Recognizing Constraints on Project Success

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ABSTRACT

The Standish Group (2004) claims only 29% of IT projects are completed on time and on budget, with all features and functions originally specified. The use of a development methodology as long ago as 1970 has been considered critical in project success when building systems, however, the choice of which methodology is best suited for these projects is still under debate (Glass, 2004). This research-in-progress begins to identify the relationships between organization, project, and team variables that lead to project success.

INTRODUCTION

System development methodology was first formalized by Royce in the 1970s (Royce, 1970). It provided a consistent and reproducible approach in the analysis, design and delivery of data processing systems. This complex process was divided into plausible and coherent, linear steps that applied techniques and resources at appropriate times. Boehm (1986, 1988) introduced an iterative approach with the primary focus of reducing project risk associated with long implementation times. Aoyama (1993) documented a parallel methodology where concurrent development focused on the simultaneous execution of multiple processes to shorten cycle time. Agile development models developed most successfully by Beck (1999) had the primary goals of rapid value and responsiveness to change (Boehm & Turner, 2003). However, none of these methodologies is best suited to system development of all information systems, and Web Information Systems appear to demand a different methodology than that which has been used for traditional Information Technology projects (Steinbach & Knight, 2005). This study explores the relationships among a variety of organization, project, and team variables with the goal of better understanding the relationship between these variables, system development methodology, and project success.

METHODOLOGY

The variables to be studied were based on an extensive literature review of existing system development methodologies. These methodologies were analyzed for situations where they were most likely to be beneficial. For example, when there is need for rapid implementation of the project, an iterative methodology may be more suitable than a parallel one. See Steinbach and Knight (2005) for the complete analysis. Using the variables from this analysis, a Web-based explanatory survey was conducted using a purchased, opt-in mailing list purchased from a major Website frequented by information system developers. Respondents were asked to rank qualitative variables related to organization, project, and team variables.

SUMMARY OF RESULTS

One hundred thirty-one self-qualified IT project managers responded from a mailing list of 5,750 for a response rate of 2.29%. The majority of the organizations represented by the respondents were large (greater than 5,000 employees) entities from service, financial and government sectors (*Figures 1 and 2*).

DATA ANALYSIS TO DATE

At this point, ten hypotheses, out of a total of 15 hypotheses in the entire study, have been tested using **the chi square test of independence which measures the strength of associations between variables**. Of these ten, five provided unexpected results and are highlighted by bold type in the list below.
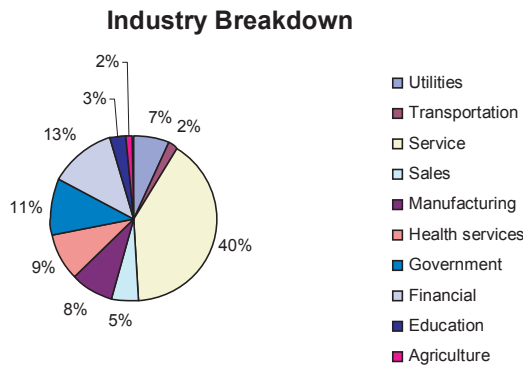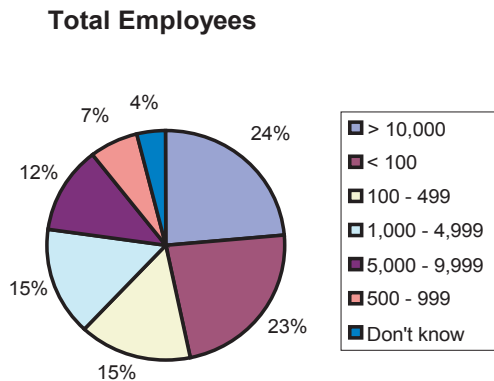
Figure 1

Industry Breakdown

Figure 2

Total Employees

Users' Objectives

H1: *If the users' objectives for the project were clear, the project requirements were clear.* As expected, there is a strong association between the variables.

H2: ***If the users' objectives for the project were clear, the project's users were satisfied.*** There is no association between users' objectives and satisfaction. This is an unexpected result and warrants further discussion.

H3: ***If the users' objectives for the project were clear, project approvals were not required.*** There is no association between users' objectives and approvals. This is an unexpected result and warrants further discussion.

Project Approvals

H4: ***If project approvals were required, the culture in the organization is controlled.*** There is no association between project approvals and the culture in the organization. This is an unexpected result and warrants further discussion.

H5: ***If project approvals were required, the strategy of the organization is clearly defined and committed.*** There is no association between project approvals and the strategy of the organization. This is an unexpected result and warrants further discussion.

Knowledge of Users

H6: *If the users were known to the project's managers, the users' objectives were clear.* As expected, there is a strong association between the variables.

H7: *If the users were known to the project's managers, the project requirements were stable.* As expected, there is a strong association between the variables.

Project Risk

H8: *If project risks were well identified, the project was completed on time.* As expected, there is a strong association between the variables.

H9: *If project risks were well identified, the project was completed within budget.* As expected, there is a strong association between the variables.

H10: ***If project risks were well identified, the project was completed with expected features and functionality.*** There is an association between the variables, but not as strong as expected.

DISCUSSION

Discussion of these results and other results that are analyzed between now and the final paper deadline will be included in the expanded submitted paper.

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