather than information systems literature in order to provide IS readers with an alternative, yet valuable analysis. Further, we purposely avoid well-established findings by performing a large OM literature review.

## LITERATURE REVIEW

OM ERP implementation literature can be segmented into five major areas, with each addressing several subtopics. These areas include strategic considerations, costs, training, project management, and the implementation process. Since our goal is to provide new ideas and theories, we reviewed the existing OM literature to gain insight into established theory on why ERP implementations are so difficult and often fail. This analysis allowed us to refrain from publishing heavily researched areas that may not make much of a contribution. Table 1 provides a summary of an extensive and critical review of the OM literature.

ERP adoption must be seen as a business decision (See for example: Anderson, 2000; Brakely, 1999; Ng & Ip, 1999) and not as a technology decision. This viewpoint will be helped along in the organization if strategic benefits are identified initially (i.e. response to customer demands, improved communications within and outside the firm, and improved customer and supplier relationships (See for example: Davenport, 2000; Herr, 1994). Top management support is not only necessary but critical in a project

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