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PROJECT LEVEL DECISION RIGHTS: A CONTINGENCY PERSPECTIVE

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ABSTRACT

The study of IT development governance rests on the assumption of goal difference between the procurer (customer or user) and the provider (development organization). But governance research also finds that the knowledge of both parties must be incorporated in order to maximize decision effectiveness. The goal difference is resolved through governance forms that assign different decisions to the procurer and the provider. But this splitting of decision rights can impact how knowledge is shared. At the same time, unified teams are also capable of completing effective development projects as witnessed by the successes of agile development methodologies. These teams do not split decision rights and knowledge is more readily shared. Successful projects under one governance model may be identifiable different from successful projects under the other. This study extends governance research by understanding development project characteristics that indicate whether splitting decision rights is an effective strategy for a specific project.

INTRODUCTION

In the area of information systems development (ISD) projects, agency theory is used to support the idea that the goals of the developing organization differ from those of the procuring organization (Yannis and Kemerer 1992). The development organization is, after all, “hired” by the procuring organization to perform a function about which the procuring organization knows little. Given the assumption of goal difference, governance is a reasonable approach. The procuring organization is assigned decision rights over the decisions about the development project and producing organization is given rights over the decisions within the project (Mähring 2002) so the decision rights are split among the two primary stakeholders in the project. Either kind of decision cannot be made without consideration of the other kinds of decisions inherent in project completion, so a mechanism for knowledge sharing must be created (Tiwana 2009).

But absent the assumption that goals differ widely, at the development project level governance forms that split decision rights can limit cross-functional learning (Tang, Hornyak et al. 2006) between parties that should be a unified, cross-learning group. For example, consider the success of agile ISD practices (Cohen, Lindvall et al. 2004), in which there is a unified organization including development staff and members of the procuring organization (Paetsch, Eberlein et al. 2003) who learn from each other and are collectively responsible for fulfilling a single goal in a creative manner for the larger organization. In a single agile organization, there are not two groups to exercise separate decision rights, so decision rights are not split. But these kinds of development teams can effectively deliver developed products.

Since decision rights are not split in agile methodologies, the success of agile methodologies cannot be explained by the IT development governance theory of split decision rights. This indicates that either governance theory should be extended or that agile projects are a fundamentally different organizational form that follows different rules. This study proposes that development project governance be extended by contingency theory. This extension will be created by addressing the following research question: what are the characteristics of a development project which influence the relationship between separation of decision right in a project and ISD project effectiveness?

LITERATURE REVIEW

IT Governance and decision rights

The pervasiveness of IT in modern businesses requires a focus on IT governance in order to: mitigate risk of IT system failure and its impact on the business; and to manage the business value return for the large capital investment that IT entails (Van Grembergen 2004). Governance arrangements control the assignment of decision
rights (Weill 2004) in order to meet these goals of the business for IT. In information systems development governance, the assignment of decision rights has been shown to be most effective when the business side of the development partnership has rights to make decisions about the development project and the IT side of the development partnership has rights to make decisions within the development project (Tiwana 2009).

**ISD Project effectiveness**

The present study is concerned with development project effectiveness at the individual project level. The concept of ISD effectiveness is a function of client needs are satisfied by the result of the project (Tiwana 2009). Decision rights assignment is enacted at the individual project level; and proper assignment of decision rights along with cross-functional knowledge between the customers of the development project and the project developers has been shown to correlate with increased information systems project effectiveness.

**Contingency research on the selection of a governance model**

A number of IT project governance research projects have studied selection of the most effective governance model. These studies have looked at governance at various levels in the organization and typically assume that decision rights should be split, but even those who look at governance at the project level have yet to empirically support the assumption that splitting decision rights improves development project effectiveness at the individual project level (Johnstone, Huff et al. 2006).

At the organizational level, various models of governance have been studied from a contingency perspective. One study finds nine patterns of centralized and decentralized governance and concludes that a contingency approach can match the governance pattern to organizational factors such as firm size and the corporate governance model (Sambamurthy and Zmud 1999). Another study finds that the selection of governance arrangements influence IT department performance (Peterson, O’Callaghan et al. 2000) There does not appear to be a single best governance model. The concept of fit supports a research stream into which governance form is best based on multiple sets of criteria. (Brown and Grant 2005)

The knowledge that the organizational parties possess about each others’ functional specialty (i.e. developing organization’s knowledge of the business and users’ knowledge of IT) has been shown to be a predictor of the effectiveness of different governance models (Henry, Kirsch et al. 2003; Tiwana 2009).

**Governance and outsourcing**

Governance considerations are used in the outsourcing literature to guide outsourcing decisions (Tiwana and Bush 2007) (Poppo and Zenger 1998). In this sense, outsourcing can be considered a governance pattern.

**Agency**

The agency relationship is an outgrowth of the hiring, outsourcing, or delegation of an organizational task. The individual that performs a task in such a relationship is the agent; the delegator is the principle. Agency theory is concerned with issues of control over the outcome of the task and the behavior of the agent (Eisenhardt 1989). Also, agency theory is the source of two of the antecedents of the decision to outsource (Tiwana and Bush 2007).

**OUTLINE OF THE STUDY**

**Hypotheses**

This study hypothesizes that project characteristics moderate the empirically demonstrated positive relationship between splitting decision rights and ISD effectiveness, so each characteristic is viewed as acting to increase or decrease the strength of the relationship. The general expectation is that the project characteristics that support the decision to outsource (Tiwana and Bush 2007) will positively moderate the relationship between splitting decision rights and ISD effectiveness, however, each is analyzed independently. The independent variable for each hypothesis is the degree to which decision rights are split for a project and the dependent variable in each hypothesis is the perceived level of effectiveness of the development project (Tiwana 2009). The moderator in each hypothesis is adopted from Tiwana’s (2007) antecedents to outsourcing decisions. These antecedents (independent variables) represent project characteristics that project managers view ex ante as indicators of increasing the probability of a successful project outsourcing effort (i.e. within acceptable ranges on budget, schedule, and project goals) (Tiwana and Bush 2007). One of the antecedents in the Tiwana study is relative cost advantage, defined as the effect of economies of scale of the vendor on the difference in cost for insourced vs. outsourced projects (Tiwana and Bush 2007). Since this study does not compare insourcing to outsourcing, this study will not make use of the relative cost advantage construct as a moderator of the relationship between split decision rights and ISD project effectiveness.
The model for the study is in Figure 1; specific hypotheses follow.

**Hypothesis 1** - Threat of opportunism has a negative impact on the relationship between split decision rights and ISD project effectiveness

Threats of opportunism arise from asset specificity (Poppo and Zenger 1998). When an important asset is created or controlled by a different organization, that organization can engage in opportunistic behavior such as raising prices late in the project or misrepresentation of quality (Puranam and Vanneste 2009). Since this kind of behavior is only envisioned in the literature among separate organizations a single organization is not susceptible to threat of opportunism. Splitting decision rights creates opportunities for opportunism, which increase costs for the procuring organization either through the exercise of opportunistic behavior or the installation of safeguards to prevent it. Therefore, this study hypothesizes that high threats of opportunism will negatively moderate the relationship between splitting decision rights and ISD project effectiveness.

**Hypothesis 2** - Project technical complexity has a negative impact on the relationship between split decision rights and ISD project effectiveness

Tiwana (2007) argues that technical complexity has two opposing effects on the decision to outsource: technical complexity should support outsourcing as a specialized outside firm should have greater knowledge of and support for technically challenging development projects; and technical complexity increases the amount of control the procuring organization’s management wants to have over the project which is easier in insourcing. This study considers only insourced projects, so the technical capability argument is not applicable – the producing organization has all the technical ability that is available. However, the control argument is applicable to insourced projects. Tiwana (2007) further argues that increasing complexity increases coordination and specification difficulty resulting in lower specifiability. As we will argue later, high specifiability increases the positive relationship between decision rights split and ISD project effectiveness due to the language differences between the different internal organizations. Therefore, technical complexity, through lower specifiability, will negatively moderate the relationship between split decision rights and ISD project effectiveness.

**Hypothesis 3** - Project strategic importance has a negative impact on the relationship between split decision rights and ISD project effectiveness

The strategic importance of the project will both encourage executive sponsorship (Kirsch 1996) and raise the organizational level of the executive ultimately responsible for the success or failure of the project. Both of these effects will act to limit the goal differences of separate organizations, but would do little to make a unified organization more unified. Splitting decision rights when goals are already aligned will impose unnecessary constraints on the project so this study hypothesizes that higher strategic importance will decrease the strength of the relationship between splitting decision rights and ISD project effectiveness.
Hypothesis 4 - Project outcome measurability has a positive impact on the relationship between split decision rights and ISD project effectiveness

Project outcome measurability is the extent to which the project outcomes can be accurately predicted during the project based on project management metrics (Tiwana and Bush 2007). Agency theory indicates that if outcomes can be accurately measured, the contract type can be more performance based and better align the goals of the providing organization and the procuring organization (Eisenhardt 1989). Better goal alignment between groups with split decision rights should have positive impact on ISD efficiency, so this study hypothesizes that outcome measurability will positively moderate the relationship.

Hypothesis 5 - Provider behavior observability has a positive impact on the relationship between split decision rights and ISD project effectiveness

Observability is another agency theory construct that allows the principal to effectively utilize behavior based contracts (Tiwana and Bush 2007) because the behavior of the agent is clearly visible. High observability will allow the procuring organization to correct the behavior of the providing organization quickly should the need arise and increase ISD project effectiveness. The level of visibility within a unified group should naturally be high when the producers and the procurers are members of the same group, so observability will have little impact when decision rights are not split. Observability will positively impact the relationship between split decision rights and ISD project effectiveness.

Hypothesis 6 - Procurer technical knowledge has a positive impact on the relationship between split decision rights and ISD project effectiveness

This relationship has been empirically validated in the split decision rights relationship(Tiwana 2009). Higher technical knowledge in the procuring organization will positively moderate the relationship between split decision rights and ISD project effectiveness.

Hypothesis 7 - Requirements knowledge specifiability has a positive impact on the relationship between split decision rights and ISD project effectiveness

Requirements specifiability concerns the ability of the procuring organization to accurately communicate project requirements to the providing organization at the start of the project (Tiwana and Bush 2007). Accurate communication presumes understandability on the part of the recipients of the communication (Teigland and Wasko 2003), so high specifiability presumes that requirements are stated in a manner or language that the producing organization can understand (e.g. technical language in the case of ISD). In a single organization, the requirements specifiers and providers are the same organization, therefore there is no organizational or language boundary across which to state requirements (Teigland and Wasko 2003), so the degree to which requirements can be accurately stated to an external party is of little consequence. Specifiability should improve ISD project effectiveness in the case of split decision rights and have no impact in the case of a unified organization so the moderation effect is positive.

Hypothesis 8 - Requirements volatility has a negative impact on the relationship between split decision rights and ISD project effectiveness

Requirements volatility is the extent to which requirements change during the project life cycle (Tiwana and Bush 2007). In a split decision rights governance scenario, project requirements decision rights are assigned to the procuring organization (Tiwana 2009). Should a requirement change, the procuring organization would need to add to or change the existing specification for the project in order for the providing organization to meet the new or different requirement. This change increases the risk of the project not meeting the needs of the procuring organization when the requirement must be communicated across an organizational or interfirm boundary (Tiwana and Bush 2007). Therefore requirements volatility will decrease the positive relationship between split decision rights and ISD project effectiveness.

METHODOLOGY

At this stage of the research, there are unanswered questions about some of the constructs. Tiwana (Tiwana 2009) studied a single type of decision rights split in which rights to make decisions about the project were given to the users and rights to make decisions within the project were given to the IT group. While this is a reasonable arrangement, there may be others that could be effective. In addition, while this study envisons similarities between outsourcing and splitting decision rights, the antecedents of the decision to outsource (Tiwana and Bush 2007) may not be applicable to the decision to split decision rights. Since the study’s questions are currently imprecise
the first step in the study will use a case study methodology. Several cases are planned with organizations that have split decision rights governance practices in place for systems development, but that also support agile development methodologies, where it is expected that decision rights will not be split.

Cases will be selected in view of maximum variation across the variables of interest. At least four cases will be identified at each organization: split decision rights leading to an effective ISD project, split decision rights leading to an ineffective ISD project, unified decision rights leading to an effective ISD project, and unified decision rights leading to an ineffective ISD project. Both variables will be assessed using constructs from Tiwana (2009).

For each case, interviews will be conducted with project managers and user management to determine the degree to which decision rights splitting was practiced, the degree to which the ISD project was effective, and the project parameters in the research model that may have proven influential in the relationship between governance style and project effectiveness. The interview will also attempt to uncover the strength of the relationship between the development organization and the user organization with specific discussion of the organizational relationship and the amount of previous project work the two organizations have performed together. In addition, the interviews will contain unstructured discussion of other project parameters that may be important to the relationship between split decision rights and ISD project effectiveness.

If, as expected, the case study reinforces this study’s view that the antecedents to a decision to outsource (Tiwana and Bush 2007) are indeed applicable to the decision to split decision rights, then a more heavily empirical method (i.e. survey with regression analysis) will be employed to determine the precise relationships.

Expected findings

It is expected that the project characteristics that indicate outsourcing as an effective methodology will also indicate effective cases for split decision rights. This would support the study’s underlying assertion that many similarities exist between the effective governance methods in an outsourced project and the governance methods in an ISD.

However, not all expected findings are in agreement with the findings on project parameters that support the decision to outsource. This may indicate that single unified organizations for development (e.g. agile teams) are operationally distinct from organizationally separate development groups (e.g. provider vs. procurer) and must be treated differently, perhaps in relation to the organizational distance between the two groups.

CONTRIBUTIONS

Governance literature

This study contributes to governance literature by defining project characteristics that can be used to effectively apply different forms of governance thus helping to establish a research stream for a contingency view of governance at the project level. By discovering similarities between insourcing to a different part of the organization and outsourcing to a different organization, this study adds weight to the argument that the boundary of the firm is more complex than simply membership in the same parent organization.

Development methodology literature

Contributions to development methodology literature include: additional empirical support for project parameters that support effective use of outsourcing methodologies; and theoretical support for agile development methods.

Practitioners

The predicted results of this study have important implications for ISD procuring and ISD providing organizations within the firm by defining project attributes that can be effectively used to make decisions on the practical issues of team structure in development projects. Arming the practitioner with the answer to the research question: what are the characteristics of a development project which influence the relationship between separation of decision right in a project and ISD project effectiveness?, a project can be analyzed as it is being developed to identify a parsimonious governance arrangement. This allows the maximum possible flexibility while ensuring decisions are made by the proper party when project characteristics indicate possible goal differences among the parties.
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