Chapter 62
Socio-Technical Change Perspective for ERP Implementation in Large Scale Organizations

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ABSTRACT

Organizations must enhance their firm-level resources to compete in the turbulent business environment. Strategic application systems, such as an enterprise resource planning (ERP) system, are one such resource technology that centralizes the database of the organization to enable a seamless view of the organization. However, implementation of ERP systems in organizations has not been a success story for many. ERP systems implementation brings about large-scale organizational change, and hence, it becomes essential for stakeholders to have a reference framework for planning for various dimensions of the organization. Hence, this chapter applies a general morphological analysis (GMA) to identify the most suitable theory to analyze ERP implementation. Socio-technical theory with Leavitt's diamond model were analyzed as most appropriate since they are based on the premises of organizational change at firm level. The socio-technical organizational change model will enable stakeholders to analyze resources required for core dimensions of the organization for ERP implementation.

INTRODUCTION

Successful implementation of an Information System (IS) is vital for sustaining and enhancing the competitive position of an organization (Gunasekaran, 2005; Jing & Qiu, 2007). Management thinking and practice reflected the trend of implementing IS by relating Information Technology (IT) based development to the strategic needs of the business to develop a competitive advantage (Galliers & Baets, 1998; Al-Mudimigh, Zairi & Al-Mashari, 2001). As computing concepts and technology advanced with time, the scope of the business systems widened to become Enterprise Resource Planning (ERP). ERP enables today's fiercely competitive business environment that requires deeper interaction between customers and organization to coordinate entire value-chain of the organization. Hence disjointed functional departments are integrated as process-oriented cross functional departments, generically known as value chain system. From technological perspective, ERP evolved from legacy systems to more flexible tiered client-server architecture and a software product that represents the final stage of an evolution towards integration, originating from IT supported manufacturing (Klaus, Rosemann & Gable, 2000). ERP facilitates in achieving greater benefits from the databases and ensures that the system environment is built following an open system approach (Al-Mashari, 2003) enabling companies to standardize business processes with ERP system and more easily endorse best practices. By creating more efficient processes, companies can concentrate their efforts on serving their customers (Gunasekaran, 2005; Laframboise, & Reyes, 2005), maximizing profits (Laframboise, & Reyes, 2005) and reducing costs (Gunasekaran, 2005) for the organization. As ERP continues to evolve into a real-time planning tool, it will play a more strategic role in helping companies achieve their business objectives. ERP has grown from coordination of manufacturing processes to integration of enterprise-wide back-end processes and in the internet era it evolves to become the database backbone for an organization's web based front-end technology to stay connected to customers.

Organizations are yet to realize efficiencies and cost-savings as originally planned. Most organizations that are implementing ERP do not find success and struggle with ERP implementations. Meta Group reports 70 per cent failure rate of ERP implementation projects. However, adopters have not been intimidated by risks of implementation which is indicative of the boom in ERP market fueled by globalization, midmarket growth and other factors. The ERP software market reached $47.7 billion by 2011, a compound annual growth rate of almost 11% according to AMR Research Inc. The technical system (Lee, 2000; Lee, 1999; Bostrom & Heinen, 1977) of the organization comprising of ERP and its required infrastructure and business processes acts as an enabler in achieving the organization's strategic goals with successful implementation of ERP. ERP implementation is not only a technical system imperative but has to synergize with the social system of the organization. Lee (2004) states that as social systems seek information from technical systems, the technical systems too pose its own organization requirements on the social system. From this standpoint, ERP implementation research can be classified into two major groups where ERP deployment corresponds to a technical system and ERP organizational intervention corresponds to a social system. Though ERP implementation is highly researched, a framework illustrating all its dimensions to enable the organizational decision makers to configure the most suitable combination of variables for a research theme is lacking. The objective of this chapter is to develop a General Morphological Analysis (GMA) framework to identify and illustrate research dimensions for ERP implementation research. GMA framework is a highly structured and illustrative method to identify all possible combinations of dimensions and variables for creating models of systems and processes, which are usually non-quantifiable. Extensive literature review is carried out to categorize

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