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ERP implementation failures in China: Case studies with implications for ERP vendors

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Abstract

Chinese enterprise resource planning (ERP) vendors have been able to defend the challenge from global ERP leaders such as SAP and Oracle. This article seeks possible reasons for major international ERP vendors not being able to dominate the Chinese ERP market. Taking an ensemble view of technology, we conceptualize ERP systems as being embedded in complex social contexts, which heavily influence ERP implementation and use. Based on this conceptualization, we contend that a historical perspective and a social-cultural perspective can offer a rich understanding on ERP implementations in China. From the historical perspective, this paper describes China's ERP evolution and compares it with the ERP evolution in Western countries. From the social-cultural perspective, five cases in which foreign ERP vendors have failed in their Chinese implementations are presented and analyzed. Eight factors are identified which have contributed to ERP failure. Implications of the findings for future ERP implementations in China are discussed.

Keywords: ERP failure; ERP implementation; China; Historical perspective; Social–cultural perspective; Ensemble view

1. Introduction

Although information systems help streamline individual business functions, disparate information systems across business units may in fact impede an organization's long-term development. To take advantage of information systems, information must be shared easily, correctly, and on time among business units. If each business unit of a large enterprise implements independent or incompatible information systems, communication between business units can become much more complicated and error-prone. The enormous costs of maintaining various incompatible systems then

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becomes a nightmare for executives (Davenport, 1998). Managers realized that more efficiency and effectiveness could be achieved if operations are easily coordinated across the "silo" systems that developed in the organization. An early attempt by manufacturers to obtain the advantages of better communications across the incompatible systems was called computer-integrated manufacturing (CIM). CIM was a philosophical integration of the systems needed in manufacturing. The idea was to have interoperable systems that were an essential part of the manufacturing process. Many of these systems were only marginally interoperable because of incompatible equipment, operating systems, etc. CIM sought to integrate most systems such as material requirements planning (MRP), manufacturing resource planning (MRP II), JIT, etc., of the time (see McGaughey and Snyder (1994) for a CIM definition). The philosophy envisioned for CIM was incorporated into the vision of enterprise resource planning (ERP): the enterprise connected and the systems integrated and interoperable.

ERP systems include a set of software modules linked to a common database, and these modules can handle basic corporate functions such as manufacturing, finance, human resources, materials management, sales, and distribution (Slater, 1998). ERP systems focus on integrating all internal enterprise transaction processing to balance demand and supply (Wallace and Kremzar, 2001). Through cross-functional integration, businesses can improve their productivity and customer service while lowering costs and inventory. Hence, ERP systems hold the promise of providing companies with greater competitive advantage.

As estimated by TEC Group (www.technologyevaluation.com), an information technology research firm, the global ERP market in 2001 was between USD 20.5 and USD 22.5 billion (growing 3–13% over 2000). Driven by e-commerce initiatives and continuing mergers and acquisitions, the global ERP market is predicted to grow at a compound annual rate of 10.5% (EBN, 2002). Table 1 shows the distribution of market shares. The five major ERP vendors account for approximately 63.2% of the ERP market and the top eight ERP vendors account for 67.8% of the market.

Table 1
Global ERP market shares

Rank (by supplier)	Company name	Market share (%)
1	SAP	32.0
2	Oracle	14.5
3	PeopleSoft	9.0
4	J.D. Edward	5.0
5	Baan	2.7
6	GEAC	2.5
7	SCT	2.1
8	Intentia	1.8
	Other	30.4
	Total	100.0

Source: TEC Group (Jakovljevic, 2001).

The inherent appeal of ERP has not gone unnoticed in Asia. Indeed, recent years have witnessed a dramatic increase in ERP adoption and diffusion in China (Huo, 2002). However, since ERP systems are extremely complex and difficult to implement, many implementing companies have encountered unexpected failures. ERP success is even harder to achieve when cultural issues are involved. Considering that most ERP systems are designed by Western IT professionals and the structures and processed embedded in these systems reflect Western cultures, we assume that fundamental misalignments are likely to exist between foreign ERP systems and Chinese companies whose existing structures and processes are largely determined by the Chinese culture (Davison, 2002; Soh et al., 2000). As a result of these misalignments, ERP implementation failures tend to occur when Chinese companies attempt to adopt foreign ERP systems. Therefore, some international ERP giants could not establish their dominance in the Chinese ERP market (Liang et al., 2004).

In contrast to foreign ERP vendors' difficulty in the Chinese market, an interesting observation is that China's domestic ERP vendors seem to be able to expand their market share, showing capability to compete against their international competitors. Taking an ensemble view of technology (Orlikowski and Iacono, 2001), we conceptualize ERP systems as being embedded in complex social contexts, which heavily influence ERP