Chapter 8.2
Next–Generation Enterprise Systems

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INTRODUCTION

"ERP is dead - long live ERP II" was the title of a path breaking research note from Gartner Group (Bond, Genovese, Miklovic, Wood, Zrimsek, & Rayner, 2000). In this research note, Gartner Group envisions how the ERP vendors respond to market challenges and how ERP and ERP strategies evolved by 2005. Gartner Group defines ERP II as a transformation of ERP (Enterprise Resource Planning), and today the major vendors have adopted this concept in their contemporary ERP packages.

ERP (Enterprise Resource Planning) is an important concept to industry. Enterprises are increasingly implementing packaged ERP systems. A recent study confirmed that over 90% of the 500 largest Danish enterprises have adopted one or more ERP system. Further, the study found the systems to be of an average age of 2.8 years and decreasing (Møller, 2005a).

ERP is a standardized software package designed to integrate the internal value chain of an enterprise (Klaus, Rosemann, & Gable, 2000). In 2002, the five major ERP vendors were: (i) SAP; (ii) Oracle; (iii) Peoplesoft; (iv) SAGE; and (v) Microsoft Business Solutions. They controled almost 50% of the ERP market (c.f. Table 1) and consequently the corporate infrastructure is dominated by the design of these systems and the vendors. By 2006, the market is consolidated and many of the smaller vendors have been merged with larger vendors. Oracle acquired PeopleSoft and JD Edwards and the global market seems to be dominated by SAP, Oracle and Microsoft. (see also Table 2)

Table 1. Top 5 worldwide ERP software application new license revenue market share estimates for 2002. Source: Gartner Dataquest (June 2003)

Vendor	2002 Market Share (%)	2001 Market Share (%)
SAP AG	25.1	24.7
Oracle	7.0	7.9
PeopleSoft	6.5	7.6
SAGE	5.4	4.6
Microsoft Business Solutions	4.9	4.6
Others	51.1	50.3
Total Market Share	100.0	100.0

Table 2. Enterprise systems in retrospective

Decade	Concept	Function
1950s	Inventory Control Systems (ICS)	Forecast and inventory management
1960s	Material Requirement Planning (MRP)	Requirement calculations based on Bill-of-Material (BoM)
1970s	Manufacturing Resource Planning (MRP/II)	Closed-loop planning and capacity constraints
1980s	Computer Integrated Manufacturing (CIM)	Automation, Enterprise models
1990s	Enterprise Resource Planning (ERP)	Integrated processes

According to Nah (2002) the American Production and Inventory Control Society (APICS) defines ERP as: "a method for the effective planning and controlling of all the resources needed to take, make, ship and account for customer orders in a manufacturing, distribution or service company." This definition expresses ERP as a tool but ERP is also a management vision and an agency of change and ERP has been attributed to almost any good or bad that IT may bring about in business.

In the late 1990s, the ERP hype was primarily motivated by companies rushing to prepare for Y2K (Calloway, 2000). Then, after a short recession the adoption of ERP has continued. Davenport's sequel on enterprise systems (Davenport, 1998, 2000; Davenport & Brooks, 2004) illustrates the changing business perspective on ERP and the ERP hype.

Davenport (1998) sums up the first wave of experiences from implementing ERP systems in a much cited paper on "putting the enterprise system into the enterprise," and points to the new potential business impact of the ERP systems. The discussion evolved over the first enthusiastic expectations, continued over a growing number of horror stories about failed or out-of-control projects, toward a renewed hype of expectations on e-business and SCM.

The ERP II concept is the software industry's perception of the new business challenges and the vision addresses the issues of e-business integration in the supply chain. ERP II is the next-generation ERP concept and in a few years from now the ERP II vision is going to be institutionalized into the infrastructure of most enterprises. This article will portray the conceptual framework of ERP II.

BACKGROUND: THE EMERGENCE OF THE ERP CONCEPT

The ERP II concept may be understood by taking a closer look at the development of the ERP concept. Enterprise systems have often been explained through the historical evolution of ERP (Chen, 2001; Klaus, Rosemann & Gable, 2000; Wortmann, 1998). The concept of Enterprise Systems (ES) has evolved over almost 50 years, driven by the changing business requirements, the new information technologies, and by the software vendor's ability to provide standardized solutions.

The fundamental structure of ERP has its origin in the 1950s and in the 1960s with the introduction of computers into business. The first applications were automating manual tasks such as bookkeeping, invoicing and reordering. The early Inventory Control (ICS) systems and Bill of

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