



Enterprise Resource Planning (ERP): A Postimplementation Cross-Case Analysis

Joseph R. Muscatello, DBA, Kent State University, USA

Diane H. Parente, PhD, Penn State Erie, USA

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 mod-

ules 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, Cotteleur, & 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

18 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/article/enterprise-resource-planning-erp/1297

Related Content

Personalization Technologies in Cyberspace

Shuk Ying Ho (2009). *Encyclopedia of Information Science and Technology, Second Edition* (pp. 3065-3071).

www.irma-international.org/chapter/personalization-technologies-cyberspace/14027

Case Study on Collaborative Work Experiences with Web 2.0 in Spanish Primary Schools with the Highest Institutional Accreditation Level

Ana Iglesias Rodríguez, María Cruz Sánchez Gómezand Concepción Pedrero Muñoz (2014). *Journal of Cases on Information Technology* (pp. 33-50).

www.irma-international.org/article/case-study-on-collaborative-work-experiences-with-web-20-in-spanish-primary-schools-with-the-highest-institutional-accreditation-level/115957

E-R Approach to Distributed Heterogeneous Database Systems for Integrated Manufacturing

Hemant Jainand Mohammed I. Bu-Hulaiga (1990). *Information Resources Management Journal* (pp. 29-41).

www.irma-international.org/article/approach-distributed-heterogeneous-database-systems/50926

Exploring the Impact of Demographic Factors on E-Government Services Adoption

Isaac Kofi Mensahand Jianing Mi (2018). *Information Resources Management Journal* (pp. 1-16).

www.irma-international.org/article/exploring-the-impact-of-demographic-factors-on-e-government-services-adoption/204472

Extensions to UML Using Stereotypes

Daniel Riesco, Marcela Daniele, Daniel Romeroand German Montejano (2009). *Encyclopedia of Information Science and Technology, Second Edition* (pp. 1505-1509).

www.irma-international.org/chapter/extensions-uml-using-stereotypes/13776