Chapter 14
Exploring the Influence Sources of ERP Adoption and the Y2K Effect in Taiwan

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ABSTRACT

Based on diffusion-of-innovation models, in this study, we investigate the influence sources of ERP adoption in Taiwan and explore if the Y2K can be viewed as a critical point. The results demonstrate that the main influence source of ERP adoption is the mixed influence source for all adopters. Before the Y2K, the internal model shows the higher power of explanation. And after the Y2K, the main influence becomes external influence source. With different diffusion patterns before and after the Y2K, the results confirm that the Y2K is a critical point. Besides contributing to the application of diffusion-of-innovation in Taiwan’s ERP adoption, the results of this study can provide suggestions for ERP suppliers’ marketing strategy.

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and one of the most important developments in recent years (Sprott, 2000; Seethamraju, 2005). Most of this are clearly attributable to the Y2K effect (Sprott, 2000). The Y2K rectification is a key driver in the decision to move to ERP software (Jacobs & Weston, 2007; Scott & Kaindl, 2000).

The ERP is the most important development in information technology use in the 1990s (Davenport, 1998). In the past decade about $300 billion was invested in ERP worldwide (Gefen & Ragowsky, 2005). And in Taiwan, according to the investigation of MIC (Market Intelligence & Consulting Institute), the market for ERP grew from 2.13 billion NT dollars in 1997, to 4.68 billion NT dollars in 1998. During the year 2000, the ERP market grew 26% and the market scale was up to 7.72 billion NT dollars. Nevertheless, the ERP market has generated 9.535 billion NT dollars in year 2004. MIC indicated that ERP market became mature after 2002. The CAGR (Compound Annual Growth Rate) of ERP market scale would reach 28% for three years after 2001, but also that the growth of the ERP market would decrease below 5% after 2004 (MIC, 2004).

The diffusion of innovation model (DOI model) is usually applied to explore the spread of an innovation such as a new technology, a new idea and a practice (Rogers, 2003). Schmitt, Thiesse, and Fleisch (2007) indicated that the diffusion of innovation theory provides well-developed concepts and quantities of empirical results which are useful for the study of technology evaluation, adoption and implementation. For example, Anat et al. (2004) applied the DOI model to investigate adoption of Internet standard IPV6. Ko, Yin and Kuo (2008) employed the innovation-diffusion model to analyze message diffusion within the blog community. Schmitt et al. (2007) used the concepts of DOI to explore the factors of Radio Frequency Identification (RFID)’s diffusion in the automotive industry. ERP packages can be characterized as an innovation, which has the potential to trigger change at organizational and inter-organizational levels (Light & Papazafeiropoulou, 2004); the DOI model has the potential to investigate ERP adoption. The imitation hypothesis has generally guided researches on the organizational adoption of administrative innovations. The hypothesis states that, within a relevant population of firms, such adoption results in a predictable diffusion pattern. Members of a social system have different propensities for relying on mass media or interpersonal channels when seeking information about an innovation (Mahajan, Sharma, & Bettis, 1988; Rogers, 1995; Rogers, 2003).

In this study, we applied the DOI perspective to examine the impact of various forms of influence in the adoption of ERP in Taiwan. First, we examined the sources of influence (internal, external, and mixed) that could explain the diffusion pattern of ERP by adopting ordinary least square (OLS) estimation methods and specification tests. Second, because previous research showed that the Y2K effect is a key driver for the adoption of ERP; we treated the Y2K as a ‘critical point’ in delineating two regimes: “pre-Y2K” and “post- Y2K”, to assess the different impacts of the influence sources within each of the regimes.

THEORETICAL PERSPECTIVES

The theoretical perspectives begin with the introduction of ERP and diffusion of innovation in first two sections, and then explain why this study regards ERP as an administrative innovation in next section. Following by a description of three diffusion models, namely influence sources. In the end, the theoretical perspectives highlight the crucial role that the Y2K drives the diffusion pattern of ERP.

Enterprise Resource Planning

The term “ERP” was addressed first by the Gartner Group in the early 1990s. It evolved from MRP,
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