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An Exploratory Study of Factors Influencing the Relationship Between Project Management Style and Project Success

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Abstract

A recent study by Barki, Rivard and Talbot (1997) identified a contradiction between project management practice and theoretical expectation. One possible explanation for this contradiction is the influence of other factors on the relationship between management style and project success. This paper presents results from an exploratory study designed to identify other important factors. The contribution of this paper is the introduction of a conceptual model that more thoroughly explains the relationship between project management style and project success. On-going research will empirically validate this model making a more valuable contribution to IS research.

Introduction

The purpose of this study is to explore the relationship between project management style and project success. Early IS research identified the impact of project uncertainty on this relationship (Zmud, 1980; McFarlan, 1981; Beath, 1983). A recent study by Barki et. al. (1997) empirically tested this relationship and results contradicted theoretical expectation. One possible explanation for this contradiction is the influence of additional variables not considered in the study (Keil, 1995; Kliem and Anderson, 1996). For example, researchers have found team development to influence the relationship between project management style and project success (Constantine, 1993; Deephouse, Mukhopadhyay, Goldenson, and Kellner, 1995). Significance of other factors is still unknown (Janz, Wetherbe and Davis, 1997). The purpose of this paper is to present the results of an exploratory study that was designed to better understand the relationship between management style and project success.

Literature Review

Contingency theory states that effectiveness is impacted by a congruence between organizational factors and the external environment (Burns and Stalker, 1961; Lawrence and Lorsch, 1967). In the information systems field, several researchers have relied on contingency theory to explain project management practice based on the argument that there is no one correct way to manage all projects (Alter and Ginzberg, 1978; Zmud, 1980; McFarlan, 1981). The main factor studied as a cause of this contingency in project management is project risk, more specifically project uncertainty (Zmud, 1980; McFarlan, 1981; Beath, 1983). Theory suggests that as environmental uncertainty increases, project managers should encourage facilitation in order to acquire and share information and knowledge to cope with uncertainty. This relationship has been supported empirically by organizational researchers who have found that the way organizations are managed varies according to the uncertainty in the environment (Tung, 1979; Bourgeois, 1985).

Zmud (1980) and McFarlan (1981) developed different management style taxonomies for varying levels of project risk based on contingency theory. Both taxonomies suggest that the higher the project risk, the more managers need to facilitate information flow to the decision makers who are confronted with the uncertainty. On the other hand, managers can take focus away from managing uncertainty in projects with low risk. Project success can be enhanced by plans and controls in low-risk project management. Barki et. al. (1997) empirically tested McFarlan's taxonomy by studying 20 highly successful projects with varying levels of uncertainty. Two dimensions (application size and lack of expertise) were found to significantly impact project success, however the relationships between constructs were contradictory to theoretical expectation. As uncertainty increased, project managers initiated greater control.

The fundamental proposition of this paper is that in order to explain the relationship between project management style and project success, a multitude of factors and relationships need to be considered (Keil, 1995). Deephouse et. al (1995) and Janz et. al. (1997) have found empirical support for the impact of team development on project success. The exploratory study described below is an attempt to identify additional factors that may influence this relationship.

Research Methodology

To explore the relationship between project management style and project success, subjects were asked two open-ended research questions based on the contradiction found by Barki et. al. (1997). Prior to the study, the research subjects were introduced to McFarlan's (1981) taxonomy and the empirical results found by Barki et. al. and asked, based on their experience,

to answer to the following: (1) Do you think this contraction was found due to inappropriate theory or ineffective project management practice? (2) What other factors may explain the relationship between management style and project success?

The subjects were 38 graduating students from the computer science and software engineering faculties at the University of Western Ontario. Students from these faculties were appropriate subjects as they had been introduced to management theory through completion of a course in project management, as well as through work placements in a variety of software development companies.

Results

Data was analyzed by a team consisting of a professor/researcher from the computer science faculty and a Ph.D. student from the faculty of business. Two sets of preliminary results were gathered as both individuals reviewed answers individually and recorded information relevant to the two research questions. In a comparison of the preliminary analysis, results from question 1 were recorded 100% consistent between both individuals. However, inconsistency was found in the identification and naming of other factors identified in question 2. To eliminate this inconsistency, the team met to discuss their interpretations of each factor and agreed to a common set of factors for the final results. Using these factors, both individuals reviewed the answers one final time to record the final results.

Discussion

Results from this study suggest that the relationship between project management style and project success may be contingent on several important factors. Figure 1 illustrates the findings of this study in a conceptual model.

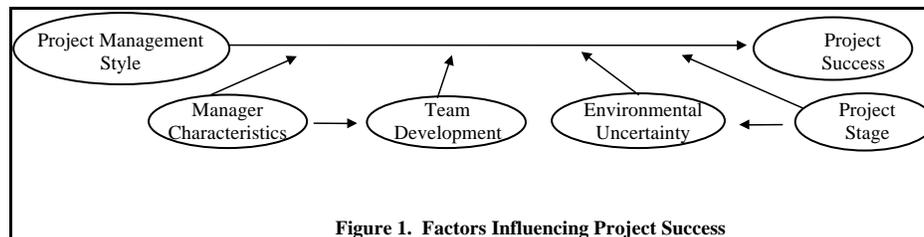


Figure 1. Factors Influencing Project Success

Unique contributions include the identification of the influence of management characteristics and project stage. Fifty-eight and eighteen percent of subjects suggested that rational and learned behavior, respectively, are important factors influencing the relationship between management style and project success. Rational behavior was

defined as the human tendency to avoid uncertainty and change. Learned behavior refers to the range of management skills possessed by the project manager. Kliem and Anderson (1996) support the influence of rational behavior in their study of the influence of manager's personality on project performance. They also suggest that behavior style influences the project manager's ability to build an effective team, explaining the relationship between management characteristics and team characteristics in the model. Lastly, thirty-two percent of subjects supported the proposition made by Zmud (1980) that different styles of management will be effective at different stages of the project development lifecycle due to the belief that project phases influence the level of uncertainty.

Limitations

Several limitations circumscribe the extent to which findings of this study are generalizable. The small sample of student subjects are not representative of the population, however were sufficient for an exploratory study. Another limitation is that one individual on the analysis team was the author, therefore raising the possibility of biased results. Arrangements have been made to have the data analyzed by an additional team to decrease the likelihood of biased results.

Conclusion

As the purpose of this study was exploratory, not to generalize to a population, the limitations identified do not minimize the validity of the results. The contribution of this paper is the introduction of a conceptual model to more thoroughly explain the relationship between project management style and project success. Empirical validation of this model is the subject of ongoing research. Identification of factors that significantly influence project success will also contribute to the development of new perspectives in software project management practice. Validation of this research model will suggest that managers need to possess the competence to control, as well as facilitate integration, in order to manage all phases of a software development project.

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