Conceptualizing Dimensions of Enterprise Resource Planning Systems Success: A SocioTechnical Perspective

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ABSTRACT

The success of implementing Enterprise Resource Planning (ERP) system has substantial benefits to an organization due to its large scale tangible and intangible benefits. However, the failure of ERP system implementation is a considerable challenge since it poses significant intervention on internal stakeholders, internal organization, business processes and technology. Though literature recognizes that these interventions bring about technological change during ERP implementation, hardly any article has conceptualized these interventions in evaluating its performance. Drawing on the Process-Variance (PV) and Adapted Socio Technical (AST) system perspectives, the objective of this article is to conceptualize the interventions through socio-technical perspective and develop a comprehensive conceptual model to assess the success or failure of ERP system implementation. The conceptual model, Process-Variance and Adapted SocioTechnical (PVAST) proposed in this article will enable decision makers and practitioners to measure ERP project performance at every stage of its life cycle in a coherent method and adopt corrective measures.

Keywords: Business Processes, Critical Success Factors, ERP Implementation, Internal Organization, Internal Stakeholders, Leavitt’s Model, Process Perspective, Socio Technical Perspective, Technology, Variance Perspective

INTRODUCTION

Information Systems (IS) of organizations have evolved from disjointed business processes to a boundary-less and cross functional structure by transforming functional enterprises and organizing their independent functions into process value chains. ERP system software, an Information Technology (IT) driven initiative enables a value chain (Shehab, Sharp, Supraniam & Spedding, 2004) based organization structure by allowing seamless flow of real

DOI: 10.4018/ijeis.2014010104
time information across functional processes of the organization and empowering organizational stakeholders with precise decision making (Arnold, 2006). External indicators like globalization of markets and operations (Gunasekaran, 2005) and competitive pressure; internal indicators such as increasing costs in inventory, administration and so forth, resulted in Hammer & Stanton (1999) claiming that organizations have to inevitably restructure into process enterprises by strategically orienting themselves in this manner to stay competitive. ERP as an application software is distinguished from other general software due to the tangible and intangible benefits it can bring about by its organizational impact. Therefore, organization stakeholders can consider internal factors like organizational context, stakeholders, culture, processes and external factors like globalization, competitiveness and customer requirements for successful implementation of ERP. Organizational change that occurs with ERP project necessitates organization stakeholders to implement ERP successfully and evaluate its performance. ERP intervention requires managing change brought about by implementing IS and the mutual interaction it has with the organization’s socio technical context, which is intertwined of technology, people (Davis & Olson, 1985), organizational context and processes (Uzoka, Abiola & Nyangeresi, 2008).

ERP systems are vendor developed software applications necessitating enormous monetary investment by the organizations for its implementation. Costs of ERP project constitute a large amount (Janssens, Kusters, & Heemstra, 2008) which many organizations find difficult to estimate compared to the ERP software itself. Symons (2006) claims organizations are under increasing pressure from top management to demonstrate and improve the business value of their investments made for IT. The risk associated (Grant & Tu, 2005) with the intervention of ERP system monetarily as well as the organizational changes it brings about, implies that practice of only post facto performance evaluation in itself is inadequate. Emphasizing importance of evaluating IS, Beynon-Davies, Owens, & Williams (2004) claim organizations need to evaluate the IS during the life cycle of the IS development process and develop a framework to accommodate the evaluation process during every stage of development. Though the author’s research question is contextual to IS development, this question is valid for ERP systems as well.

Contemporary literature categorizes ERP implementation as either a process approach; performance of the system is evaluated through a series of phases or variance approach; identifies a priori Critical Success Factors (CSF) essential for success of ERP project. ERP implementation frameworks based on either approach defeats the purpose of mitigating risk because the former approach necessitates rigour in evaluation as ERP project transitions from antecedent to consequent phase. In the latter perspective, a CSF based framework is insufficient in addressing the performance of ERP implementation in each phase and taking appropriate corrective measures. The objective of the research is to address this conceptual gap in twofold: first, by developing an integrated framework of process and variance perspectives to identify CSF for each phase of ERP implementation and second, to categorize CSF into four dimensions; internal stakeholders, internal organization, business processes and technology. This will give a better perspective for stakeholders to take up corrective actions at each phase of ERP implementation. This research contributes to development of theory to measure the performance of ERP system implementation and develop associated concepts to evaluate the success or failure of ERP project. Theory development in this article sets a foundation for an empirical study with statement of propositions which are relationships between
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