Chapter XIV

An Investigation of the Existence of Levels of Enterprise Integration

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Abstract

A primary objective of ERP is to integrate the various parts of a company. The chapter discusses six levels of enterprise integration and the ability of ERP to satisfy each of them. We analyzed six case studies that included IBM, Cisco, Tecktronic, Vandelay, China Holdings, and APD Manufacturing. We found evidence to support the existence of the six levels of integration. APD and China Holding did not exhibit evidence of global integration while the others did. System-User (Level–II) integration was missing from all except APD. Islands-of-Technology integration is no longer the dominant integration issue it was in the 80’s. The dominant integration issues are functional integration, customer relationship management, and supply chain management.
Introduction

Companies are subjected to many business forces including globalization, an increasingly volatile environment, fast changing customer demand, shorter product life cycle, increasing market diversity, higher knowledge intensity, operational transparency, up-to-the-minute on-line transactions, improved coordination, and rapid advances in information technology (IT) (Madnick, 1991; Scott-Morton, 1991). Companies mitigate these forces by resorting to enterprise integration (Mathew, 2006; Mendoza, Perez, & Griman, 2006) using ERP, which is still the most sought after enterprise integration solution. ERP provides an integrated, comprehensive, updated, and realistic view of a company’s operation (Scalle & Cotteler, 1999; Sheu, Yen, & Krumwiede, 2003). Evidence suggests that ERP improves company performance (Chalmeta, Campos, & Grangel, 2001; Laframboise, 2005; Mabert, Soni, & Venkataramanan, 2000; Ward, 2006). This is why 70% of the Fortune 1000 companies have installed or experimented with ERP (Bingi, Sharma, & Godla, 1999) and the market may grow to $60 billion or more by 2004 (Callaway, 2000; Mabert et al., 2000).

ERP implementations are costly (Jones & Young, 2006; Mabert et al., 2000; Sanchez, 2006), involve considerable technical and financial risks, and the expected financial and business returns are very high. This is why CEOs, CIOs, and CFOs find it difficult to justify ERP expenditures when financial benefits are uncertain (Davenport, 1998; Deutsch, 1998; Sheu et al., 2003; Wailgum, 2005). Therefore, understand the risks of using ERP as an enabler of integration are important because it has not always lived up to its expectation (Mabert et al., 2000; Wailgum, 2005). Two reasons are that it disrupts the business processes (Kremers & Van Dissel, 2000; Scheer & Habermann, 2000; Soh & Kien, 2000) and threatens corporate culture (Hasselbring, 2000; Ward, 2006). Disappointing ERP results (Gattiker, 2002; Markus & Tanis, 2000a; Saccomano, 1999; Scheer et al., 2000; Schulz, 2000; Songini, 2005; Wailgum 2005) and intractable implementations are well known (Davenport, 1998; Deutsch, 1998; Sheu et al., 2003; Wailgum, 2005). Consequently, we decided to investigate if various levels of enterprise integration exist in organizations and how effective is ERP in achieving them.

To satisfy our research objectives, we define six levels of enterprise integration and discuss the role of ERP. We then analyze six industry case studies for exploratory evidence of the six levels of integration. The published case studies used in this research serve as a reality substitute for industry practice, which is a widely accepted research method (Grant, 2002; Grant & Ngwenyama, 2003; Sheu et al., 2003). The evidence gleaned from the cases provides impetus for a larger, scientific study.

The rest of the chapter is organized as follows. The next section is a literature review of integration. The third section defines ERP and integration. A model of enterprise
Evaluating Information Systems Constructing a Model Processing Framework
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