

# Implementation of enterprise resource planning in China

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## Abstract

ERP implementation is a ‘Triple Play’ that combines people, technology, and processes. It embodies a complex implementation process, especially in developing countries like China, often taking several years, huge amount of fund and involving a major business process reengineering exercise. In this paper, an attempt has been made to identify some Chinese-specific difficulties in the implementation process and provide solutions to implement ERP system successfully through questionnaire survey, interviews, and secondary data. On the basis of analysis of questionnaire results, some common difficulties have been explored by authors, such as support of top management, costly and time-consuming, cultural differences, technical complexity, lack of professional personnel, and inner resistance. The difficulties are largely due to the nature of enterprise’s ownership and size. Suggested solutions to overcome these difficulties: ERP software packages selection, ERP implementation team, BPR, Training, and Outsourcing-Application Service Provider. These solutions can effectively solve ERP difficulties.

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## 1. Introduction

Today no one would dispute that information technology (IT) has become the most important cornerstone of an enterprise’s ability to successfully compete in the global marketplace. As IT power and presence have expanded, companies have started viewing it as a competitive advantage rather than costs, even more critical to their success. ERP software package, as one of the most important IT systems, is now gaining the universal attention from most enterprises worldwide. Market researcher International Data Corp (IDC) predicted a compound annual growth of 11% for the worldwide ERP market from 2001 to 2006, reaching US\$39.6 billion at the end of the forecast period. In a report dated 4 June 2000, First Union Securities stated that SAP installed 44,500 R/3 packages worldwide.

There are several failed ERP cases, and companies lost not only the capital invested in ERP packages and millions

paid to outside consultants but also a major portion of their business. Recently, Unisource Worldwide Inc., a \$7 billion distributor of paper products, wrote off \$168 million in costs related to an abandoned nationwide implementation of SAP software (Stein, 1998). FoxMeyer Drug, a former \$5 billion drug distributor, went bankrupt in 1996 and has filed a \$500 million lawsuit against SAP. FoxMeyer charged the ERP giant that its package was a “significant factor” that led the firm into financial ruin (Tiazkun, 1998). Dell Computer has recently abandoned a much-publicized SAP implementation following months of delay and cost overruns. Dow Chemical, after spending half a billion dollars over 7 years of implementing SAP R/2, the mainframe version, now has decided to start all over again on the new client/server version (R/3) (Bingi et al., 1999). Bingi et al. (1999) suggest that implementing an ERP system is a careful exercise in strategic thinking, precision planning, and negotiations with departments and divisions. It is important for companies to be aware of certain critical issues before implementing any ERP package. Careful consideration of these critical success factors (CSFs) will ensure a smooth rollout and realization of full benefits of the ERP solution.

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Stand-alone or individual computing systems are no longer able to meet the ever-increasing needs of the organizations. According to Milling (1997), many enterprises have responded to these challenges and still do by implementing computer-based tools and sophisticated systems for production planning and control. Information systems must be tightly integrated with business objectives to compete in the changing environment. Salaheldin and Francis (1998) said manufacturers found themselves in a totally changed environment, so they must improve both their products and their productivity, namely making their processes more efficient and effective to remain competitive as a matter of survival.

As it has seen in the recent past, companies not only compete just with quality and cost of their products, but also compete on new parameters like time to market and meeting individual customers' needs through customized products. These parameters have become entry tickets to the market place. The competition in future is going to be more intense. Organizations are facing immense pressure to transform their traditional enterprises to new economy enterprises—to be more efficient, control costs, and improve quality, while doing more with less. To be successful, these organizations must have an ERP system in place that optimizes their operation in all aspects. This is why more and more enterprises are eager to embrace ERP systems than before. It is the matter of survival rather than a show.

In this paper, we intend to find out some Chinese-specific difficulties of ERP implementation in Chinese context based on other researchers' findings and a small-sized questionnaire survey conducted. After clarifying these difficulties, the paper offers some solutions to address them. Performance of enterprise, after implementation of ERP system, is an important issue. Section 2 presents the status of Chinese enterprises. Research purpose and questions are presented in Section 3. A literature review on the implementation of ERP is presented in Section 4. Section 5 deals with the research methodology employed in this project. The findings of the survey by using the questionnaire survey and interviews, suggested solutions are described in Section 6. Section 7 concludes the paper.

## 2. Status of ERP in Chinese enterprises

In general, most of SOEs are large-scale companies, while quite high percentage non-SOEs are small- and medium-scale companies, except some big international joint ventures and few private giants. As companies display a great variety of ownership structures in China, such as state-owned, joint venture, foreign-owned, and private firms, the role of ownership is considered in relatively greater depth than other countries in this research because we found it had a quite strong impact on ERP implementation. While it turns out that ownership is strongly associated with implementation process characteristics, the

association of ownership structures with implementation results is much less pronounced (Martinsons, 2004).

Although there are some commonalities in two kinds of enterprises, Reimers (2003) also found some fundamental differences in ERP implementations between Chinese SOEs and non-SOEs. Despite implementing the same ERP package in every case, Martinsons (2004) also discovered fundamental differences between the two types of organizations, in terms of both the process and the outcomes of implementation. Non-SOEs contributed comparatively more to the success of ERP systems than their SOE counterparts.

Chinese organizations have invested billions of dollars in ERP. More than 1000 Chinese sites had an ERP system by the end of 2001. According to scenarios and forecast data provided by the Gartner Group and IDC, nearly 300 of these deployed SAP's R/3 software package (Martinsons, 2004). China's demand for ERP applications has grown at a fast pace in the past decade. In the next 5 years, both production and demand will continue to grow at an unbelievable speed. Behind the huge demand for ERP, the survey data are frustrating. According to Xiong and Wu's (2003) findings, until now, only 2.9% Chinese enterprises implemented ERP system; but in these enterprises, only 30% enterprises accomplished to implement ERP systems and 10% enterprises benefited from ERP projects. From these data, it shows most of Chinese enterprises fail to implement ERP systems due to various reasons and difficulties they are suffering, although they expected to gain great promotion from the implementation.

There are two kinds of ERP vendors in China. Some are the international giants, such as SAP, ORACLE, and PeopleSoft. Others are national vendors, e.g., UFSOFT, Kingdee, etc., SAP, the world's largest ERP manufacturer, dominates the ERP market in China with 30% market share, indicated by IT research firm IDC. To date, SAP has more than 300 clients in China. SAP signed contracts for its ERP solutions with some large SOEs recently, such as Beijing Telecom, pharmaceutical firm Juhua Group, steel manufacturer Jianshu Shagang Steel Group and air cargo firm Emery. SAP's traditional ERP solution named R/3 is now part of mySAP.com and provides ERP functionalities, which help businesses, manage areas, such as product planning, purchasing, warehousing, transportation, and human resource. Although local firms like UFSOFT and Kingdee Software are gaining market share, SAP CEO and Co-Chairman Henning Kagermann stated his company had consistently achieved 50% annual revenue growth over the last few years in China (Tham, 2002).

Since 2003, most ERP manufacturers have started to pay attention to the long-neglected small- and medium-sized companies. The existence of a vast number of medium and small enterprises in China, which do not run efficient business process, is a huge opportunity to both local and international ERP vendors. SAP officials predict that the market for small and medium businesses this year will reach 1.8 billion Yuan (US\$218 million), and by 2005 climb

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