Chapter 1
Factors Influencing Information System Flexibility: An Interpretive Flexibility Perspective

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ABSTRACT

Information System (IS) flexibility has been regarded as an important indicator of information technology success. This article provides a model of IS flexibility encompassing all stages of IS implementation and usage. The model considers the cognitive factors from IS staff and users as important leveraging IS flexibility with adaptation activities. A review of constructs extending from the interpretive flexibility perspective in the literature is used to identify these cognitive factors. By hypothesizing the relationships among these cognitive factors, IS flexibility, and adaptation activities several propositions are identified. Empirical testing is then warranted to refute or validate the propositions.

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INTRODUCTION

Enhancing information system flexibility with flexible information technology infrastructure and adaptable application systems has been a critical issue for IS managers (Duncan, 1995; Prahalad & Krishnan, 2002; Sambamurthy et al., 2003). Information systems must be flexible to satisfy user requirements, particularly in changing environments. Sufficient IS flexibility could extend the life cycle of information systems and expand the effectiveness of IT investment (Cha-Jan Chang & King, 2005; Chang & King, 2005; Gebauer & Schober, 2006; Moitra & Ganesh, 2005).

Truex et al. (1999) found users can never be satisfied in emergent organizations, because their needs are always changing. The user-to-systems relationship, which often experiences continuing conflict, requires application systems flexibility. This viewpoint holds that IS projects should not only focus on design and development activities, but also value the adaptation activities in both implementation and post-implementation stages (Markus et al., 2003; Ross et al., 2003; Truex et al., 1999). As emphasized in prior studies, this calls for considering IS flexibility through the overall life cycle in addition to planning and crafting an infrastructure of IT (Byrd & Turner, 2000; Lewis & Byrd, 2003). Despite a wealth of research on IS flexibility and its impacts on organizations and business processes (Gebauer & Schober, 2006; Moitra & Ganesh, 2005; Sambamurthy et al., 2003), decisions regarding IS flexibility, especially considering the entire IS life cycles, have rarely been included into the analysis. As a result, flexibility guidelines for managing IS have not been developed.

In addition, the benefits of IS flexibility are difficult to measure physically or objectively; particularly as they are perceived by both IS staff and system users. IS flexibility to accommodate changes in the supported business processes depends on the various ways staff members combine application functions with business activities (Askenas & Westelius, 2003; Moitra & Ganesh, 2005). Thus, this study uses an interpretive flexibility perspective that differs with most prior studies which consider IS flexibility as being built into IT artifacts through IS design and development activities (Byrd et al., 2004; Byrd & Turner, 2000; Lewis & Byrd, 2003). In addition, this study asserts that the cognitive factors of staff members would influence the decisions and adaptation activities associated with IS flexibility.

Flexibility comes at the price of complexity and the additional investment required (Gebauer & Schober, 2006; Stigler, 1939). The decisions regarding IS flexibility are filled with the tradeoffs that need to find a balance between IS rigidity and IS complexity (Gebauer & Schober, 2006; Silver, 1991). IS implementation always involves the risk of failure from rigidity, changing requirements, or too much complexity to maintain. Therefore, we apply the concept of perceived risk from the consumer behavior literature to analyze the perceived requirement for IS flexibility. This perception is related to decisions for lowering or limiting the risk of
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