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Joan Mann

Georgia State University, CISJEMX@INFLI.NET

Mark Keil

Georgia State University, CISMMK@GSUSGI2.GSU.EDU

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Identifying and Preventing IS Project Escalation: A Survey of IS Auditors

Joan Mann(CISJEMX@INFLI.NET) and Mark Keil (CISMMK@GSUSGI2.GSU.EDU)
Computer Information Systems, Georgia State University, P.O. Box 4015, Atlanta, GA
30303-4015

Introduction

Trade surveys have estimated that from 30% to 65% of IS development projects become 'runaways' -- projects that 1) fail to produce an acceptable system, 2) grossly exceed initial budget/time estimates and, 3) seem to take on a life of their own. Even that the United States spends over \$250 billion annually on IS development [Johnson, 1995], it is important to ask why runaway projects occur. In this research study, we focus on why such poorly performing projects are allowed to continue for so long.

Based on data from several specific cases of runaway projects, we believe runaways are a form of organizational decision making failure. Consider this scenario: a development project encounters some problems which may be serious enough to cause the project to fail. The decision maker(s) responsible for the project have two choices: continue the project or abandon it (either terminate it or radically redirect it). If the decision maker consciously chooses to continue committing resources to the project or never consciously considers abandonment, the behavior represents an escalation of commitment or escalation, for short. Runaway projects result from many such decision points. Eventually these continuation (escalation) decisions take the project beyond its initial time/cost targets. Each subsequent escalation decision leaves these targets further and further behind until there is a feeling that 'the project is out of control'. Runaway projects, therefore, come from project escalation -- the continued allocation of resources to projects despite negative feedback relating to project performance and the likelihood of success.

Research Strategy

This study focuses on determining which factors best explain why decision makers continue to commit resources to poorly performing projects. The study will involve a mail survey of 2300 IS auditors. Each auditor will be asked to select a project that continued to receive resources even though the respondent felt the project should have been discontinued or significantly redirected. A control group will also be asked to select a project which progressed smoothly enough that continuation was judged to be warranted. Follow-up interviews with a selected set of respondents will be used to collect details on specific cases of project escalation.

Research Constructs

Independent Variables: The independent variable constructs used in this research are factors that may explain why these projects continued for so long. According to the trade press, runaways result from the same project management problems that cause projects to fail (Ex: poor planning, poor analysis/design, etc.). We examined several studies of IS development and identified many factors which might influence escalation decision making (Ex: [Thayer, et. al. 1981], [Van Genuchten, 1991], [Thambain and Wilemon, 1986]). These factors became one set of independent variables for this study. (See below)

Independent Variables from Project Management

- Poor Planning
- Poor Monitoring
- Poor Control
- Poor Estimation
- Poor Analysis and Design

Using our knowledge of specific cases of escalated projects, we theorize that there are a limited number of reasons why a project management problem might lead to project escalation:

Escalation by default: when project management problems prevent difficulties from being noticed or corrected (ex: poor monitoring, poor communication)

The 'We will get it right this time' rationale for continuing: when project management problems cause small but recurring difficulties (ex: poor analysis/design, poor estimates of size, complexity, cost)

Project evaluation errors: when project management problems prevent accurate evaluation of the situation. (Ex: poor estimation, poor planning)

A second source of potential factors came from the research area of escalation theory. For the past 15 years escalation theorists have used several different behavioral theories in a variety of experimental situations to explain why people continue to commit resources to endeavors that have little chance of succeeding (see [Staw and Ross, 1987], [Brockner and Rubin, 1985] for reviews of this research). These experimental situations varied from puzzle solving to auctions and investment projects. The variables used were either psychological (ex: personal responsibility) or social (ex: face saving). The common perspective of these researchers is that decision makers escalate for behavioral reasons. Several research studies have demonstrated the relevancy of escalation theory to IS development projects: either by analyzing a case study of a runaway project using escalation theories [Keil, 1995] or through experiments that invoked escalation behavior using IS development scenarios and escalation theory variables ([Schneider, 1993], [Keil, et. al., 1995]). For the purposes of this study, only the variables that would best distinguish commonly cited escalation theories were chosen as independent variables. (See Table 1)

Table 1: Independent Variables from Escalation Theory

Theory	Definition	Variables
Justification Theory (self-justification and external justification)	Continue in order to justify past commitment	Personal Responsibility (psychological), External Justification (social)
Prospect Theory	Information processing biases encourage continuation	Sunk Cost Effect, Completion Effect
Agency Theory	Agent has motivation and opportunity to act contrary to principal's goals	Information Asymmetry, Goal Incongruency
Approach-Avoidance	Continuing has both + and - consequences both the + consequences are stronger	R&D View, Strategic Importance

Dependent Variables: The dependent construct is escalation (i.e. the degree to which the project was a runaway). Escalation was measured using three variables: how long the project continued after the respondent thought it should be discontinued or redirected, the degree to which the project was over budget/late, the degree to which others in the organization thought it should be discontinued or redirected.

Data Collection and Analysis

The survey will be pretested in two ways. First, a small group of auditors will be asked to fill out and critique the instrument. Then, the instrument will be tested for validity and reliability with a sample equal in size to five times the number of constructs. If the reliability and validity are acceptable the instrument will be administered to the full sample of 2200. The control survey will be sent to at least 20% of the sample. The data collected from the survey will be analyzed using LISREL, ANOVA and Canonical Analysis to determine which factors are associated with project escalation and to compare escalated projects with non- escalated projects (the control group). The field interviews will be analyzed using qualitative techniques in order to identify the events involved in escalation and to validate the results of the survey portion of the study.

Current Progress

The Information Systems Audit and Control Association has agreed to sponsor the research and will be providing access to their mailing list. This organization feels it is important for auditors to be able to identify and prevent IS escalation and is therefore interested in creating an auditing standard on this issue.

The survey instrument has been written and then pretested with seven audit and control professionals. We were pleasantly surprised at how eager people were to talk about escalated projects. In one case, an auditor went down to the IS department to talk about this issue before the interview. In another case, the respondent asked four other people to a lunch meeting to discuss the instrument. One auditor spent almost two hours filling out the survey and talking through his thought processes. We learned that escalation is quite common, that both project management and behavioral factors influence escalation and that auditors are in a good position to judge when a project is organizationally dysfunctional.

By the same token, it appears the interviewees learned quite a bit from these discussions. One auditor said after the interview 'I have never looked for psychological reasons before, but I will now.'

Modifications to the instrument have been made in response to their comments -- phrasing reworded and items added . A second pretest with a small sample (n = 300) is in the works to evaluate reliability and validity before the final mailing (n = 2200).

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