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# INDIVIDUAL PLAYERS IN A TEAM SPORT: STAKEHOLDER CHANGE IN COMMITMENT IN ISD PROJECTS

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## Abstract

*Information System Development (ISD) projects fail at an alarming rate; many of these failures result from managerial rather than technical difficulties. One of the principal management issues that affect ISD success is stakeholder commitment to the ISD process. To date, the majority of the ISD literature has not examined changes in commitment over time and how these changes may affect the success of an ISD project. In this paper, we examine the rate of change of commitment over time and offer five propositions: 1) Each individual will experience a different rate of change in commitment across the project life cycle, 2) the change in commitment is influenced by key stakeholders involved in the project, 3) the amount of commitment felt by each stakeholder must be above a critical threshold through certain key stages of the project in order to ensure ISD success, 4) the rate of change may differ for different stages in the life cycle, and 5) any sudden change in a key stakeholder's commitment (positive or negative) at any stage has a negative effect on ISD success. These propositions are examined using a case study of an ISD project. The paper builds on the existing body of knowledge on ISD commitment and contributes to an understanding of how ISD efforts can be better monitored and controlled to optimize stakeholder commitment.*

**Keywords:** IS project management, stakeholder commitment, project life cycle

## Introduction

Many Information System projects fail due to non-technical problems that translate into financial losses for organizations that develop or use them. A recent study showed that almost three-quarters of all software development in the Internet era suffered from one or more of the following: total failure, cost overruns, time overruns, or a rollout with fewer features or functions than promised (CIO 2002). These problems are often times more behavioral than technological in nature. Additionally, it is often the case that the most people-oriented aspects of technology management are given the lowest priority (DeMarco & Lister 1999). Successful ISD efforts require effective management of stakeholders to elicit their contributions and cooperation, while, at the same time, maintaining progress toward the project's goals (Beath & Orlikowski 1994). One indicator of the effective management of stakeholders is stakeholder commitment, the subjective impression of a stakeholder about the degree to which he or she is personally interested in helping the project through to completion. Previous research has often used stakeholder commitment as a lagging (i.e., outcome-based) indicator, providing an alternative measure of the success of the project, and focusing primarily on managerial commitment, rather than the range of stakeholders involved in a project (Sabherwal, 2002; Newman & Sabherwal, 1986; Keil, 1995; Fairley, 1994; Markus & Tanis, 2000). In contrast, we argue that stakeholder commitment can be used as a leading indicator, helping to predict whether or not a project would be successful. Using stakeholder commitment as a leading indicator, however, requires that we have a better understanding of how commitment evolves in a range of stakeholders over the course of a project over time. For this reason, we offer five propositions about the evolution of stakeholder commitment throughout the project life cycle. We then submit these propositions to exploratory examination of an ISD effort at a large public transportation agency.

## Definition of Commitment in the IS Context

Following Staw (1976), commitment is defined in this study as “a state of mind that holds people and organizations in a line of behavior”. This definition contrasts with others’ (such as Ginzberg, 1981) by not focusing on actions, but rather the psychological state of the individual. We prefer to focus on the psychological state since it doesn’t confound behavioral intentions with behavioral actions.

In this study, we are interested not simply in each individual stakeholder’s commitment, but rather in the pattern of commitment among the stakeholders and how this pattern evolves over time. For this reason, we propose two aspects of these patterns of commitment that are important to examine. These are: *diversity* and *dynamism*. Previous IS work has emphasized the importance of management commitment (Newman & Sabherwal 1996, Enns 2003). But management commitment is only one ingredient of ISD success. Successful ISD efforts rest on the involvement of a variety of stakeholders including direct users, developers, vendors, tangential users and beneficiaries. Therefore, we argue that managerial commitment alone is insufficient; rather commitment among the diverse set of participants must be measured. Examining commitment among *diverse* participants, however, suggests that participants may not experience the same level of commitment at the same time (Gersick 1988). This raises several interesting questions: *Must all stakeholders experience a high degree of commitment throughout the project?* Or is there a compensatory effect whereby the high commitment experienced by some stakeholders at a particular point in time compensates for the low commitment of other stakeholders? Therefore, the diversity in the pattern of commitment among the stakeholders may be more informative and predictive of success than is identifying any single individual’s level of commitment.

A second aspect of the pattern of commitment is the *dynamism*. Previous studies have shown that the factors which affect the level of commitment in ISD are either project, psychological, social, or structural (Keil 1995, Newman & Sabherwal 1996). These studies cite several real-life examples of how the four types of commitment factors play a crucial role in the escalation and determination of ISD commitment. The issue that is not addressed by these studies or studies on IS team performance (Curtis, Krasner & Iscoe 1988; Guinan, Coopriider & Faraj 1998) is how individual stakeholder commitment changes over time. This is explainable since these authors adopted variance strategies while focusing on the factors that determine commitment (Sabherwal & Robey, 1995). In contrast, this study adopts a process strategy and focuses on the rate of change of commitment over time and on the impact of the rate of change in commitment on the success of the ISD project. Hence, the research question of interest here is: *How does the change in the pattern of commitment among the stakeholders at various stages of the life cycle affect the ISD process?*

## Propositions

In order to address these questions, we offer five propositions:

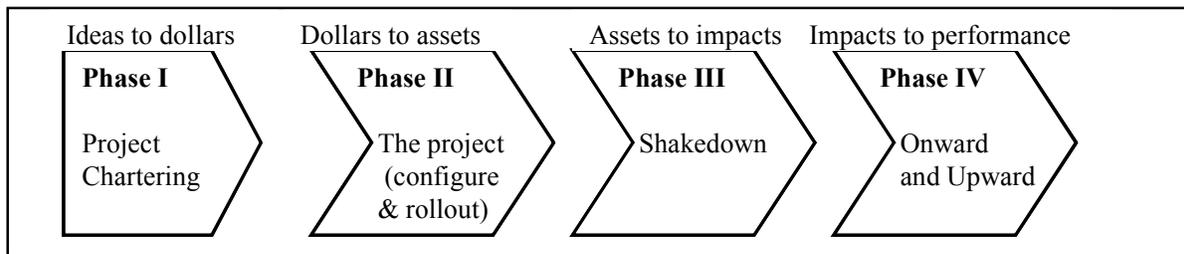
**Proposition #1. Individual Differences in Commitment Over Time.** Research has shown that users, as well as IS managers often implement a portfolio of “control modes” that includes traditional supervisor-subordinate formal controls as well as such informal control modes as interpersonal & self-regulating dynamics (Kirsch, 1997). The use of these control models is highly individualistic. This suggests, then, our first proposition:

**Proposition #1:** Each individual will experience a different rate of change in commitment across the project life cycle.

**Proposition #2: Commitment is a Clan Phenomena.** Kirsch (1997) found, in her research, that one pattern of informal control models seen among stakeholders is what she called “clan control”. A clan is defined as a group of individuals who are dependent on one another and who share a set of common goals. Clan control is implemented by propagating common values, beliefs, and philosophy within a clan. The clan propagates these norms and values resulting in a group of individuals who share a common ideology, who have internalized a set of values, and are committed to the clan (Kirsch 1997). The leaders of the clan are not always managers and the rewards or punishments in this type of informal system typically operate independently of other formal modes that may be in place. In the typical ISD environment there are a few individual stakeholders that, for some reason or another, play a major role in defining and reinforcing acceptable behaviors. Hence, our second proposition:

**Proposition #2:** The level of commitment in the ISD process is defined by a few individual stakeholders and then transmitted to the rest of the group.

**Proposition #3: Minimum Commitment Required Over Time.** Following the process model strategy of studying commitment, it is necessary to specify the time dimension of the actions being studied. Authors have conceptualized the IS implementation life cycle using different language (Cooper & Zmud 1990, Boehm 1996, George 2000). While these life cycle models are useful, they fail to capture the unique behavioral characteristics of ISD projects. In this paper, the Enterprise System Experience Cycle proposed by Markus & Tanis (2000) is used. This model is perhaps the most accurate representation of the behavioral aspect of ISD projects through the chartering, project, shakedown, and onward & upward stages shown in Figure 1. The model also emphasizes that there are both technical and business reasons for companies, large and small, to adopt IS and Enterprise Systems.



**Figure 1. Markus and Tanis (2000) Enterprise System Experience Cycle**

Markus & Tanis (2000) argue that to proceed through the stages requires actions and psychological investment at each of the previous stages. We argue that this applies to the level of the individual stakeholder. That is, we argue that each stakeholder in the project needs to have a minimal level of commitment during each of these four stages of the project. However, what that level needs to be set at is not entirely clear. Therefore, at this point in our research we can only suggest that the level is non-zero. Hence, our proposition

**Proposition #3:** The amount of commitment felt by each stakeholder must be above zero through the four stages of the project in order to ensure ISD success.

**Proposition #4: Commitment Rate of Change is Individualistic.** Given that many different events can change as the project goes into the Project and Shakedown phases, the level of commitment can oscillate above or below the minimum commitment threshold. This variation explains the *dynamic* dimension of this construct and leads to the fourth proposition:

**Proposition #4:** The individual rate of change of individual commitment may differ for different stages in the life cycle.

**Proposition #5: Effect of Sudden Commitment Change.** Each individual phase is unique in the factors that affect its success. Studies have shown the importance of escalating commitment (Staw 1976) when things get rough and pulling the plug on bad projects (Keil 1995) when they show signs of wrong direction or failure. Most of the studies to date have focused on the aspect of increasing the level of management commitment in the presence of negative results. There is currently insufficient research on the phenomenon of decreasing commitment and the implications of sudden change in commitment. These are important aspects of project control because of the effect on future life cycle phases. Hence, the fifth proposition:

**Proposition #5:** Any sudden change in a key stakeholder's commitment (positive or negative) at any stage has a negative effect on ISD success.

## Design of the Research Study

Since this study focuses on the *diversity* and *dynamic* aspects of individual stakeholder commitment it is important to select an environment that would encompass a diverse set of stakeholders in a dynamic project environment. Such an environment is an ISD project being done by the Metropolitan Transit Authority (MTA) in Los Angeles, CA. The project is called the Advanced

Transportation Management System (ATMS) and is one of the largest ISD efforts in the public transportation industry. It also involves a diverse group of stakeholders that include the client, the vendor, multiple subcontractors, and a number of internal and external customers.

The ATMS project officially started in 2002 and will continue until 2005. It can be treated as three small projects since it has been broken down into three main phases. For the purposes of this paper, we will report results of only one phase of the project that was completed over a six month period. Data will be collected using four different sources: survey instrument, interviews of stakeholders, informal observations of meetings, and review of project documentation. This approach will allow for the verification of objective data with subjective data and vice versa. The reconciliation of information from the different sources will strengthen the validity of the conclusions (Keil 1991).

The survey method will be administered multiple times at different stages of the life cycle so as to follow a longitudinal study. The types of questions asked will cover issues specific to the life cycle being addressed at that moment. The questions asked will address both the *diverse* and *dynamic* aspects of commitment with the goal of quantifying the levels of commitment of individual stakeholders in a way that they can be plotted on a predetermined scale.

## Conclusion

This study reflects the importance of the pattern of individual stakeholders' commitment from a process model point of view to highlight the impact of the pattern, not just individual attitudes on the ISD process. In so doing, this paper introduces a new concept - the rate of change in commitment - and explores the impact of rate of change in commitment over time. This research also identifies the concept of sudden change in commitment at any stage of the life cycle having a negative effect on ISD success. While earlier studies have explained the factors for change in commitment using a variance model, this study presents the impact of change in commitment from a process model point of view. In doing so, it introduces the time dimension to the existing knowledge on the commitment phenomenon and aims to contribute to the IS body of knowledge by providing a new and practical perspective on the issue of IT Project Management.

## References

- Beath, C., Orlikowski, W., The Contradictory Structure of Systems Development Methodologies: Deconstructing the IS-User Relationships in Information Engineering, *Information Systems Research*, Vol. 5, No. 4, 1994.
- Boehm, B., Anchoring the Software Process, *IEEE Software*, July 1996, pp. 73-82.
- Cooper, R., Zmud, R., Information Technology Implementation Research: A Technological Diffusion Approach, *Management Science*, Vol. 36, No. 2, February 1990.
- Curtis, B., Krasner, H., Iscoe, N., A Field Study of the Software Design Process for Large Systems, *Communications of the ACM*, Vol. 31, No. 11, Nov. 1988, pp. 1268-1287.
- DeMarco, T., Lister, T., *Peopleware: Productive Projects and Teams*, 2<sup>nd</sup> Ed., Dorset House, 1999.
- Enns, H., CIO lateral influence behaviors: Gaining peers' commitment to strategic information systems, *MIS Quarterly*, (27:1), Mar 2003.
- Fairley, R., Risk Management for Software Projects, in *Software Project Management: Readings and Cases*, McGraw Hill, 1997.
- George, J., The Origin of Software: Acquiring Systems at the End of the Century, in *Framing the Domains of IT Management: Projecting the Future Through the Past*, Pinnaflex, 2000.
- Gersick, C., Time and Transition in Work Teams: Toward a New Model of Group Development, *Academy of Management Journal*, 31(1), pp. 9-41, 1988.
- Ginzberg, M., Key Recurrent issues in the MIS implementation process, *MIS Quarterly*, (5:2), 1981.
- Guinan, P., Coopridge, J., and Faraj, S., Enabling Software Development Team Performance During Requirements Definition: A Behavioral Versus Technical Approach, *Information Systems Research*, 9, 2 (June 1998), 101-125.
- Keil, M., Pulling the plug: Software project management and the problem of escalation, *MIS Quarterly*, (19:4), 1995, pp. 421-448.
- Keil, M., Managing MIS Implementation: Identifying and Removing Barriers to Use, Doctoral Dissertation, Harvard University, 1991.
- Kirsch, L., Portfolios of Control Modes and IS Project Management, *Information Systems Research*, Vol. 8, No. 3, Sept 1997.
- Markus, L., Tanis, C., The Enterprise System Experience – From Adoption to Success, in *Framing the Domains of IT Management: Projecting the Future Through the Past*, Pinnaflex, 2000.

- Newman, M. & Sabherwal, R., Determinants of commitment to information systems development: A longitudinal investigation, *MIS Quarterly*, March 1996, p 23- 55
- Sabherwal, R., Robey, D., Reconciling Variance and Process Strategies for Studying Information System Development, *Information Systems Research*, 6:4, 1995.
- Sabherwal, R., Overcoming the Problems of ISD by Building and Sustaining Commitment, *Accounting, Management, and Information Technologies* (5:3/4), 1995, pp. 283-309.
- Staw, B., Knee-Deep in the Big Muddy: A Study of Escalating Commitment to a Chosen Course of Action, *Organizational Behavior and Human Performance* (16), 1976, pp. 27-44.
- The Secret to Software Success <http://www.cio.com/archive/070101/secret.html>.