Critical Success Factors of ERP Implementations

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ABSTRACT

This investigation will identify and examine critical success factors (CSF) that impact each stage of the implementation process related to the deployment of Enterprise Resource Planning (ERP) systems in diverse North American settings. Using business organizations in various locations throughout North America, the critical success factors associated with ERP implementation will be: (1) identified; (2) ranked for relative importance; (3) designated as relevant within a specific implementation stage; (4) examined for differences in setting; and, (5) classified as best practices in implementation by stage. The outcomes of this research will include the: (1) development of a taxonomy of critical success factors delineated by the specific stage of implementation where each CSF is most important; (2) creation of a framework that identifies country differences in critical success factor preference; (3) establishment of a comprehensive organizational guide that provides prescriptions for effective systems deployment; (4) dissemination of the research findings through academic publications; and, (5) integration of identified critical success factors within university curricula. This project study supports collaborative research between Canadian and U.S. institutions of higher education.

PROJECT OBJECTIVE

The objective of this research proposal is to document the critical success factors (CSF) necessary for successful implementation of Enterprise Resource Planning (ERP) systems within different organizational and national settings, regulatory venues and corporate cultures. Business organizations in North America that have completed an ERP project within the past two years will be identified and a request for their participation will be solicited. To accomplish this objective, the researchers have segmented the research agenda into two phases: (1) a qualitative phase where CSFs will be identified using a grounded theory approach (Glaser and Strauss, 1967) as detailed in this proposal; and, (2) a quantitative phase where CSFs will be modeled and empirically tested from data collected from questionnaires.

Based on a Grounded Theory approach (Glaser and Strauss, 1967), the researchers will employ Narrative Inquiry supported by the Long Interview Technique (McCracken, 1988) in a qualitative interview format to generate a comprehensive catalog of implementation CSFs. Content analysis will be used to examine diverse corporate cultures, to identify implementation success factors and application variance. The outcomes of this research project are to: (1) create a taxonomy of critical success factors that are linked to the specific implementation stage where each will produce the greatest impact; (2) establish a framework to delineate country differences in CSF preference; (3) generate a comprehensive implementation guide for business organizations; (4) produce research for publication in relevant academic journals; and, (5) incorporate the value-added knowledge gained from this research into the information systems curriculum in selected institutions of higher education. This project provides an opportunity to achieve a unified prescription for organizations to use in implementation.

This research is important because of the current and projected magnitude of the ERP market. In particular, the market for ERP systems is expected to reach $US 1 trillion by 2010 and ERP costs for companies range from $50,000 to hundreds of millions of US dollars. The growth of ERP systems can be attributed to the expected system benefits that include the integration of data and applications, the replacement of legacy systems, and expected cost advantages. Given these estimates, understanding what critical success factors are most important at each stage of the deployment process should help reduce the negative outcomes associated with ERP implementation.

What is missing from the available research reports is a detailed investigation of factors encountered at various stages of an ERP implementation and a comprehensive context based description of successful implementation processes, procedures and policies – best practices. Thus, at various stages throughout the ERP implementation project problems and challenges will be analyzed. These factors may be those that are anticipated and what plans exist for their resolution; or completed issues and how they were resolved. The goal of this study is to understand ERP implementation issues and how they differ across different business settings.

METHOD

Qualitative interviews will be conducted to gather stakeholder interpretations of critical success factors in each stage of the ERP implementation. The stakeholders who will be interviewed represent the most important opinion-holders within the company about issues that may arise during an ERP implementation project. Four stakeholders from each company will be interviewed. The interview approach will be based upon Narrative Inquiry and supported by the Long Interview Technique (McCracken, 1988).

Narrative Inquiry (Girden, 2001; Scholes, 1981) documents research participant's interpretations of events which are contextually rich and temporally bounded. The contextually rich concept relates to events that have been experienced first hand, and therefore are more vividly remembered (Swap et al., 2001; Tulving, 1972). The concept of temporally bounded suggests that the narrative will have a beginning, and end, and a chronological sequence of events in the interim. This sequential aspect supports the clarity of recollections (Bruner, 1990; Czarniawska-Joerges, 1995; Vendelo, 1998).

The Long Interview Technique (McCracken, 1988) supports the above Narrative Inquiry concepts. The technique employs three types of questions. First, "grand tour" questions are general allowing the respondent to decide upon the substance of the response. "Planned prompts" are those questions that are decided upon before the interview. These questions relate to the subject under investigation and may be gleaned from previous projects or a review of the available literature. These types of questions also facilitate comparisons across interviews because common areas will be discussed with each participant. During the interview "floating prompts" may also be employed. These questions relate to the researcher's decision to pursue a line of questioning in order to obtain more detail about a specific response. All interview data will be recorded with the knowledge and agreement of the research participant.

The Interview Protocol developed for this project represents the results of applying the Long Interview technique within the Narrative Inquiry approach to investigating ERP implementation. The first major section obtains information about the specific person. The second section gathers information about the company. The last section follows the Narrative Inquiry approach to obtain participants' perspectives on their experiences at various stages of an ERP implementation. Issues will be discussed chronologically based upon the stages of the ERP implementation.

EXPECTED OUTCOMES

The outcomes of this research will include the: (1) development of a taxonomy of critical success factors delineated by the specific stage of implementation where

each CSF is most important; (2) creation of a framework that identifies country differences in critical success factor preference; (3) establishment of a comprehensive organizational guide that provides prescriptions for effective systems deployment; (4) dissemination of the research findings through academic publications; and, (5) integration of identified critical success factors within university curricula.

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