



ERP plans and decision-support benefits

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Received 1 July 2002; accepted 1 July 2003

Available online 23 October 2003

Abstract

Management and implementation of Enterprise Resource Planning (ERP) systems have tended to concentrate on their transactional and record-keeping aspects, rather than on their decision-support capabilities. This paper explores connections between ERP systems and decision support based on the perceptions of 53 ERP system adopters. It offers new insights into the important objectives that are (and should be) considered in ERP plans, including decision-support objectives. It provides insights into the decision-support benefits of ERP systems. The study also examines relationships between the importance of various objectives in ERP planning and the subsequent realization of decision-support benefits from an ERP system.

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Keywords: Benefits; Decision support; Enterprise resource planning; ERP systems; Impacts; Objectives

1. Introduction

Over the past decade, organizations have spent billions of dollars implementing enterprise resource planning (ERP) systems. Objectives of adopters of ERP systems have focused primarily on improving transaction handling through the standardization of business processes and integration of operations and data [6,8]. However, Davenport [7] suggests the “need to make sound and timely business decisions” as a major reason for ERP. In a field study of six ERP

implementations, Palaniswamy and Frank [22] describe the need for organizations “to digest the vast amount of information from the environment and make fast decisions” and the need to “work together and sometimes with other organizations” to make strategic decisions. In a study focused on the need to link ERP systems with both external and internal data, Li [18] identifies the need for “generating business intelligence that matters” as a primary key to the next generation of ERP systems.

Beyond the need for decision support via ERP, there is evidence that ERP indeed offers features that support decision making. A case study of Earthgrains [8] describes several elements of an ERP system in addition to those used to create, capture, and store transactional data. These elements include tools for data communications, data access, data analysis and presentation, assessing data context, synthesizing data

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from other sources, and assessing completeness of data. A survey [15] of adopters has examined the extent to which 16 decision-support characteristics are exhibited by their ERP systems. Overall, it finds that adopters perceive decision-support characteristics exhibited to a moderate degree by their ERP systems, and those exhibited to the greatest degree are the provision of a repository of knowledge for solving problems and mechanisms to facilitate communication within an organization.

Granted that there is a need for decision support via ERP and that decision-support characteristics can be exhibited by ERP implementations, to what extent do organizations realize decision-support benefits from ERP systems? In addition to answering this question, we seek to learn about the level of importance given to decision support during project planning, and whether there is a connection between objectives of an ERP plan and decision-support benefits of the implemented ERP system. We contend that a better understanding of ERP objectives, decision-support benefits, and their connections can benefit ERP planners, adopters, and vendors, as well as expand the foundation for future ERP and decision-support system (DSS) research.

Sections 2 and 3 review prior literature on ERP objectives and decision-support benefits as a basis for constructing a survey instrument. Section 4 describes the study's methodology along with a profile of respondent demographics. Section 5 reports findings on the importance of various objectives in planning an enterprise system project, including actual importance ascribed to the objectives, perceptions of the importance that should be given to each, and a comparison of the actual versus normative. Section 6 reports the degree to which specific decision-support benefits are perceived to be provided by ERP systems. Section 7 examines the relationship between ERP objectives and decision-support benefits that are realized. We conclude with a discussion of this study's main findings and suggestions for future investigations.

2. ERP objectives

Developing a plan for introducing an ERP system into an organization is a challenging endeavor involving a host of considerations ranging from ERP soft-

ware selection and configuration, to revision of business practices, to securing sufficient ERP development and operating staff, to the process of "going live" with the ERP system. The plan necessarily involves technical, human, organizational, and economic issues. Whatever the nature of the plan, its starting point is an understanding of the ERP project's objectives.

Lonzinsky [19] contends that there are seven general objectives that companies seek to accomplish by installing new enterprise software packages:

1. Drastically reduce the size and cost of the company's informatics sector;
2. Decentralize information processing by making data available in real time without dependence on the MIS department;
3. Provide technology tools that permit simplification of accounting, finance, and administrative functions, as well as the generation of management reports to maintain processes of control and business management;
4. Create a base to support growth with reduced proportional internal support costs;
5. Achieve a better balance between decentralization and control among functions to avoid duplication, ensure synergy, and manage performance indicators;
6. Electronically exchange information and orders with major clients to decrease costs;
7. Employ new technologies to keep pace with or surpass those of competitors.

There is no indication of the relative importance that organizations place on such objectives when planning an enterprise system project.

Cooke and Peterson [6] conducted an empirical study of 162 adopters of SAP's enterprise software. They found that, in order of importance, the top eight reasons why companies implemented enterprise systems were as follows: standardize company processes, integrate operations or data, reengineer business processes, optimize supply chain or inventory, increase business flexibility, increase productivity/reduce number of employees, support globalization strategy, and help solve the year 2000 (Y2K) problem. There is no indication of how much more important any one of these objectives is than those that follow it; nor is

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