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# Conceptualizing IT Management: Testing a Competing Values Model of Policy Compliance

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## ABSTRACT

Despite a wealth of prescriptive literature intended to assist practitioners to manage information technology more effectively, there is ample evidence that many organizations continue to experience serious difficulties in achieving desired levels of success in implementing strategic IT initiatives. This paper describes a research design intended to investigate whether identification of an organization's cultural archetypes can provide a useful predictor of compliance with accepted IT management prescriptions as a reflection of IT management effectiveness. The proposed study applies the "competing values model" as a means of operationalizing organizational culture to ascertain whether identified cultural archetypes may prove useful in predicting the extent and quality of organizational IT management efforts.

## Keywords

IT management policies, competing values, organizational culture.

## INTRODUCTION

There is no shortage of advice available for business executives to improve their firms' information technology (IT) management and use (Ross, Beath and Goodhue, 1996; Rockart, Earl and Ross, 1996; Bensaou and Earl, 1998; Marchand, Kettinger and Rollins, 2000). Yet, as reported by Bensaou and Earl, senior executives in the United States and Europe continue to express frustration with information technology and IT management. Problems typically reported include (1998, p. 119):

- IT investments are unrelated to business strategy.
- Payoff from IT investments is inadequate.
- There's too much "technology for technology's sake."
- Relations between IT users and IT specialists are poor.
- System designers do not consider users' preferences and work habits.

Each of the above-referenced articles emphasizes the importance of effective IT use in modern organizations and provides prescriptions regarding how executives can improve their firms' use of information technology. However, as Bensaou and Earl noted, the problems listed above are not particularly new. Neither are the majority of widely recognized IT management prescriptions. A legitimate question then arises: if academic and practitioner communities have developed a reasonably good set of prescriptions, then why is IT management still so problematic?

This manuscript describes a study intended to examine the usefulness of a recently developed model for conceptualizing IT management. The paper includes a brief overview of relevant literature and describes the conceptual model on which this study will be based. Research propositions and a proposed research design are briefly discussed. The research design is based on a synthesis of "competing values framework" (Quinn and Rohrbaugh, 1983; Cameron and Quinn, 1998) with insights derived from adaptive structuration theory, proposed by Poole and DeSanctis (Poole and DeSanctis, 1990; DeSanctis and Poole, 1994).

## IT MANAGEMENT RESEARCH

IT management research can be conceptualized as consisting of two distinct but interrelated streams. The first research stream concerns IT governance strategies and addresses questions concerning factors influencing decisions to adopt centralized, decentralized and, more recently, federal IT governance structures. Theoretical frameworks for predicting

selection of IT governance style have become increasingly sophisticated (Tavakolian, 1989; Boynton, Jacobs and Zmud, 1992; Brown and Magill, 1994; Brown, 1997). For example, Sambamurthy and Zmud (1999) have suggested a multiple contingency model identifying factors jointly influencing the selection of governance arrangements employed to direct, control and coordinate three fundamental spheres of IT activities: IT infrastructure management, IT use management, and project management.

The second research stream identifies IT management processes and competencies associated with successful IT implementation and use. Much of this research is empirically based, practitioner-oriented and prescriptive in nature (Rockart, et al., 1996; Ross, et al., 1996; Broadbent and Weill, 1997; Feeny and Willcocks, 1998). A problem with this literature, at least for researchers, is that it is predominantly published in practitioner-oriented journals. While publishing in such venues is desirable, it is more difficult for researchers to assess the theoretical approach and methodological rigor underlying reported findings.

There are exceptions to this generalization concerning practitioner-oriented publication of IT management research. Zmud, Boynton and Jacobs (1989) initiated research examining managerial strategies for increasing IT use in organizations. This research focused on the influence of management processes and IT-related managerial interactions on IT penetration. The study produced empirical evidence supporting the hypothesis that IT-related managerial interactions more strongly influenced IT penetration than did the extent to which organizations had effectively implemented recognized IT management processes.

Sambamurthy and Zmud (1992) extended the examination of IT management processes in research conducted under the auspices of the Financial Executives Research Foundation. Their first study identified 32 core competencies and four control strategies for assessing organizational progress toward developing such competencies. In a follow-up study, Sambamurthy and Zmud (1994) conceptualized the role of IT management in translating organizational resources into IT impacts and ultimately into business value; see Figure 1. This second project was intended to further refine core competencies identified in the previously cited study, validate the contribution these competencies make in creating business value, and create a tool that could be used by organizations to assess their capabilities regarding these competencies.

Taken collectively, these studies strongly suggest that IT management prescriptions have value. Unfortunately, the emerging IT management literature – whether conceptual or empirical – inadequately addresses the challenges that managers inevitably face in attempting to implement these prescriptions. In short, while agreeing that the theory of IT management reflected at Figure 1 is sound and has practical value, it does not provide an adequate level of understanding needed by practitioners to achieve more effective IT utilization. Building on a prior study in which a comprehensive model of IT management was developed, this manuscript proposes a research design intended to test several propositions inferred from that conceptualization.

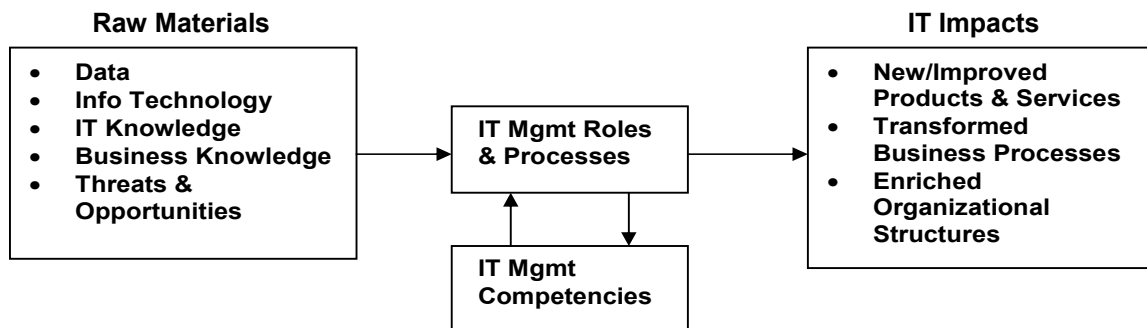


Figure 1. How IT/IS Management Adds Value (Sambamurthy and Zmud, 1994)

**CONCEPTUALIZING THE ROLE OF IT MANAGEMENT**

Given the complexity of the overall topic, the author selected a multi-phased research approach adapting Lee’s (1991) research design that was intended to integrate interpretivist and positivist research perspectives. The initial phase of this study consisted of an intensive single-site case study in which an interpretivist research design was used to develop the conceptual model of IT management depicted at Figure 2 (Beachboard, 2003).

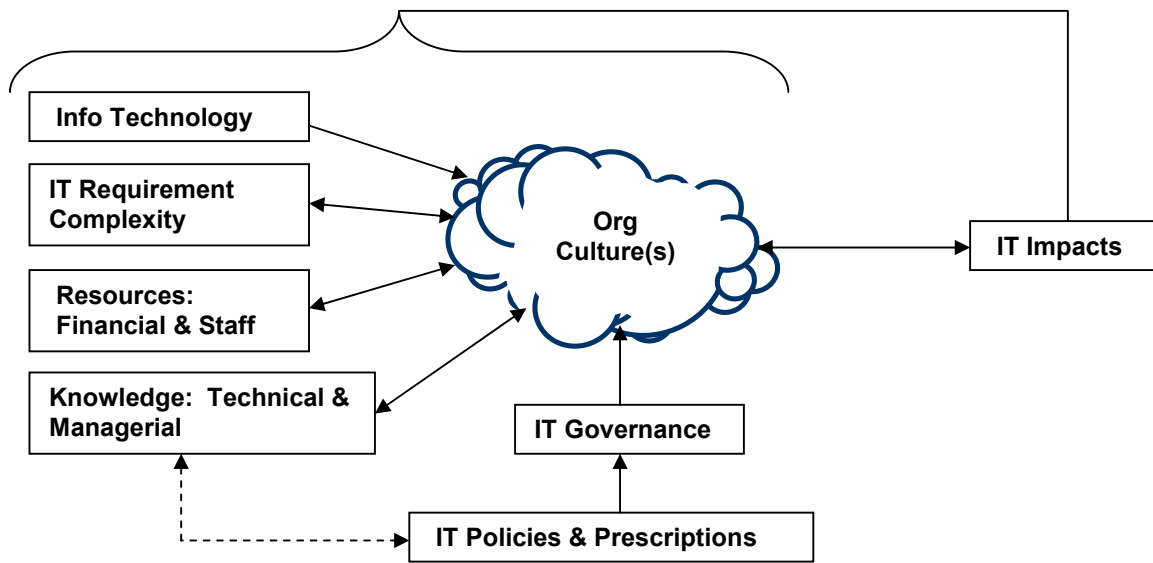


Figure 2. Reconceptualizing IT Management Role

The conceptual model identifies technology, resources, requirement complexity and organizational knowledge as the primary predictors of an organization's ability to achieve beneficial IT impacts. This model differs from a prior Sambamurthy and Zmud (1994) conceptualization, however, by assigning IT prescriptions and associated compliance mechanisms (represented by IT governance) as being somewhat more peripheral to the transformation of resource inputs into IT impacts than their model implies. Furthermore, Figure 2 identifies organizational culture as playing the central or critical intervening role in that transformation.

Consistent with Lee's (1991) multi-paradigmatic research model, it may prove possible to refine this model in such a way that at least some elements can be tested using positivist-oriented research methods. The remainder of this manuscript outlines such a follow-on study.

### PROPOSED RESEARCH MODELS

The conceptual model as specified in its entirety does not lend itself to effective mathematical modeling. Essentially, the multiple inferred direct, mediated and sometimes recursive relationships between identified constructs militate against the use of a single model. Nonetheless, this manuscript suggests that it is possible to derive a parsimonious set of actionable relationships more amenable to examination using traditional analytic techniques. Accordingly, this research seeks to examine the following propositions.

- IT technology, resources, organizational knowledge, formal policy compliance and substantive policy compliance are significant predictors of perceived quality of IT services and beneficial IT use.
- Organizational culture, *ceteris paribus*, is a significant predictor of the extent and quality of organizational compliance with widely accepted IT management policies (and as specified above, policy compliance has a predicted association with the quality of IT services and beneficial IT use).

The basis for selecting these propositions is explained below.

### Evaluating a Limited Version of the Proposed Conceptual Model

The first proposed model to be tested omits organizational culture as an intervening construct in order to more directly assess the relative contribution of each predictor. This model provides an opportunity to validate findings from the initial BLM studies, where participants identified, available technology, requirements complexity, organizational knowledge and resource adequacy as the primary predictors of IT success (Beachboard, 2003). Technical and substantive policy compliance measures (the rationale for these two measures is explained below) are used as proxy measures representing the effectiveness of IT governance mechanisms in implementing acknowledged IT prescriptions. Their inclusion in this model may help us to

understand the anomalous Boynton, et al. (1994) finding regarding the limited contribution that IT management effectiveness was found to have with IT penetration. Proposition 1 formally stated:

$$Y_0\text{IMP} = B_0\text{CPL} + B_1\text{RES} + B_2\text{KNO} + B_3\text{POL}_f + B_4\text{POL}_s$$

Where:

**IMP** = Key informant perception of IT impacts (several measures of IT impact will be used)

**CPL** = Key informant perceptions of the adequacy of available technology to support organizational identified IT requirements (combining information technology and requirements complexity from Figure 2)

**RES** = Key informant perceptions of the adequate of financial and staffing resources to support currently identified IT requirements

**KNO** = Key informant perceptions regarding IT manager knowledge of key business processes and line manager knowledge of IT capabilities

**POL<sub>f</sub>** = Key informant perception of formal adherence to widely accepted IT policies

**POL<sub>s</sub>** = Key informant perception of substantive adherence to widely accepted IT policies

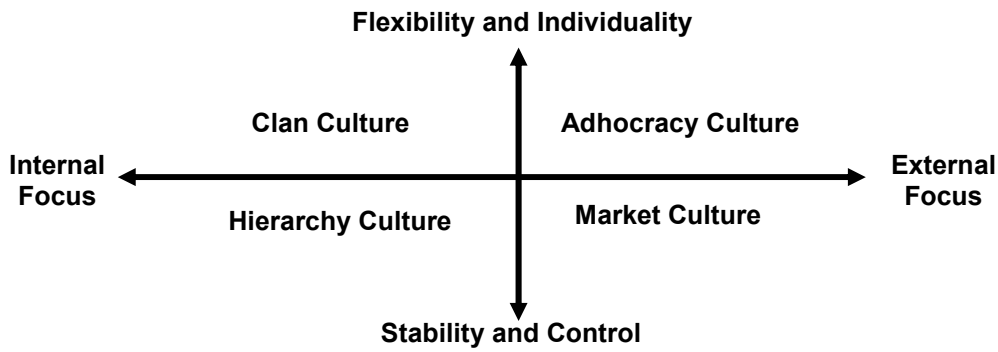
In evaluating this model, the relative contribution of the policy compliance constructs will merit particular scrutiny. If no meaningful relationship between either of the measures of policy compliance and various criterion variables is found, the actual utility of these most widely accepted policy prescriptions must be questioned. However, should a strong relationship be identified, the study proposes to more closely examine whether the “competing values model” of organizational culture (Cameron and Quinn, 1998) can be used to predict the extent and quality of policy compliance.

#### **Evaluating Organizational Culture As a Predictor of IT Management Policy Compliance**

In the earlier study, the author observed that the organization had demonstrated an awareness of significant IT management prescriptions and had attempted to reflect those prescriptions in its IT management practices. Still the organization experienced serious difficulties with its IT initiatives. The author perceived what appeared to be a discrepancy between the organization’s activities with respect to achieving formalistic policy compliance and the substantive quality of those activities.

Accordingly, the author has conceptualized two dimensions of policy compliance: a formal dimension and a substantive dimension. Formal compliance refers to an organization’s ability to provide evidence that prescribed actions are being performed (without reference to the presumed quality of that performance). Substantive compliance refers to evidence indicating that prescribed actions have been performed in a manner consistent with the spirit or intent of the prescriptions regardless of whether these actions can be formally documented. This notion of substantive compliance is adapted from the work of Chin, Gopal and Salisbury (1997) which developed a “faithfulness of appropriation scale” to measure study participants’ subjective assessments as to whether their actions (in this case, their use of an electronic meeting system) were consistent with their understanding of the spirit or intent of that system.

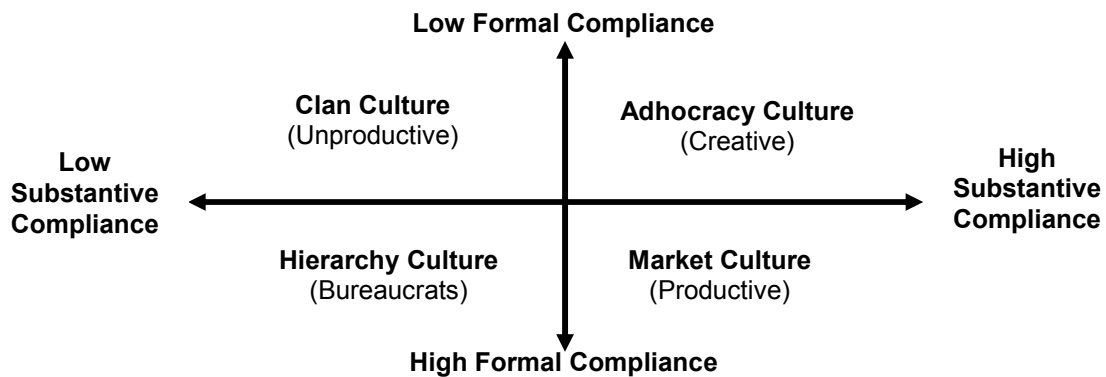
Recent findings using quantitative methodologies, particularly those of Cameron and Quinn (1998), appear to be especially promising in investigating issues concerning the influence of organizational policy compliance efforts on perceived IT impacts. Methodology developed by Cameron and Quinn is rooted in the “competing values” theoretical model (Cameron and Quinn, 1998). At its core, the theory posits that every organization must implicitly or explicitly reconcile two sets of bipolar “pulls.” One “pull” concerns the extent to which an organization places value on stability and control or instead opts for organizational flexibility (the vertical axis in Figure 3). The second “pull” concerns the extent to which an organization values an internal, person-oriented focus or chooses an external, organization-oriented focus.



**Figure 3. The Competing Values Model of Organization Culture** (Ban, 1995, p. 25; Quinn, 1988, p. 70)

The two axes define four quadrants, each representing an idealized type of organization culture (Quinn, 1988). In the upper left-hand quadrant is the clan culture, associated with an emphasis on flexibility and individuality and an internal focus. In the upper right-hand quadrant, which reflects an external focus but maintains the emphasis on flexibility, is the adhocracy culture. The lower left-hand quadrant, reflecting an internal focus and emphasis on stability and control, is associated with the hierarchy culture. Finally, in the lower right-hand quadrant is the market culture associated with stability and control and an external focus.

The fundamental proposition to be tested, then, is whether the competing values model might prove useful to predicting the extent and quality of organizational actions to comply with IT management prescriptions. Figure 4 depicts a matrix where the vertical and horizontal dimensions depict perceived levels of formal and substantive policy compliance. The study will test the proposition that an organization’s dominant quadrant under the competing values model will prove useful in predicting the extent (formal) and quality (substantive) of the organization’s policy compliance actions. Figure 4 was constructed to align the policy compliance quadrants with the corresponding competing values organizational archetypes.



**Figure 4. Competing Values Model Predictions of Policy Compliance**

For example, clan cultures are expected to achieve relatively low levels of perceived substantive and formal policy compliance while market cultures would expect to achieve relatively high levels of compliance on both these dimensions. (The word limitation for this conference paper prohibits explaining the rationale for these propositions.) The proportional reduction in error (PRE) measure, Goodman and Kruskal’s *lambda*, will be used to assess the validity of this induction. The analysis will likely be run twice: once on the complete data set and a second time for using only those organizations that exhibit a strongly dominant cultural archetype. If formal and substantive policy compliance prove to be useful predictors of IT service quality and beneficial IT use and if the competing model provides a useful framework for predicting formal and substantive policy compliance, then the competing-values model may provide both a diagnostic tool and an actionable

approach to improving an organizations' IT management effectiveness and ultimately its success at employing information technology.

The proposed study will consist of a multiple cross-sectional survey of executive level IT/IS managers or CIOs from a broad sample of public- and private-sector organizations.

**CONCLUSION**

IT management researchers are currently pursuing topics of paramount importance to organizations. Factors affecting IT success are certainly among the most important of them but also pose some of the most difficult research problems. Research difficulties are exacerbated by the need to investigate phenomena set in a context characterized by environmental, strategic, and technological volatility. Within this volatile setting, prescriptions for achieving IT success have long abounded. This manuscript describes a more comprehensive theoretical model and outlines a research approach to investigate several major factors that most directly contribute to organizational success in using information technology. But more importantly, the study attempts to focus more particularly on understanding the relative influence of actionable constructs including: organizational culture, formal IT management policy compliance and substantive IT management policy compliance, and how these constructs influence organizational IT success.

**REFERENCES (AVAILABLE UPON REQUEST)**