Chapter 4.8
Implementation Management of an E-Commerce-Enabled Enterprise Information System

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INTRODUCTION

The integration of enterprise systems and the supply chain to an organization is becoming more critical in an ever-changing, globally competitive environment. Quick response will require close relationships, especially communications and information sharing among integrated internal functional groups as well as the suppliers and customers of an organization. Texas Instruments (TI), headquartered in Dallas, Texas, has come to realize this requirement for building and maintaining its competitive edge. Thus, it sought to implement an enterprise resource planning (ERP) system with a focus on linking it with a global electronic commerce (e-commerce) setting, an innovative and current issue (Weston, 2003).

There were a number of major players, including project management direction from Andersen Consulting Services, software vendors such as SAP and i2 Technologies, hardware vendors such as Sun Microsystems, and various suppliers and customers of TI.

The purpose of this case is to provide some aspects of implementation of strategic systems that provide valuable lessons for success. We begin and rely on the foundation of a strategic systems implementation model, which is initially described. A description of the case follows, with the various stages as related to strategic systems implementation described. We complete our discussion with implications and conclusions.

BACKGROUND

A process-oriented framework for ERP management is presented to help guide the discussion

of this case (see Cliffe, 1998; Davenport, 1999; Miranda, 2002; Sarkis & Sundarraj, 2000).

The elements include the following:

- Strategy formulation and integration—One of the results of this step in the process is determination of an organization's core competencies that need specific technology support.
- Process planning and systems design—Also known as the reengineering phase, three studies are usually undertaken at this stage, and they are named AS-IS, SHOULD-BE, and TO-BE.
- System evaluation and justification—Here, analysis focuses on the economic, technical, and operational feasibility and justification of the system.
- System configuration—As a packaged software system, there are likely to be discrepancies (at the detailed level) between the needs of an organization and the features of the software. Hence, a significant amount of effort can be expected to configure the system or the organizational processes in order to produce an alignment between them.
- System implementation—The implementation stage can be classified into startup, project management, and a migration handing the switch over from the old to the new system.
- Postimplementation audit—This last "feedback" stage, although very important from a continuous-improvement perspective, is one of the more neglected steps.

As can be seen, the process suggested above can be arduous, but this necessary effort must be anticipated for the successful integration of complex and strategic systems into an organization.

IMPLEMENTING A GLOBAL ERP SYSTEM AT TI

Company Background

Texas Instruments Incorporated (TI) is a global semiconductor company and the world's leading designer and supplier of digital signal processing (DSP) solutions and analog technologies (semiconductors represent 84% of TI's revenue base). The company has manufacturing or sales operations in more than 25 countries and, in 1999, derived in excess of 67% of its revenues from sales to locations outside the United States. Prior to the implementation of ERP, TI had a complex suite of stand-alone nonintegrated marketing, sales, logistics, and planning systems consisting of thousands of programs that were based on many independent databases and were running on proprietary mainframe systems.

OVERVIEW

Since the 1980s, TI had used a highly centralized infrastructure utilizing proprietary mainframe computers for meeting its IT requirement. As the first step toward global business processes, certain planning processes and systems were standardized in 1989. Starting in 1996, TI underwent a company-wide reengineering effort that led to the implementation of a 4-year, $250 million ERP system using Sun Microsystems' hardware platform, SAP AG's ERP software, i2's advanced planning tools, and Andersen Consulting's implementation process. In 1998, Texas Instruments implemented the first release of the ERP system, which primarily consisted of a prototype implementation of the i2 system running on a Sun E10000 platform. In early 1999, TI began rolling out the second release. In the middle of 1999, TI completed the i2 Technologies software implementation as part

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