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Reducing Ineffective Continuation Decisions: A Framework for Project Information

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ABSTRACT

Effectiveness of project continuation/cancellation decisions is a major concern for both the researcher and the practitioner. Past research has studied the possible psychological causes of different outcomes. The equivocality of information has also been offered as an explanation. This paper combines these ideas into a framework to study decision outcomes revealing additional detail about the information used and factors involved in project continuation/cancellation decisions.

Keywords

Project Management, Escalation, Cancellation, Abandonment

INTRODUCTION

The ubiquitous use of project management techniques in Information Systems development is testified by its inclusion in lists of best practices for information systems development (Davenport, DeLong and Beers, 1998; Feeny and Willcock, 1998; Holland and Light, 1999). But use of project management, in and of itself, is not a strong predictor of project success (Boehm, 2000). Stories of failed projects often cite the wealth of project management data that was available during the life of the project (Verner and Evanco, 2005; Wateridge, 1995; Wateridge, 1998), showing that mere usage of project management techniques is not complete protection against project failure. For whatever reasons, some project managers don't use the available information or don't use it correctly as evidenced by escalation scenarios (Keil, Rai, Cheney Mann and Zhang, 2003; Mähring and Keil, 2008; Sabherwal, Sein and Marakas, 2003), or cases of poor management (Pinto and Kharbanda, 1996). However the number of failed projects that have detailed and complete PM information is large enough to question whether some data is missing from common project management reporting practice.

One of the purposes of project management information is to provide an indication of the progress of a project in order to allow management to intervene in projects that deviate from plan. One of the means of intervention is project cancellation. Thus project management information should indicate when the project is in such a state that it should be cancelled. With an estimated 35% of projects being called "runaways" (Mahaney and Lederer, 2003) and cost overruns averaging 200% (Keil, Mann and Rai, 2000), clearly organizations are ignoring the indicators and/or there are deeper issues.

While past research has explored project abandonment (Ewusi-Mensah and Przasnyski, 1991), the impact of sunk cost effects and completion effects (see Keil et al., 2000), and the impact of goal incongruence and information asymmetry (Mahaney and Lederer, 2003) little, if any, research has explored the content of the information which is used in the decisions that result in the various outcomes. This leads to the primary research question for the study: What information allows some managers to make good project continuation decisions while others make bad project continuation decisions?

This study will discuss the question from the perspective of additional data that may be available to make project continuation decisions; ***is there a way to generate data that will more clearly indicate whether a project should be continued or cancelled?*** To accomplish this, a model is developed by working backwards from project status categorizations through the decisions and nature of the information which leads to the status. The model is then used as a map to seek information which when present contributes to improved decision making.

LITERATURE REVIEW

A review of literature surrounding project management decision and the errors that occur reveal three major streams of research.

Escalation

Escalation is ordinarily defined as increasing commitment to a failing course of action (Bowen, 1987). The phenomenon has been widely studied within the field of Information Systems Development (Keil and Flatto, 1999; Keil et al., 2003; Mähring and Keil, 2008; Pan, Pan and Flynn, 2004). Escalation is characterized by Information Systems projects that are continued well past a reasonable cancellation point. In most cases, escalation is viewed as a psychological phenomenon. A notable exception is Keil et al. (2003) in which constructs derived from project management literature are used to predict escalation in projects. This study views the predictive power of the Keil et al. (2003) study as an indication that other forces outside the psychological realm are at work.

In this study, escalation is not used as an explanation for projects that continue past the point where cancellation was reasonable. Instead, escalation literature provides a means to retrospectively declare a decision as incorrect. Due to the binary nature of the continue/stop decision, knowing that the decision to continue was incorrect demonstrates logically that the correct decision would have been to stop.

An additional finding from escalation literature is that decision makers are not always completely predictable users of information. One study determined that we can explain some escalation behavior through psychological theories such as self-justification, sunk cost effect, or completion effect (Keil et al., 2000). This study recognizes these factors and acknowledges the need to control for such situations.

Project Information

Past research has shown that the principal information used to assess projects is schedule conformance, budget conformance, and quality of the results (Atkinson, 1999). Additionally, the need for supplementary information beyond this classic information set for the purposes of decision making is acknowledged (Atkinson, 1999).

Another study shows that feedback in escalation situations can be positive, negative, or equivocal (Bowen, 1987). Often the idea that the course of action is failing is founded in the idea of negative feedback. Escalation is seen as occurring in part due to the equivocal nature of feedback. Bowen reasons that feedback must be perceived as negative enough to force action; that much feedback can be perceived as more or less negative depending on, among other things, its context. If the equivocality of the information being used is mapped onto a spectrum that ranges from clearly negative, through equivocal, to clearly positive, movement along the spectrum from an equivocal decision context to an unequivocal decision context could be accomplished by collecting additional data.

The idea that the structure of project management practice and information can influence decision makers' tendency to continue a project is not a new one (Sabherwal et al., 2003). Gross measures such as size of payoff for the project and cost of payoff were found to be moderately correlated with a decision to continue the project (Sabherwal et al., 2003). This represents another indication that there is more data involved than the large scale standard project management measures.

Abandonment/Cancellation

Abandonment literature has focused on the degree of abandonment (Ewusi-Mensah and Przasnyski, 1991) and the organizational factors leading to abandonment (Oz and Sosik, 2000). It has been found that some degree of abandonment may occur due to redirection of the project and that total abandonment may occur due to organizational issues or issues outside of management's control, such as a change in environment (Ewusi-Mensah and Przasnyski, 1991).

Noticeably absent from all of the research streams is the exploration of the actual information that is absent in the case of poor project continuation decisions when compared to good project continuation decisions.

RESEARCH MODEL

In order to find what information is missing in the decision equation, it is necessary to understand what decision is being made. In the case of project management continuation decisions, it is whether to continue work on the project, in either the current or a modified form, or to stop work and redirect the resources elsewhere.

In order to find the additional information that improves decision quality, it will be useful to study continuation decisions that, in retrospect, turned out to be incorrect decisions and compare them to continuation decisions that, in retrospect, turned out to be correct decisions. Comparing the actual decision made against the retrospectively correct decision then provides a two-by-two matrix into which projects can be classified based on the decisions made (see figure 1).

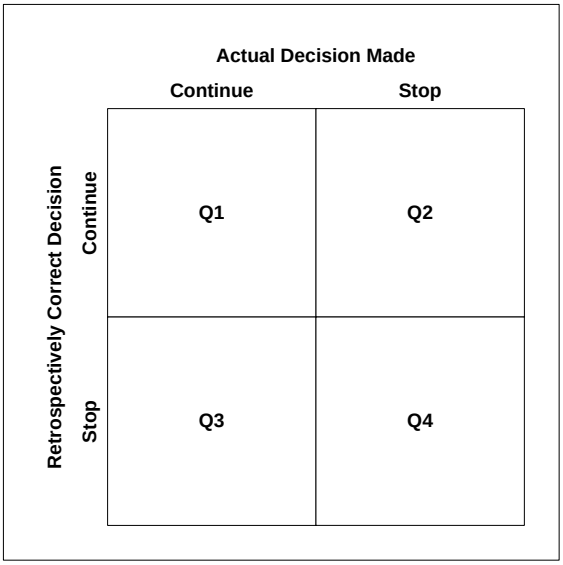

Figure 1

The resulting classification of a decision, based on the actual decision made and the retrospectively correct decision, into the quadrants then proceeds as follows:

Quadrant 1 – A continue decision was made and retrospectively the decision should have been to continue. This is a correct decision and results in proper continuation of the project.

Quadrant 2 - A stop decision was made and retrospectively the decision should have been to continue. This is an incorrect decision and results in abandonment of the project without good cause.

Quadrant 3 - A continue decision was made and retrospectively the decision should have been to stop. This is an incorrect decision and results in escalation of the project without good cause.

Quadrant 4 – A stop decision was made and retrospectively the decision should have been to stop. This is a correct decision and results in proper cancellation of the project.

Overlaying these definitions into the quadrants, the following diagram is derived:

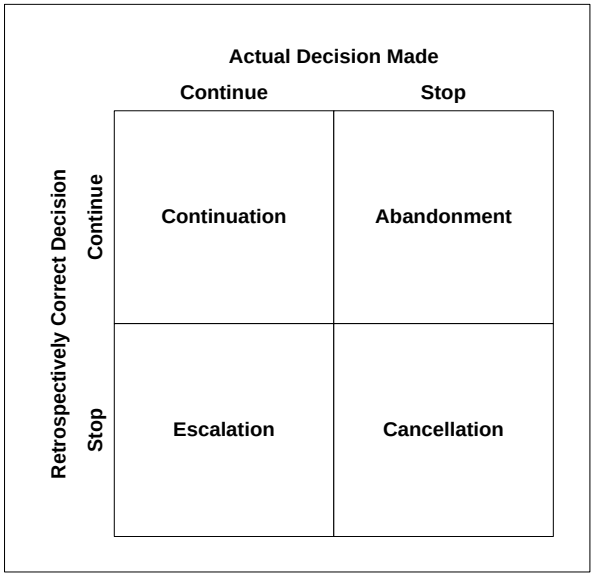

Figure 2

Bowen (1987) finds that the information in continuation decisions falls into three categories: clearly negative, clearly positive, and equivocal. Equivocal feedback is defined as feedback that reasonably supports both positive and negative interpretations; the definition also implicitly includes feedback that is neither clearly positive nor clearly negative. Placing these three categories on a continuum from positive feedback, through equivocal, to negative feedback provides an informative view when compared to the decision that retrospectively should have resulted from it. In the case of *clearly* positive overall feedback concerning a project, the obvious decision would be to continue the project. Conversely, when the overall feedback is *clearly* negative, the project should be stopped or redirected. The area between these two extremes, where the overall feedback is equivocal offers the greatest opportunity for poor decisions. This can be shown graphically by adding the retrospective view of the feedback figure 2 above (see figure 3). Equivocal indications fall on both sides of the "should have" continued / "should have" stopped line showing that equivocal feedback is insufficient, by itself, to make the proper decision, in agreement with Bowen.

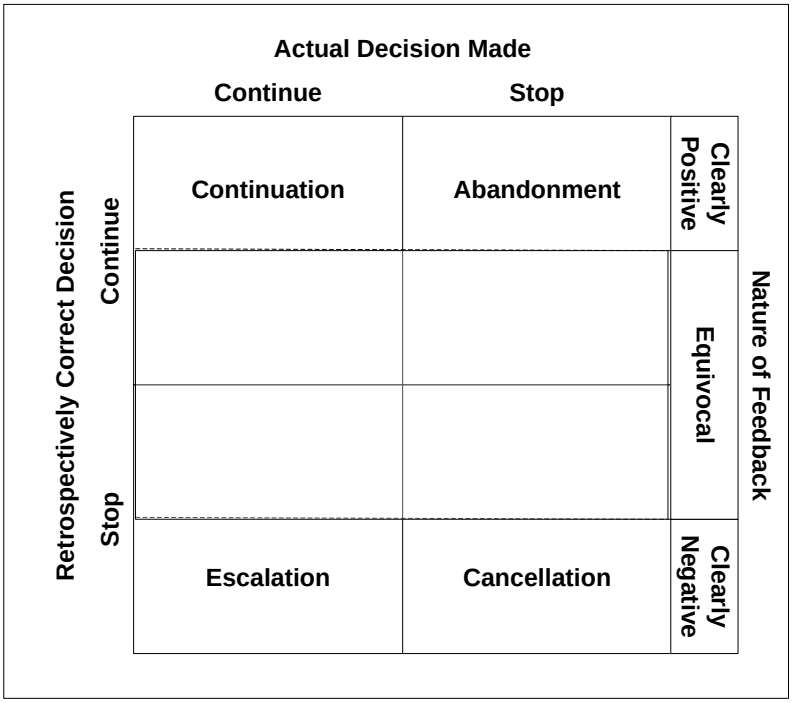

Figure 3

This results in a framework for classification of actual decisions under conditions of equivocal feedback according to the retrospective quality of those decisions.

IMPLICATIONS

The framework highlights comparisons that will allow an empirical study of the data available and used in continuation decisions under conditions of equivocal continuation feedback. These comparisons will go beyond a simple comparison between continuation feedback that is clearly positive and continuation feedback that is clearly negative. Classification according to this framework will provide a rich set of comparisons that will allow us to more clearly understand the information set that practitioners actually use in these decisions.

For example: the equivocal area within the continuation quadrant represents a good decision made with *equivocal* feedback, while the remaining area within the continuation quadrant represents a good decision made with *clearly positive* feedback. Finding otherwise similar projects that are classified on either side of this boundary and comparing the data available when the decision was made will allow us to understand better what constitutes equivocal feedback that is understood to be positive enough to result in a decision to continue the project.

Another example: the equivocal area within the cancellation quadrant represents a *good* decision made with equivocal feedback, while the equivocal area within the abandonment quadrant represents a *bad* decision made with equivocal feedback. A comparison of the decisions in these two classifications will aid in our understanding of seemingly small indications that may be considered equivocal by themselves, but support conflicting decisions.

One of the ways Bowen (1987) suggests to clarify equivocal feedback is to find more data. As this model will allow comparison of good and bad decisions under conditions of equivocal and non-equivocal feedback, it will result in additional data from the analysis of previous decisions. This leads to the following research proposition to be explored:

Research Proposition: Examination of data sets used in making project continuation decisions under conditions of equivocal feedback combined with the decision result (continued, abandoned, escalated, or cancelled) will reveal additional data not found in the principal information set of schedule conformance, budget conformance, and quality of the results.

While an analysis of all four quadrants is necessary to clarify decision information, the goal is to reduce "bad" decisions. Thus, the focus will be on abandonment and escalation decisions. We propose that identifying ways to reduce the size of the equivocal information band for a continue/stop decision will result in more effective decisions – that is, a reduction in the occurrence of escalated projects and projects that are abandoned prematurely.

CONCLUSION

The framework developed in this study should have practical application as we continue the search for more definitive and actionable information to support project continuation decisions. Comparisons of continue/stop decisions made under conditions of equivocal information that were retrospectively determined to be correct or incorrect should highlight the subtle cues that allow failing projects to be cancelled early, or escalating projects to be redirected.

Additional avenues of research are also available under this framework. The quality of the standards used in making project decision may also play a considerable part in what makes information appear equivocal. Additional research in this area may provide another means of shrinking the equivocal band and producing better decisions and outcomes.

REFERENCES

1. Atkinson, R. (1999) Project management: Cost, time and quality, two best guesses and a phenomenon, its time to accept other success criteria, International Journal of Project Management, 17, 6, 337-342.
2. Boehm, B. (2000) Project termination doesn't equal project failure, Computer, 33, 9, 94-96.
3. Bowen, M.G. (1987) The escalation phenomenon reconsidered: Decision dilemmas or decision errors?, The Academy of Management Review, 12, 1, 52-66.
4. Davenport, T.H., DeLong, D.W., and Beers, M.C. (1998) Successful knowledge management projects, Sloan Management Review, 39, 2, 43-57.
5. Ewusi-Mensah, K., and Przasnyski, Z.H. (1991) On information systems project abandonment: An exploratory study of organizational practices, MIS Quarterly, 15, 1, 67-86.
6. Feeny, D.F., and Willcock, L.P. (1998) Core is capabilities for exploiting information technology, Sloan Management Review, 39, 3, 9-21.
7. Holland, C.P., and Light, B. (1999) A critical success factors model for erp implementation, IEEE Softw., 16, 3, 30-36.
8. Keil, M., and Flatto, J. (1999) Information systems project escalation: A reinterpretation based on options theory, Accounting, Management and Information Technologies, 9, 2, 115-139.
9. Keil, M., Mann, J., and Rai, A. (2000) Why software projects escalate: An empirical analysis and test of four theoretical models, MIS Quarterly, 24, 4, 631-664.
10. Keil, M., Rai, A., Cheney Mann, J.E., and Zhang, G.P. (2003) Why software projects escalate: The importance of project management constructs, Engineering Management, IEEE Transactions on, 50, 3, 251-261.
11. Mahaney, R.C., and Lederer, A.L. (2003) Information systems project management: An agency theory interpretation, Journal of Systems & Software, 68, 1, 1.
12. Mähring, M., and Keil, M. (2008) Information technology project escalation: A process model, Decision Sciences, 39, 2, 239-272.
13. Oz, E., and Sosik, J.J. (2000) Why information systems projects are abandoned: A leadership and communication theory and exploratory study, Journal of Computer Information Systems, 41, 1, 66.
14. Pan, G.S.C., Pan, S.L., and Flynn, D. (2004) De-escalation of commitment to information systems projects: A process perspective, The Journal of Strategic Information Systems, 13, 3, 247-270.
15. Pinto, J.K., and Kharbanda, O.P. (1996) How to fail in project management (without really trying), Business Horizons, 39, 4, 45-53.
16. Sabherwal, R., Sein, M.K., and Marakas, G.M. (2003) Escalating commitment to information system projects: Findings from two simulated experiments, Information & Management, 40, 8, 781-798.
17. Verner, J.M., and Evanco, W.M. (2005) In-house software development: What project management practices lead to success?, IEEE Softw., 22, 1, 86-93.

18. Wateridge, J. (1995) It projects: A basis for success, International Journal of Project Management, 13, 3, 169-172.
19. Wateridge, J. (1998) How can is/it projects be measured for success?, International Journal of Project Management, 16, 1, 59-63.