

Chapter 15

Beyond ERP Implementation: An Integrative Framework for Higher Success

Rafa Kouki

Université Laval, Canada

Robert Pellerin

École Polytechnique de Montréal, Canada

Diane Poulin

Université Laval, Canada

ABSTRACT

Research about ERP post-implementation and ERP assimilation is very limited. Similarly, scant research investigated ERP experiences in developing countries. Based on a qualitative research methodology grounded in the diffusion of innovations theory, the present study aims at investigating the determining contextual factors for ERP assimilation. A cross-case study analysis of four firms in a developed and a developing country suggests that in both contexts, the primary factor for encouraging a successful ERP assimilation is top management support. Other factors such as post-implementation training and education, IT support, organizational culture, managers and users involvement, strategic alignment, external pressures and consultant effectiveness are also identified as factors that influence ERP assimilation. Several assimilation impediments that should be watched are also specified.

INTRODUCTION

ERP systems are software packages that embed, in their basic architecture, business knowledge and business process reference models as well as the knowledge and expertise of implementation partners (Srivardhanaa & Pawlowski, 2007). Lured by the numerous advantages of ERP systems and

their ability to provide a competitive advantage, companies worldwide have substantially invested in ERP applications. Despite the large investments in ERP, the relatively long experience of companies with this system and the accumulated knowledge about ERP projects, few firms are efficiently using their system (Yu, 2005). Similarly, there have been studies reporting cases of initial implementation failure that transformed into suc-

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cess, yielding significant benefits for the business (Jasperson et al., 2005).

Completing the system's implementation is, in fact, not the end of the ERP journey. Like other complex information technologies, once the system is installed, the adopting organization must ensure the effective assimilation of the ERP in order to be able to reap its benefits (Chatterjee et al., 2002). Effective assimilation is achieved when employees' sense of ownership of the system is high, when it becomes institutionalized in the organization's work processes, and when it is efficiently deployed at the various levels of managerial activities (Botta-Genoulaz & Millet, 2005; Cooper & Zmud, 1990). A primary objective of this research is therefore to investigate the factors that could explain why some firms are more successful in assimilating their systems than others.

Moreover, prior ERP research predominantly focused on the North American context (the United States in particular) and, to a lesser extent, the western European context. Scant studies dealt with developing countries (Ngai et al., 2008), despite the valuable lessons that could be learned from their experiences. Huang and Palvia (2001) argue that in developing countries, ERP technology confronts extra challenges which are intrinsically connected to several contextual reasons such as culture, economic conditions, government regulations, management style, and labor skills. Nevertheless, studies about ERP experiences in developing countries are scarce. Additional efforts are therefore required to fill this research gap. For our research, we chose to study two sets of companies: one operating in a developed country which is Canada, the second operating in Tunisia; a developing country from the unexplored North African region.

This chapter is organized as follows. First, we provide an account of the theoretical foundations of the concept of assimilation. Next, we describe the theoretical framework and the methodology that guided our empirical research. In section 4, the cases' analyses and research findings are presented

followed by a discussion of the findings. Lastly, we offer some concluding thoughts.

THEORETICAL FOUNDATIONS

The diffusion of innovation theory represents our primary approach in studying the assimilation process. Roger's diffusion of innovation theory posits that both the perceived attributes of the innovation and the firm's characteristics influence the adoption and use of an innovation (Rogers, 1983). Although it seems to be quite appropriate for studying innovation use, Roger's model has been criticized for being mainly applicable to simple technological innovations requiring individual decision-making. More research has therefore been made, based on Roger's theory, to better explain the diffusion of complex technological innovations. For instance, Tornatzky & Feleischer's (1990) model considers three aspects of the firm's context (technology, organization, environment (TOE)) that influence a complex innovation's adoption and assimilation process. In their diffusion stage model, Cooper and Zmud (1990) identify six stages for IT projects, three of which denote the post-implementation phase: acceptance, routinization, and infusion. During the infusion stage, the system becomes deeply and comprehensively embedded in the organization's work system and value chain. At this stage, the firm further integrates the system and extends its functionalities by adding new modules or applications to support new activities and reach external partners (Muscatello & Parente, 2006).

RESEARCH FRAMEWORK

Drawing on ERP implementation and IS assimilation literature, we focused on factors within the three main contexts that could influence the ERP assimilation process: technological context factors, organizational context factors, and en-

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