

Chapter 12

Multidimensional and Interrelated Barriers and Risks Affecting Long-Term ERP Success in Chinese State-Owned Enterprises

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ABSTRACT

The research reported in this paper aimed to identify and explore potential cultural, operational, managerial, organisational and technical barriers and risks that can affect successful long-term exploitation of Enterprise Resource Planning (ERP) systems in Chinese SOEs. The study adopted a mixed-methods research design, which consisted of a questionnaire survey and a follow-up multiple case study. Business-oriented and human-related challenges associated with management deficiencies in Chinese SOEs were found to be the main triggers of the complicated network of ERP exploitation barriers and risks. The importance of these crucial business and organisational barriers however are often underestimated by SOE managers. This study thus concluded by suggesting that Chinese SOEs need to become more aware of the critical importance and the networked nature of the organisational barriers identified. Properly managing this type of ERP obstacles can help Chinese SOEs to mitigate and remove other ERP challenges and risks and thus ensuring long-term success in ERP post-implementation.

1. INTRODUCTION AND BACKGROUND OF STUDY

With the remarkable economic growth at an annual rate of around 10% during the last quarter

century, China has now emerged as one of the world's economic superpower. Information Technology (IT) is certainly one of the most important driving forces in supporting this rapid economic development in the country. In fact, and ever since

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the beginning of the 21st century, China has constructed a nationwide IT network that covers more than 2000 cities across the whole country (China Economic Yearbook Editing Committee, 2004). With this well-established national information infrastructure, IT has been increasingly embedded into the everyday life of Chinese citizens. This is evident from the increasing number of China's internet users, which has grown dramatically from only 0.62 million in 1997 to more than 420 million in 2010 (China Internet Network Information Center, 2011). Apart from its impacts on social life, IT has also become an essential part of the organisational structure of most contemporary Chinese companies. According to CCW Research (a well-known Chinese IT consulting firm), IT investments of China's manufacturing sector had increased from RMB 24.5 billion in 2004 to RMB 52.9 billion in 2010 (CCW Research, 2010). A very substantial part of these IT investments of Chinese companies was made to implement Enterprise Resource Planning (ERP) systems.

ERP systems are cross-functional enterprise information system (IS) packages, which consist of a number of software modules that aim at supporting and integrating all key business processes across the various functional divisions of an organization by using a single data repository (Peng & Nunes, 2012). It is arguably the most important development in the corporate use of IT in the 1990s (Davenport, 1998). Many previous IS research (e.g. Oliver et al, 2005; Bergstrom & Stehn, 2005; Shang & Seddon, 2002) indicated that successful adoption and use of ERPs can potentially bring companies with a wide range of benefits at operational (e.g. reduce operational and inventory cost), managerial (e.g. improve resources planning and control), and strategic levels (e.g. increase global operation power). These features and potential benefits of ERPs have resulted in a continuing high implementation rate of such integrated systems in Western companies (Buonanno et al., 2005). In China, both private companies and state-owned enterprises (SOEs)

have also frequently set ERP implementation as a top priority in their IS development agendas (Pan et al., 2011). Consequently, data provided by a prominent Chinese consulting firm (CCID Consulting) shows that, the Chinese ERP market has expanded rapidly from only RMB 560 million in 2000 to RMB 6,956 million in 2010.

However, as ERPs become an integral part of the organisational infrastructure, it is increasingly recognised by IS researchers and practitioners that, successful implementation of the system is only an important first step toward achieving ERP success (Peng & Nunes, 2009; Yu, 2005; Willis & Willis-Brown, 2002). In fact, long-term viability and success of ERP depend on its continued operation, use, maintenance and enhancement during the system post-implementation or exploitation phase (Bhattacharjee, 2001; Willis & Willis-Brown, 2002; Peng & Nunes, 2009). Please note that, for the purpose of this paper, the terms 'ERP post-implementation' and 'ERP exploitation' are used interchangeably. It can however be expected that a range of factors and barriers embedded in the local business context (e.g. lack of continuous top management support and poor cross-functional cooperation), and the system itself (e.g. poor system integration and poor data quality), may affect long-term success in ERP usage and exploitation (Peng & Nunes, 2010; Desai et al., 1998). Moreover, the existence of these barriers may in turn lead to the occurrence of a variety of risks during ERP post-implementation, e.g. staff may be resistant to use the implemented system (Pan et al., 2011; Peng & Nunes, 2009; Bhattacharjee, 2001). Disregarding these multidimensional and interrelated barriers and risks can turn initial ERP success into a failure, and thus contributing to critical business disasters (Bhattacharjee, 2001).

Although many researchers recognise the importance of ERP post-implementation and even stated it is the direction of the second wave ERP research (Yu, 2005), current studies on ERPs focused mostly on system implementation and project management aspects (e.g. Avison &

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