Chapter XV
ERP Usage in Practice:
An Empirical Investigation

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ABSTRACT

This study presents the results of an exploratory study of Fortune 1000 firms and their enterprise resource planning (ERP) usage, as well as benefits and changes they have realized from ERP. The study empirically examines ERP in these organizations to provide insight into various aspects that firms can use to evaluate how they are managing their ERP systems. Findings provide information about functionality implemented, extent to which benefits are realized, extent of ERP-related organizational changes firms have realized, and the way firms measure ERP success. The study also addresses the extent to which various types of ERP software have been implemented and whether there is a relationship between type of software and benefits. Finally, it examines ERP-enabled change in light of organizational configuration.

INTRODUCTION

Enterprise resource planning (ERP) is a tool that enables organizations to streamline operations, leverage common business processes, and manage multiple operations, and is implemented through an integrated suite of software modules and a centralized database (Jacoby & Bendoly, 2003; Scott & Kaindl, 2000). Although the term ERP may be used to represent a variety of concepts, in this article, the term is used to constitute the seamless integration of processes across functional areas with the standardization and integration of various business practices in order to manage operations more effectively and to gain an overall view of the business (Boudreau & Robey, 1999; Jacobs & Bendoly, 2003; Mabert et al., 2000).

The transition to an enterprise resource planning framework is often a long, difficult, and

costly process due to the nature and complexity of ERP systems. Many firms are grappling with the tradeoff between the costs of implementing an ERP system and not having one (Stedman, 1999). For example, some have come to believe that "competitively and technically it's a must-do, but economically there is conflicting evidence, suggesting it is difficult to justify the associated costs, and difficult to implement to achieve a lasting business advantage" (Willcocks & Sykes, 2000, p. 32). However, in spite of many failures reported (Davenport, 1998; Kransner, 2000), there are many success stories, suggesting that if properly managed, organizations can and do realize significant benefits from ERP (Davenport, Harris, DeLong & Jacobson, 2001).

With the abundance of conflicting information and the seeming propensity to report failures rather than successes in the literature, many firms that have not implemented may still be wondering whether ERP is right for them and whether the benefits touted by ERP vendors exist. Others that have implemented may be wondering if the benefits and changes they have achieved are consistent with that of other implementers and whether ERP was worth the effort. The purpose of this study is to examine empirically the organizational usage of ERP in order to provide insight into various aspects of usage that firms can use to evaluate their own ERP usage and what they are gaining from ERP. Although there is much empirical and descriptive work about ERP, there is little that assesses ERP after implementation is complete (Sarkis & Sundarraj, 2001). Although the former research provides valuable insights, it often overlooks the final and longest stage of ERP life in which firms begin to realize the impact of ERP. Much of what is known about ERP may only be a reflection of the state of ERP at or immediately after implementation. However, senior IT and business managers believe that the integration and usage of enterprise systems is one of the most important issues that they are now facing (Luftman & McLean, 2004). Much post-

implementation ERP research provides mixed evidence about ERP's impact on overall organizational performance (Hitt et al., 2002; Hunton et al., 2003; Poston & Grabski, 2001). However, there is a need to explore the impact of ERP at various organizational levels, at the individual level, and at the ERP functionality level (Gattiker & Goodhue, 2002, Hitt et al., 2002). Thus, additional research that extends knowledge about post-implementation ERP is valuable.

The fundamental research question underlying this study is what is the state of post-implementation ERP in terms of benefits and changes organizations are able to realize? In answering this question, this study provides information about the extent to which benefits are realized, the extent of ERP-related organizational changes that firms have realized, and the way firms measure ERP success. It also addresses the extent to which various types of ERP software have been implemented and the relationship between the type of software and benefits. Finally, it examines ERP-enabled change and benefits in light of organizational configuration.

The rest of the article is organized in six sections. One is a discussion of the background for issues and questions examined followed by a brief discussion of the methodology for the study. A profile of respondents is presented in the fourth section, and data analysis and results are presented in the fifth section. The sixth section presents conclusions, implications of findings for practitioners, and directions for future research.

BACKGROUND

Firms implement ERP to help them integrate business processes and to share common resources across the organization (Zheng, Yen, & Tarn, 2000). ERP helps to do this through sets of integrated modules that allow companies to manage multiple operations from a standardized platform (Boudreau & Robey, 1999). At the time of this

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