

Chapter XVII

Understanding Organizational Transformation from IT Implementations: A Look at Structuration Theory

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ABSTRACT

Past evidence suggests that organizational transformation from IT implementations is rare. Data warehousing promises to be one advanced information technology that could produce transformation. Based on the stages of growth theory and adaptive structuration theory (AST), this paper attempts to understand how data warehousing could lead to organizational transformation by studying a data warehouse's growth in an organization. In particular, the benchmark variables for data warehousing stages of growth are examined using adaptive structuration theory to explain organizational transformation that takes account into unique organizational situations.

INTRODUCTION

From its beginnings, MIS has made promises of revolutionary organizational transformation through the use of information technology. Leavitt

and Whisler (1958) were among the first MIS scholars to predict that computers would have dramatic impacts on organizations. These promises and predictions motivated management in many organizations to implement IT innovations with

the hopes of dramatically affecting organizational performance. Researchers have discovered the evidence of organizational transformation in streamlined organizational business processes, increased decision making, enhanced user skills, improved competitive advantage, and ultimately faster organizational growth (Davenport 2000a; Davenport 2000b; Waston et al. 2002).

The potential benefits reaped through IS implementations usually occur over a sustained time period. Most past IT implementations have been perceived as one-time product implementations producing or enhancing a given business process. In contrast, data warehousing is an advanced information technology perceived more as an IT infrastructure project that has the potential to trigger changes in organizational business processes as it interacts with other sources of organizational structure (DeSanctis et al. 1994). It is perceived more as “a journey, not a destination.”

Despite the general impact of advanced information technologies on organizations (Bharadwaj 2000; Oh et al. 2007; Pavlou et al. 2006), empirical cases demonstrate that different organizations have exhibited different patterns of transformations (Waston et al. 2002). Some have seen improved user skills and increased efficiency, others have seen the revitalization of organizational business processes, and some others have experienced the transformation of organizational culture (e.g., Cooper et al. 2000; Waston et al. 2002). The diversity puzzles practitioners who want to identify and understand organizational transformation due to the introduction of a new information technology, and also challenges researchers as to how to discern distinct transformation patterns for each single organization.

The potential of an IT to evolve and transform business processes in organizations makes it an interesting phenomenon to study. Kotter proposed a prescriptive model for organizational transformation (1995). Recent research has documented

the various patterns exhibited by this phenomenon (Cooper et al. 2000; Goodhue et al. 1999; Hayley et al. 1999; Watson et al. 2001). The results of these research efforts present vital information about the complexity, the issues and steps leading to a successful technology adoption and consequent organizational transformation. What is missing is the examination of patterns of organizational transformation through the process of IT implementations.

The purpose of this paper is to demonstrate how examining benchmark variables in stages of growth using adaptive structuration theory can be applied to gain an indepth understanding of organizational transformation that takes into account unique organizational situations. In particular, we intend to answer the following research question “How organizational transformation takes place within the context of data warehouse adoption.” By combining aspects of the stages of growth theory with AST, we are able to provide useful insights into transformation patterns that are unique to a single organization.

The paper is structured as follows. We first review the extant literature on IS implementations and innovation adoption. We then present the adaptive structure theory (AST), and apply the theory to capture the intricacies of change in data warehousing at a detailed level and provide reasoning as to why many warehouse implementations show varying patterns of organizational transformation.

THEORETICAL BACKGROUND

Research on Information Systems Implementation

An IS implementation is a complicated process involving the interaction among technology, people, and business processes (Kwon et al. 1987; Leonard-Barton 1988; Lucas et al. 1990; Purvis

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