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Sponsorship and IS Project Delivery Capability

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Abstract

Management support in the form of project sponsorship has been recognized as critical to the success of information systems development and implementation efforts. However, there is little empirical evidence on the effect of project sponsorship. Drawing on extant literature, this study proposes that effective use of project sponsors is contingent upon the strategic importance and the level of uncertainty of project tasks. At a business unit level, project sponsors can improve an organization's capability to deliver IS projects. The relationship is tested on a sample of Australian IT services companies. The findings show that project sponsorship improves the quality of IS projects. The findings further suggest that IT services companies can improve their project delivery capability by initially relying on project sponsor's involvement and, subsequently, by managing down strategic uncertainty.

Keywords: sponsor, IS, project delivery capability

1. Introduction

Despite sustained investments in corporate information technology (IT) (Weill et al. 2002), the evidence on the value or benefits realized from such investment is equivocal (Strassmann 1985; Kohli and Devaraj 2003) and IT projects continue to under-perform (Johnson 1995; Johnson et al 2001; Hayes 2004). One factor that has been consistently ranked high among factors leading to project failure is lack of executive support (Johnson 1995; Johnson et al 2001; Hayes 2004; Schmidt et al. 2001).

In the context of managing IT projects, management support in the form of project sponsorship has consistently been cited as critical to achieving project objectives (Graham and Englund 2004; Ross and Weill 2002; Schmidt et al 2001; Love and Brant-Love 2000). Yet, there is little empirical evidence on the effect of project sponsorship on project outcomes. This study investigates the effect of project sponsorship on an organization's capability to deliver IS projects.

This investigation makes the assumption that senior management's time and attention is limited and that it is, therefore, impossible for them to participate in all aspects of operation (March and Simon 1958). Drawing on management control theory (Simons 1987; 1990; 1991), the paper argues that the primary concern for an IT services organizations is to satisfy clients' needs and that the use of project sponsors should be associated with an organization's capability to protect project quality. The propositions are tested in a data set from a survey of senior managers in Australian IT services companies. The findings suggest that IT services companies could improve their project delivery capabilities by focusing project sponsors' attention on protecting project quality.

In the following sections, the literature is reviewed and two hypotheses are developed. The research design and analysis are then described, Results are presented and their implications discussed. The findings have important implications for both research and practice development.

2. The contingent effects of project sponsorship

A project is a complex endeavour to deliver a set of business objectives within constraints in a unique organizational setting. Reviewing the extant literature, there appear to be four imperatives for project sponsors. First, a project's success in delivering the business objectives often depends on the commitment and involvement of stakeholders beyond the control of the project manager. Support from senior management to secure commitments from stakeholders is often seen as necessary to realize desired benefits (Graham and Englund 2004).

Second, project managers are not positioned at top levels in the management hierarchy and, therefore, they are unlikely to be conversant with the latest strategic intentions of the organization. So, guidance and oversight from senior management on the conduct of the project is needed to ensure the project is on track to realize strategic benefits (Ross and Weill 2002). Third, projects compete with other priorities for resources and commitments. Typically, a project manager does not have a stable power base and works outside the normal line reporting structure. Most resources for projects are negotiated and bargained (Pinto 2000). Therefore, it is important to have a senior manager to "provide air cover for the troops" (Graham and Englund 2004; Sauer et al 2001). Finally, as a temporary endeavour, a project may be treated as secondary to the more permanent and continuous operation. Strong and visible commitment from senior management is vital to motivate the project team (Grover 1993; Jarvenpaa and Ives 1991).

According to Simons (1994; 1995), there are four types of control systems that organizations can employ to manage their operations. They are diagnostic control systems, belief systems, boundary systems, and interactive control systems. This study focuses on the choice and implications of adopting interactive control systems, defined here as "formal systems used by top managers to regularly and personally involve themselves in the decision activities of subordinates (Simons 1987; 1991). With senior management involvement, the standard assumptions for making project decisions can be challenged in the project team's search for innovative solutions (Simons 1994; 1995).

Typically, an interactive control system is invoked in situations of high strategic uncertainty, where strategic uncertainty refers to uncertainties that are fundamental to achieving business goals and could provide threats or opportunities as circumstances change (Daft and Macintosh 1981; Simons 1990; 1991; 1994; 1995). Implicit in the definition is that uncertainty and importance combine to create "strategic uncertainty". It follows that effective managers focus their attention on issues that are both uncertain and important to business outcomes.

High uncertainty alone does not attract the attention of senior managers unless the events or factors causing the uncertainty are also seen as important to achieving organizational goals (Daft and Macintosh 1981; Simons 1990; 1991; 1994; 1995). Similarly, importance alone may not be sufficient to attract their attention. For example, Simons (1991) reports that top managers of low-cost, high-volume US healthcare product businesses do not pay much attention to efficiency-related controls such as cost accounting systems. Instead, they focus

their attention on the systems that produce and monitor information on the strategic uncertainties that threaten their vision of the future. In contrast, goal-setting and exception-based reporting is used to manage efficiency-related systems.

Organizations today are faced with strong competition and demanding clients. Frequently, at the beginning of a project, the clients of IT project organizations have conflicting and incomplete objectives embedded in their system requirements. Business analysts work with the clients to clarify the business needs. These are then translated into systems requirements and specifications by the IS project team and systems architects.

Based on those requirements and specifications, the project team builds systems and is responsible for delivering the project to the client, on-time, to-budget, and of-quality and of-functionality. This task is made particularly difficult by changes in business and functional requirements. Requirement changes or scope creep have consistently been identified as a major cause of project failures (Boehm 1991; Johnson 1995; McConnell 1996; Schmidt et al. 2001).

Similarly, other studies show that the quality of the requirements-analysis phase impacts on later phases (Zmud 1980; McConnell 1996). Errors not identified in the early stages of a software project are expensive to fix later (Boehm 1991; McConnell 1996). A large number of methods have been developed to improve requirements analysis, such as user involvement and participation, prototyping and incremental delivery. Generally, these methodologies have not met users' objectives (McConnell 1996; Iivari et al. 2000). New methods are being proposed and tried (Iivari et al. 2000).

Managing software requirements to deliver quality to the client is both important and uncertain, and, therefore, warrants close attention from senior management (Simons 1990; 1991; 1994; 1995). The intent underpinning senior management involvement is to protect the system's quality requirement. The impact on time and cost performance is secondary, remaining the primary responsibility of the project manager (Yetton et al. 2000).

Appointing a project sponsor is a mechanism to exercise interactive control over projects (Briner et al 1990; Frame 1994). Project sponsors are not responsible for the execution of projects. Rather, their critical responsibility is to ensure the overall success of projects (Briner et al 1990; Graham and Englund 2004; Ross and Weill 2002). It follows that project sponsors should take interactive control of issues of strategic importance, such as the quality of IS projects, while the project manager retains responsibility for the day-to-day management of the project.

There are two approaches to gauge project outcomes. One focuses on project level performance. The other is seen to be an organization's capability to deliver projects according to the client's expectations in regards to time, cost, and quality, defined here as an organization's project delivery capability (PDC). Since the concern here is with organizational level capabilities, the focus is on the latter.

The recent process movement, including, for example, the Capability Maturity Model (CMM) approach to managing software projects, reflects the shifting of attention to PDC from the previous dominant research focus on project performance. PDC differs from the term project performance in that PDC considers an organization's consistency when delivering various projects over an extended period of time. In contrast, project performance

typically refers to the one-off performance in delivering a project (Liu et al 2003; Liu and Yetton 2004). Formally:

Hypothesis 1: Project sponsorship has a positive effect on PDC-quality.

The primary concern of a project sponsor is protecting project quality. The sponsor's attention to and influence on time and cost performance is secondary. Managing time and cost falls within the responsibilities of the project manager. Formally:

Hypothesis 2: Project sponsorship has a non-significant effect on PDC-time and cost.

3. Research design

The hypotheses are tested using survey data collected from senior managers in the Australian IT services industry. A single survey instrument was designed to measure PDC and was mailed to senior managers with project management responsibilities.

3.1. Unit of analysis

Information processing capabilities are likely to vary across business units within the same group. In contrast, within the business unit across projects, the difference in information processing systems is likely to be small. Therefore, the appropriate unit of analysis is business unit. Senior executives of the organizations contacted were asked to both identify the different business units and to nominate a senior manager in each as the point of contact.

3.2. Sample selection and data collection

A mailing list of IT services companies was provided by an information service provider. Two hundred and twenty four IT services companies were identified as both belonging to the industry classification SIC 7371-7379 and having a turnover of A\$10 million or more. These criteria defined companies large enough to have multiple project managers.

A fax was sent to the CEO or Managing Director of each company on the list asking them to assist the research by providing the names and addresses of senior managers, responsible for business units that conducted multiple projects, to participate in the survey. Twenty IT services companies provided the names and contacts of 52 senior managers. Questionnaires were sent directly to those managers. Follow up phone calls were made to encourage them to complete the questionnaires.

Response rates can be calculated against two bases: the number of companies invited to participate or the number of managers nominated to participate. Using the former base, the initial response rate to the fax was $20/224 = 8.9\%$. The low response rate to the fax, while similar to other studies (Ewusi-Mensah and Przasnyski 1991; Nidumolu 1996; Yetton et al. 2000), signals a potential non-response bias validity threat to the findings (Schwab 1999).

To evaluate that validity threat, the representativeness of the sample from the population of IT service organisations was examined. To do this, the populations defined by SIC codes in the first paragraph of this section were identified using Dun & Bradstreet's "Business Who's Who of Australia" database, and the distributions of the variable – number of employees – in the population and sample were compared using Chi-Square test. The analysis showed that there is no evidence of a non-response bias for the sample (Not included due to space limit. Will be provided upon request to the authors).

In total, 39 responses were received from the 52 senior managers, a response rate to the questionnaire of 75.0%. Multiple responses from the same business unit were aggregated by using the mean of the responses, resulting in an effective final sample size of 36.

3.3. Instrument design and validation

Dependent variables

PDC is an organization’s capability to satisfy expectations on cost, time and quality as measured by each respondent’s perceptions of overall performance, relative performance with competitors, and the satisfaction of the clients (See Appendix 1 for instruments). Table 1 reports acceptable reliability indices for PDC on time, cost and quality.

Table 1: Cronbach Alphas for the dependent variables

PDC-quality	0.90
PDC-cost	0.72
PDC-time	0.71

Independent variables

Project sponsorship is measured in two ways. One is the percentage of IT projects that have been assigned a project sponsor (Sponsor %). The other is by aggregating across four questions covering the various roles of the sponsor (Project Sponsorship), including having formal decision making power and command over resources, overseeing project for corporate control, taking care of stakeholders’ interests, and being assessed on project outcomes (See Appendix 1). The Cronbach Alpha for Project Sponsorship is 0.80.

Out of the 36 responses, fourteen (38.9%) assign project sponsors to all their IT projects while three (8.3%) do not assign project sponsors to any IT projects. On average, business units assign project sponsors to 75% of their IT projects.

3.4. Analysis

Hypotheses 1 and 2 are tested by regressing PDC on the independent variables. Formally:

$$PDC = \beta_0 + \beta_1 * X + e \quad \text{Equation 1}$$

Where X denotes the independent variables – project sponsorship and sponsor %, respectively.

With the independent variables measured on different scales, those variables were standardized before estimating Equation 1 and testing Hypotheses 1 and 2. A significant β_1 indicates that the corresponding independent variable has a main effect on PDC.

4. Results

The results of regressing PDC on the independent variables using Equation 1 are presented in Table 2. Hypothesis 1 is supported – Project Sponsorship has a positive effect on PDC-quality. Table 2 reports that the standardized regression coefficients for project sponsor on PDC-quality are: $\hat{\beta}_{\text{quality}}^{\text{Project sponsorship}} = 0.35$ ($p \leq 0.05$) and $\hat{\beta}_{\text{quality}}^{\text{Sponsor}} = 0.39$ ($p \leq 0.05$).

Hypothesis 2 is also supported - Project sponsorship has no effect on PDC-time or on PDC-cost. The standardized regression coefficients for project sponsor on PDC-time and PDC-cost are: $\hat{\beta}_{\text{time}}^{\text{Project sponsorship}} = 0.05$ (n.s.) and $\hat{\beta}_{\text{time}}^{\text{Sponsor}} = 0.10$ (n.s.), and $\hat{\beta}_{\text{cost}}^{\text{Project sponsorship}} = 0.06$ (n.s.) and $\hat{\beta}_{\text{cost}}^{\text{Sponsor}} = 0.06$ (n.s.), respectively.

Table 2: The effects of project sponsorship on PDC

	Project Sponsorship		Sponsor %	
	β^*	P	β	P
PDC-quality	0.35	0.05	0.39	0.02
PDC-time	0.05	n.s.	0.10	n.s.
PDC-cost	0.06	n.s.	0.06	n.s.

*Note: β denotes standardized regression coefficient.

5. Discussion

In this section, the results are summarized, validity threats to the findings are reviewed, and the implications for theory and practice are discussed.

5.1. Findings

Consistent with the predictions derived from management control theory (Daft and Macintosh 1981; Simons 1987; 1990; 1991; 1994; 1995), Table 2 reports that project sponsorship has a significant positive impact on an organization's capability to deliver projects to clients' needs (PDC-quality). Further, as hypothesised, there is no significant effect of project sponsorship on PDC-cost and PDC-time.

5.2. Implications for theory

There are two streams of research to which this study contributes. One is the emerging analysis of contingent effects on project performance. The other stream focuses on improvements in project performance based on process improvements. The specific finding of the positive effect of project sponsorship on PDC-quality but not on PDC-cost and PDC-time, provides further evidence for the contingent nature of management support. Specifically, the results question the view that top management support is required across all dimensions of IS project performance.

Recall, Sabherwal and King (1992) found that top management participates only in the IS projects they perceive as important. Here, the results show that top management focuses only on the strategic dimensions of those important projects that it can influence. So, the focus here is on PDC-quality and its effect on the service delivered to the client.

This study refines Yetton et al.'s (2000) and Sabherwal and King's (2001) findings, concluding that project sponsors have a direct effect on the PDC-quality of IS projects but not on PDC-time and PDC-cost. When system quality is the key project performance criterion, high-risk projects are associated with high levels of user participation (Barki et al. 2001; Yetton et al. 2000). In those situations, the involvement of a project sponsor supports client (user) participation. The sponsor engages senior managers from the client organisation as actively involved users (Yetton et al. 2000). The sponsor is better positioned than the project manager to engage and negotiate with the client over variations to the project deliverables.

The second stream of research in the literature concerns the way a project sponsor may influence the quality of IS projects by supporting process improvement initiatives (Ravichandran and Rai 2000; Stylianou and Kumar 2000). Ravichandran and Rai (2000) found that top management leadership strongly affects the quality of IS projects by developing the management infrastructure for process improvement, including policies covering quality, rewards and skill development.

Finally, Stylianou and Kumar (2000) argue that one of the most important issues in managing IS quality is balancing stakeholders' interests, which is a critical senior management responsibility. The role of senior management is an enabling one through leadership and establishing management infrastructure, enabling the effective implementation of quality initiatives by the organization.

5.3. Implications for practice

Within the first research stream described above, the findings reported in Table 2 suggest that, when a project faces a high level of uncertainty in project outcomes with significant business implications for both the organization and its clients, assigning a senior manager as sponsor to the project improves the chances of delivering the project as required. The project sponsor focuses attention on protecting the quality of strategic tasks while leaving issues of cost and time management as the responsibilities of the project manager. The project sponsor's primary concern is to deliver the quality that meets the client's business needs. Project sponsors do that by exerting leadership, allocating the necessary resources to deliver quality and providing 'political' protection for the project management team.

Within the second stream, there is an opportunity to reduce the level of strategic uncertainty. In that case, senior management can be relieved of the need for direct intervention to protect PDC-quality. Instead, they would be able to focus their attention on other strategic opportunities to add value. The current developments in methodologies and process improvement are essentially efforts to reduce task uncertainty and improve PDC, which will eventually lead to the reduction of strategic uncertainty.

One promising approach lies in improving project quality by introducing best practice, and benchmarking with other project teams and organizations. In the long term, the focus should be on reducing task uncertainties to capture improved business benefits. The coordination of resources, roles and responsibilities can improve task programmability and, therefore, reduce organizational uncertainty. Similarly, methodologies and tools for the conduct of project tasks can contribute to reducing strategic uncertainty by reducing technical uncertainty.

5.3. Validity threats

Here, we consider potential construct, internal and external validity threats. Construct validity is high when scores obtained on a measure reflect the theoretical definition of the construct it is designed to represent (Schwab 1999). The constructs used in this study are grounded in project management literature but have not been used in previous surveys. Future research is needed to establish their construct validity.

Internal consistency, the most frequently used measure of construct validity, is defined as the degree to which the items of a construct measure the same phenomenon; it is usually assessed using Cronbach Alpha. As reported in the Research Methods section, the Cronbach Alphas for the constructs satisfy the conventional cut-off point of 0.7.

External validity is concerned with the generalizability of the findings. There are two distinct populations to which these findings could be generalized. One is the population of IS project organizations. The other is project organizations in general. The former is the principal focus of this research. The absence of any support for a response bias threat suggests that the findings do generalize to IS project organizations. Further studies to validate the findings

across a range of different contexts are needed before the findings can be generalized to other industries.

6. Summary

This paper shows that, in the IT services industry, project sponsorship protects the strategic project outcome of typical IS projects, influencing PDC-quality but not PDC-cost or PDC-time. This contributes to the emerging literature on the contingent nature of project performance. The implications for both theory and practice are to reinforce the need to further refine and to extend the models of the contextual contingencies influencing project business deliverables in the IS services industry. The findings provide insight on how to focus senior management attention and actions to protect the strategic outcome of IS projects.

To generalize the findings to other industries, further studies are needed to identify strategic project outcomes that need the protection of executive sponsors and to test the effect of project sponsorship on project outcomes in different contexts.

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APPENDIX 1: SURVEY INSTRUMENTS

<i>Constructs</i>	<i>Instruments</i>	<i>Respondent</i>
PDC—Time	How satisfied are you with the following in relation to projects undertaken by your business unit? (Time performance against schedule)	Senior managers
	Please rate your business unit's performance in managing projects compared to your competitors or counterparts in your industry in relation to the following? (Time performance against schedule)	
	How satisfied are the clients of your business unit's projects with the following in relation to the projects? (Time performance against schedule)	
PDC—Cost	How satisfied are you with the following in relation to projects undertaken by your business unit? (Cost performance against project budget)	
	Please rate your business unit's performance in managing projects compared to your competitors or counterparts in your industry in relation to the following (Cost performance against project budget).	
PDC—Quality	How satisfied are you with the following in relation to projects undertaken by your business unit? (Quality)	
	How satisfied are the clients of your business unit's projects with the following in relation to the projects? (Quality)	
	How satisfied are you with the following in relation to projects undertaken by your business unit? (The performance in achieving clients' specifications)	
	How satisfied are the clients of your business unit's projects with the following in relation to the projects? (The performance in achieving clients' specifications)	
Project sponsorship	To what extent, do you agree with the statement that sponsors typically have formal decision-making power and command of resources over projects?	
	To what extent, do you agree with the statement that sponsors typically oversee projects for corporate control purposes?	
	To what extent, do you agree with the statement that sponsors typically take care of stakeholders' interests?	
	To what extent, do you agree with the statement that sponsors are typically assessed on project outcomes?	
Sponsors %	What proportion of the total number of IT projects undertaken by your business unit in the last three years had project sponsors? (%)	

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