An Exploratory Case Study of Enterprise Resource Planning Implementation

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ABSTRACT

Enterprise Resource Planning (ERP) systems are a growing area of research in business information systems. The primary purpose of this research was to test the effect of ERP implementation on users. We used the implementation and performance stage model and studied issues related to adaptation, acceptance, and routinization stages. An exploratory case study was conducted to study these research issues. The case study consisted of a survey and interview of 25 employees at one organization. The results provide data analysis findings from the survey and qualitative findings from the interview. The findings of the case study point to a positive user climate during transition to SAP, increased user productivity, and improved job understanding through the use of SAP software.

Keywords: ERP implementation; SAP software; technology adoption

INTRODUCTION

One way organizations handle industry competition is to turn to information system technology in order to attain advantages in the market. This is done by improving internal performance through saving resources and becoming adept in responding to environmental challenges (Rajagopal & Frank, 2002). Enterprise resource planning (ERP) systems are the latest in information systems that have been developed to help coordinate the information flow that parallels the physical flow of goods from raw materials to finished goods.

ERP is a structured approach to optimize a company’s internal value chain. When the software is fully installed across an entire company, it connects the components of the business process through a logical transmission and sharing of common data within an integrated framework. For example, when a sale occurs in the daily course of business, the sale courses its way through the software, and the software automatically calculates the effects of the transaction on other areas, such as manufacturing, inventory, procurement, and invoicing, and records the actual sale to the financial ledger (Hiquet & Kelly, 1998).
ERP software essentially organizes, codes, and standardizes an enterprise’s business processes and data. The software converts transactional data into useful information and collates the data so that they can be analyzed. In this way, all of the collected transactional data become information that companies can use to support business decisions.

The first major step to collect the information flow of the manufacturing process occurred during the 1960s when materials requirement planning (MRP) software was developed. Efforts continued in the 1980s to make MRP applications more useful by being able to generate information based on a more realistic set of assumptions. As a result, manufacturing resource planning (MRP II) software was developed. Finally, in the 1990s, ERP applications evolved into applications capable of linking all internal transactions (Hiquet & Kelly, 1998).

ERP software is not intrinsically strategic; rather, it is an enabling technology, an application of integrated software modules that coordinates all internal transaction processing. Implementing ERP requires large-scale changes to organizational, cultural, and business processes. Many of the ERP products developed in the 1990s have enabled companies to redesign their business processes and eliminate non-value-adding work. As a result, employees could focus on value-adding activities that have dramatically increased productive capacity. One focus of process redesign is to improve the company’s financial performance by improving operational performance. Long-term financial success occurs when a company delivers increasing customer value while simultaneously lowering the cost of delivering that value (Hiquet & Kelly, 1998).

The perspective that ERP software is simply a means of cutting cost is still prevalent. As a result, organizational resistance to ERP implementation has often been high, and not all ERP implementation programs delivered the promised enterprise improvements. The key to change is the willingness of individuals throughout the company to adopt new technology and new ways of working. In an ERP-empowered organization, new technology and processes require individuals to upgrade their skill set (Hiquet & Kelly, 1998).

The implementation and performance stage model (Cooper & Zmud, 1990; Kwon & Zmud, 1987) is a useful tool for understanding the implementation of the ERP technology. Our research focuses on the adaptation, acceptance, and routinization stages of this implementation model. We present the results of our exploratory case study that examines issues related to these three stages.

LITERATURE REVIEW

History of ERP Systems

The arrival of ERP systems introduced a new software concept. A data structure was added to the software packages, which eliminated the redundancy within organizations created by departmental software. Instead of interfacing information between departmental systems, a central repository was developed to store transactions from one department that could automatically be used by another department (Hiquet & Kelly, 1998).

Early ERP systems primarily included inventory control software, material requirements applications, and manufacturing planning modules. The continual evolution of ERP systems has subsequently en-
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