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AN EXTENDED MODEL OF IT GOVERNANCE: A CONCEPTUAL PROPOSAL

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Abstract

Although a significant amount of work has be done on the subject of IT governance there still appears to be some disjoint and confusion about what IT governance really is and how it may be realized in practice. This research-in-progress paper draws on existing research related to IT governance to provide a more in-depth understanding of the concept. It describes the current understanding of IT governance and argues for the extension and further development of the various dimensions of governance. An extended model of IT governance is proposed. A research agenda is outlined.

Keywords

IT governance, governance model, IT governance process, IT governance structure

Introduction

Despite the extensive academic and popular–press writings related to IT governance, the overall understanding of this governance ideal has remained somewhat convoluted and confused (Peterson 2004). Faced with a plethora of conceptual models and abstract, disjointed frameworks, academics and practitioners struggle to develop a coherent, synthesized conceptualization of this intangible notion.

Further adding to the elusiveness of this concept is the relative dearth of research addressing the practical implementation of high-level, abstract IT governance plans into a real-life, working environment (De Haes and Van Grembergen 2005). How does an organization foster and institutionalize an IT governance framework? What controls and mechanisms are necessary to ensure that the program is providing value? How can IT governance be measured? These questions and others are being asked daily in boardrooms across a complete spectrum of organizations, leading to answers that provide little clarity and generally leave the recipients unsatisfied and unfulfilled.

This paper seeks to identify and elucidate core dimensions of IT governance suggested by the existing literature. Before understanding how to plan, implement, monitor and improve governance structures, organizations first need to understand the root elements of IT governance. What are the key dimensions of IT governance? What are the core processes that must be executed for IT governance to be effective? These fundamental questions cannot be easily answered by most IT professionals. This is not surprising given that even amongst the academic community there is a great deal of variation in

defining the IT governance notion (Brown and Grant 2005). Until the underlying processes of IT governance are understood and validated it will continue to be difficult to implement the many conceptual governance frameworks.

The paper proceeds as follows. First, a brief history of IT governance is presented. This is followed by an overview of one of the most widely adopted models for governance implementation. The subsequent section presents an outline of our proposed Extended IT Governance Model. The paper concludes with a discussion on the implications of this topic for both academics and practitioners, and presents a commentary on future research direction for this field of study.

A brief history of IT governance

The term "IT Governance" first appeared in academic literature in the early 1990s, (Loh and Venkatraman 1992, Henderson and Venkatraman 1993), but was not addressed directly until later that decade, with the introduction of specific IT governance studies such as Brown (1997) and Sambamurthy and Zmud (1999). Also marking the prominence of this period was the foundation of the IT Governance Institute (ITGI) in 1998 (De Haes and Van Grembergen 2005), an industry organization established to build and foster a practitioner-focused understanding of the IT governance notion.

Despite the recentness of this formalized recognition and use of the IT governance term, the understanding of how organizations structured, monitored and evaluated their IT functions has been long studied, but under such labels as control of IS services (Olson and Chervany 1980), IS organizational structure (Von Simson 1990), IT decision making responsibilities (Boynton et al. 1992), and IS organizational roles (Brown and Magill 1994). In fact, Brown and Grant (2005) argue that a study of computer systems management controls by Garrity (1963) directly addresses all the current notions of IT governance, twenty years prior to the adoption of the formalized term.

The multiplicity and diversity of IT governance research has led to a variety of definitions of IT governance being put forward over the years (De Haes and Van Grembergen 2005; Webb, et al., 2006). However, there still is not sufficient consensus on an accepted definition. Drawing on the literature, we understand IT governance to be a dynamic, performance-driven, adaptive, relational process of aligning corporate and IT strategies, objectives, accountability structures, systems, and practices with the objective of delivering valuable, risk-reduced, and measurable returns on IT-related investments.

IT governance as a structure

Initial research into IT governance was widely based on understanding the structural and physical arrangements of the IT function within the overall context of an organization. Concerned primarily with defining the locus of IT control, most early studies were focused on the basic bipolar model of centralized and decentralized structures, with the objective of determining the relative merits of one of these governance forms over the other (for example, Golub 1975, Keen 1981, Olson and Chervany 1980).

Upon reaching a theoretical saturation of this basic notion, practitioners and academics turned to investigating novel governance forms that represented horizontal and vertical expansions of this baseline dichotomy (Brown and Grant 2005). New governance frameworks such as hybrid centralized-decentralized (later referred to as the federated model by Boynton and Zmud (1997)), and mixed IT responsibility models (Rockart 1988, Dixon and John 1989) began to emerge, providing organizations with a multitude of IT arrangement alternatives. Simultaneous to the development of new governance structures, a separate body of research investigated how best to choose from the ever-growing pool of IT governance models. Primarily oriented towards contingency analysis, the goal of this stream of research was to provide generalized alignment selection criteria for organizational decision makers, who at this point, were starting to be overwhelmed by the plethora of available options.

IT governance as a process

During the early 2000's, a definitive shift occurred within IT governance understanding, when both practitioners and academics became to realize that treating IT governance solely as a structural phenomenon provided a limited view of this complex notion (Peterson 2004, Smith 2005). In addition to building an overly simplistic understanding of the IT governance concept, structure-based governance implementation was found to separate IT governance from the overall corporate governance agenda, often times leading to a misalignment between IT objectives and overall organizational goals (Jordan and Musson 2004).

In an attempt to capture all the complexities and intricacies of the IT governance notion, researchers moved towards a process-based understanding of the phenomenon, defining IT governance as a collection of integrated forces, all designed to control and monitor IT resources while maintaining an alignment with overall business objectives (Peterson et al. 2000, Korac-Kakabdse and Kakabadse 2001, Keyes-Pearce 2002, Peterson et al. 2002, Jordon and Musson 2004).

The underlying principle of the process view is the recognition that IT governance is based on lateral decision making that extends beyond the walls of the traditional IT function into all parts of an organization (Peterson 2000, Peterson et al. 2002, Wu and Saunders 2005). With this realization, organizations are now forced to take a much broader view of IT governance and engage all levels of internal and external stakeholders in the establishment of an appropriate framework.

IT governance implementation

Regardless of whether an organization adopts a structural view or a process view of IT governance, having a conceptual or high-level plan is not nearly enough to ensuring appropriate and effective governance of its technology resources. The true difficulty, as many organizations have discovered (Sohol and Fitzpatrick 2002, Jordon and Musson 2004) is in putting an oftentimes-visceral governance plan into action. Execution, implementation and the subsequent institutionalization of an IT governance framework unquestionably represent the make-or-break stages of any governance initiative. Most organizations can plan correctly and even develop in-depth structural frameworks, but undoubtedly, failure comes with improper adoption of these somewhat abstruse blueprints. Organizations are beginning to learn that having a conceptual IT governance model does not mean governance is working, nor does it mean, it will ever work (De Haes and Van Grembergen 2005).

With the recognition of the criticality of the implementation stage, it is somewhat surprising that despite the profusion of popular press, consultancy and academic literature now addressing IT governance, that little research has actually addressed this notion, leaving a clear gap between unsubstantiated theoretical musing and real-life, contemporary practice (Ribbers et al. 2002). Practitioners wishing to implement an IT governance framework, for the most part, are faced with a mass of unsubstantiated conceptual models and disjointed frameworks that bear little resemblance to their specific requirements (Damianides 2005). Some studies that have attempted to address implementation issues (for example Rau 2004, Johnson 2005) generally provided only vague and generic instruction, leaving few clues as to what mature IT governance might look like, and how it may be achieved.

IT governance implementation model

Recognizing the lack of understanding of IT governance implementation, contemporary work has begun in defining an adoption model to bridge the gap between conceptual frameworks and real-life, functioning governance. Arguably the most visible of these models is the three-tiered development framework stemming from the collective works of Peterson (2000, 2004), Weill and Woodham (2002), and Van Grembergen, De Haes and Guldentops (2004). In this model, IT governance implementation and subsequent successful institutionalization is shown to require a customized balance between various

structural, procedural and relational mechanisms. Figure 1 shows the model, as adapted from De Haes and Van Grembergen (2005).
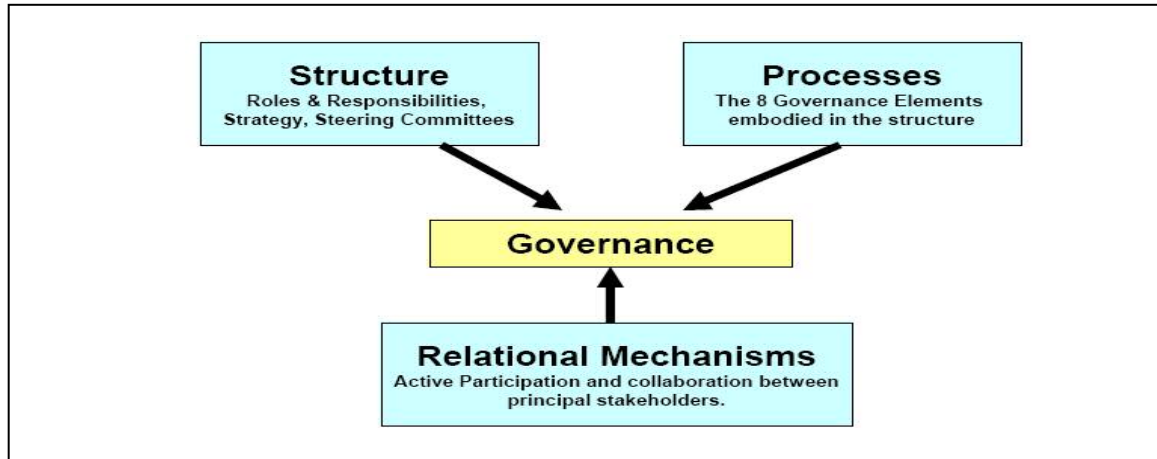

Figure 1 - Three-Tiered IT Governance Framework

With respect to this model, Structures represent the tangible planning and organizational elements outlined by the high-level governance strategy. Three main types of governance structures are included in this category: 1) Roles and Responsibilities - such as those outlined in Weill and Ross (2004) and Rau (2005), 2) IT organizational structures (also called archetypes by Weill and Ross (2004)), and 3) Committee and board structures (De Haes and Van Grembergen 2005, 2006). Interestingly, Wiell's (2004) highly cited definition of IT governance refers only to the elements found within this structural grouping.

The Process dimension of this model refers to the appropriate use of tools and monitoring vehicles in order to provide ongoing control and evaluation of the IT governance framework. Numerous instruments have been developed for facilitating IT governance such as scorecards (Van Grembergen and De Haes 2003), Control Objectives for Information and Related Technology (COBIT) (Damianides 2005), responsibility charts (McCann and Gilmore 1983), decision rights matrix (Korhonen and Pirttilä 2003) and the IT alignment maturity model (Weill and Ross 2004). Whatever the specific tool, the notion that monitoring and control instruments aid in the successful implementation of IT governance is well founded (Trites 2004).

The final dimension of the three-tiered IT governance model involves the relational mechanisms required for ensuring proper internal and external relationship management. Active stakeholder collaboration, business-IT co-location and senior executive communication are all paramount to ensuring successful implementation of an IT governance framework (Rau 2004, De Haes and Van Grembergen 2005).

An extended IT governance model

A foundational premise of the three-tier model is that there is no overall, universal best governance framework, and that each organization must implement a mix of these three requirements in a manner most appropriate to their environment (Ribbers, et al. 2002, Patel 2004), a conclusion consistent with earlier structure-based research (King 1983, Sambamurthy and Zmud 1999). Although useful as a generic framework, we argue that a few practical extensions will further increase the utility of this baseline model.

Extension #1 – Elucidation of common IT governance process elements

With every new study on IT governance comes a unique and proprietary set of terminology, definitions and underlying set of theoretical assumptions (Webb et al. 2006). This proliferation of unrelated and misaligned conceptual frameworks has led to an overall confusion with what processes are actually sufficiently and necessarily involved in IT governance (Ribbers et al. 2002). The three-tiered model, while providing a broad outline of the relevant IT governance dimensions, provides little insight into the underlying IT governance process elements, i.e. what must actually be done to accomplish effective governance. Building from the ITGI five-element domain model (ITGI 2001), we undertook an exhaustive analysis of existing IT governance literature to highlight a potential superset of processes common across the various research studies. Synthesizing conceptual and empirical evidence across both public and private organizations, we propose eight core elements necessary in ensuring successful IT governance implementation and institutionalization. These are described below.

1. *Direction Setting* – As a necessary guiding element, all IT governance frameworks must include processes for determining baseline policies and planning directions (Mckay et al. 2003, Rau 2004, Trites 2004).

2. *Strategic Alignment* – Organizations must put in place mechanisms to monitor and adjust IT governance to ensure ongoing alignment with corporate objectives (Watson et al. 2004, Damianides 2005, Financial Executive 2006; PWC, 2006).

3. *Performance Management* – Specific controls and mechanisms for establishing and evaluating ongoing performance metrics are necessary for assessing accountability as well as providing proof of services and savings (Blake 2005, Conference Board of Canada 2005, 2006; PWC, 2006).

4. *Risk Management* – Given financial risks, operating risks, and security risks, organizations must include processes designed to mitigate these threats within their IT governance framework (Jordan and Musson 2004, Von Solms 2005, Lutchen and Collins 2005).

5. *Control and Compliance* – Fundamental to all governance processes, mechanisms for control and legislative compliance are necessary and mandatory for any IT governance initiative (Rau 2004, UK Shared Services Development Network 2002, Nolan and McFarlan 2005).

6. *Relationship Management* – Processes must be available to handle conflict resolution and relationship management within the organization and across a networked environment (Korac-Kakabadse and Kakabadse 2001, Oliver and Walker 2006).

7. *Transformation Management* – Most prominent in shared services environments, processes are required for monitoring and controlling the implementation and roll-out plans of the governance framework and for managing the transformational change associated with the ongoing renewal of those plans and activities (Sirkin et al. 2005).

8. *Value Management* – This process involves the control and monitoring of the group of mechanisms required to create business or customer value (Korac-Kakabadse and Kakabadse 2001, O'Donnell 2004).

Although these elements resemble generic general management practices, they comprise the core processes that organizations should enact for effective IT governance. These processes are particularly relevant for enhancing the effectiveness and value

of IT to the organization. Without the prescient and adept execution of these elements, IT governance initiatives are destined to being deficient and problematic.

Extension #2 – Identification of relationship types

As part of the shift towards a process view of IT governance, researchers and practitioners have come to realize the critical role that formal and informal relationships and interfaces play in determining the success of any governance undertaking (Rao 2004, Ulbrich 2006). By simply focusing on performance gains through structural manipulations, organizations have tended to overlook the importance of the human factor in IT governance and have subsequently reported poor reception to their governance programs (Feldman and Khademian 2002).

Recognizing the importance of this dimension, the three-tier model discussed earlier identifies the need for effective relationship management in IT governance but does not explicate the relationship types found in most organizations or how they affect the ongoing performance of the governance framework. Using Powell's (1990) modes of governance, we argue that all IT governance frameworks must include provisions for mechanisms across three primary types of relationships, and that these mechanisms vary depending on the particular relationship. The three modes of governance include:

1. Network – represents non-hierarchical, peer relationships that may be formal (as in relationships governed by service level agreements) or informal (as in social networks). Networks comprise a wide variety of interoganizational relationships including those resulting from strategic alliances, joint ventures, and supply chain management arrangements. They also include professional and other participatory peer network relationships such as those governing common purpose resources and open collaboration. They require high levels of trust and co-operation, along with a willingness to work in a partnered arrangement.

2. Hierarchy – Hierarchical relationships are generally formal, and involve the use of negotiation and delegation procedures. They typically can be found in large, closed firms and institutions where transactions and operations coordinated by a centralized authority.

3. Market – Market relationships involve the least co-operation between stakeholders and typically represent a supplier-buyer arrangement (Lowndes and Skelcher 1998). Markets are of various types and can take the form of free flowing bazaars or more formal transactional relationships such as those found in process and technology outsourcing arrangements.

By being cognizant of the various types of relationships found within an organization, practitioners will be better able to determine which controls and mechanisms are most appropriate for each respective relationship, and as such won't try to force fit a singular process for all stakeholder engagements. The type of relationship enacted in the IT governance endeavor will vary according to circumstance, timing, and resource endowment.

Extension #3 – Recognition of the temporal dynamics of IT governance

A basic assumption of the three-tiered model is that the implementation and institutionalization of an IT governance framework is static, or at most a progressively linear phenomenon. Drawing loosely on works by De Haes and Van Grembergen (2005) and the ITGI, we propose that IT governance frameworks have at least three separate temporal aspects that must be considered:

1. *Maturity* – Maturity relates to the quality of an entity's capability in implementing and executing IT governance processes, practices, and systems. Weill (2004) proposes an IT governance maturation model that allows practitioners to evaluate and track the level of sophistication of the respective IT governance programs. Ranging from non-existent to full optimization, this checklist provides a rudimentary snapshot to aid organizations in determining their current governance status (ITGI 2006).

2. *Life Cycle* - IT governance implementation will vary with the stage in the life cycle of the governance process. Because of this, the process elements and mechanisms applied may vary in emphasis across the stages. For example, early stage efforts to implement IT shared services governance may focus more strongly on direction setting and strategic alignment than would be the case in later stage efforts that would probably shift emphasis towards value management. As with any large process undertaking, IT governance must be modified based on arising internal and external exigencies. As such, IT governance is not ever static, and can never be considered fully implemented. Although it may reach a stage of equilibrium, new factors will cause a reevaluation and modification to the existing framework instantiation.

3. *Rate of Change* – IT governance imperatives and approaches are likely to differ depending on the relative stability or agility of the response required. In extremely dynamic and volatile environments certain aspects of IT governance may take prominence over others since there is limited time to focus on all elements equally.

By recognizing that IT governance is a continually evolving, dynamic, and maturing process, organizations must provide appropriate monitoring processes to ensure that their current IT governance instance remains aligned with overall business objectives.

Extension #4 – Elaboration of IT governance structures

Although discussed in general terms (De Haes and Van Grembergen 2005, 2006), the three-tiered model does not explicitly define the types of IT governance structures that are necessary to the successful implementation of an IT governance framework. In order to provide a greater context to this dimension, a number of structural notions and notations are drawn from the works of Weill and Ross (2004, 2005). Extending the baseline model, we argue that at least four dimensions of structure warrant consideration when building IT governance structures:

1. Configuration – Weill and Ross (2004), building on Weill and Woodham (2002) identify six decision structure configurations (archetypes) available to IT organizations: Business Monarchy, IT Monarchy, Feudal, Federal, Duopoly, and Anarchy. These structures reflect varying levels of centralization and decentralization in decision-making about IT. The appropriateness of each configuration depends on a variety of internal and external contingencies.

2. Rights – Decision, input, or information rights represent the level of contribution a particular individual or group has on a particular IT decision. Individual or groups may have direct responsibility for making decisions, may have rights to provide direct or indirect input (be consulted), or may have the right to be informed when decisions are made.

3. Accountabilities – Similar to decision rights, accountability structures delineate the level of ownership of each stakeholder or group against a particular IT decision or mandate.

4. Levels – The final structural element deals with the organizational levels (strategic, tactical, or operational) associated with IT governance. In the empirical literature, two or three layers are typically considered best, as they provide the most parsimonious management and control structure (Conference Board of Canada 2006, Schmotzer 2006). IT governance processes recieve different emphasis at different levels. For example, the direction setting processes would be emphasized primarily at the strategic level.

Generally, the structural dimension of IT governance is well understood by most practitioners, but unfortunately is often the only consideration of an IT governance implementation program. As such, organizations must ensure that all these structural mechanisms are in place, but not at the exclusion of the other necessary elements.

The model

Following from the above modifications, Figure 2 shows our proposed Extended IT Governance Model.

Four core dimensions are shown in the model, identifying the four areas of necessity for proper implementation of an IT governance framework: IT Governance process elements (based on the elaboration of the three-tier process dimension), IT Governance Structures (using nomenclature from Weill (2004) and Weill and Ross (2004, 2005), IT Governance Relationships, and the Temporal dimension of IT Governance. Also included in the framework is a list of external influences or contingencies, which may shape the mix of mechanisms used to facilitate each of the dimensions.
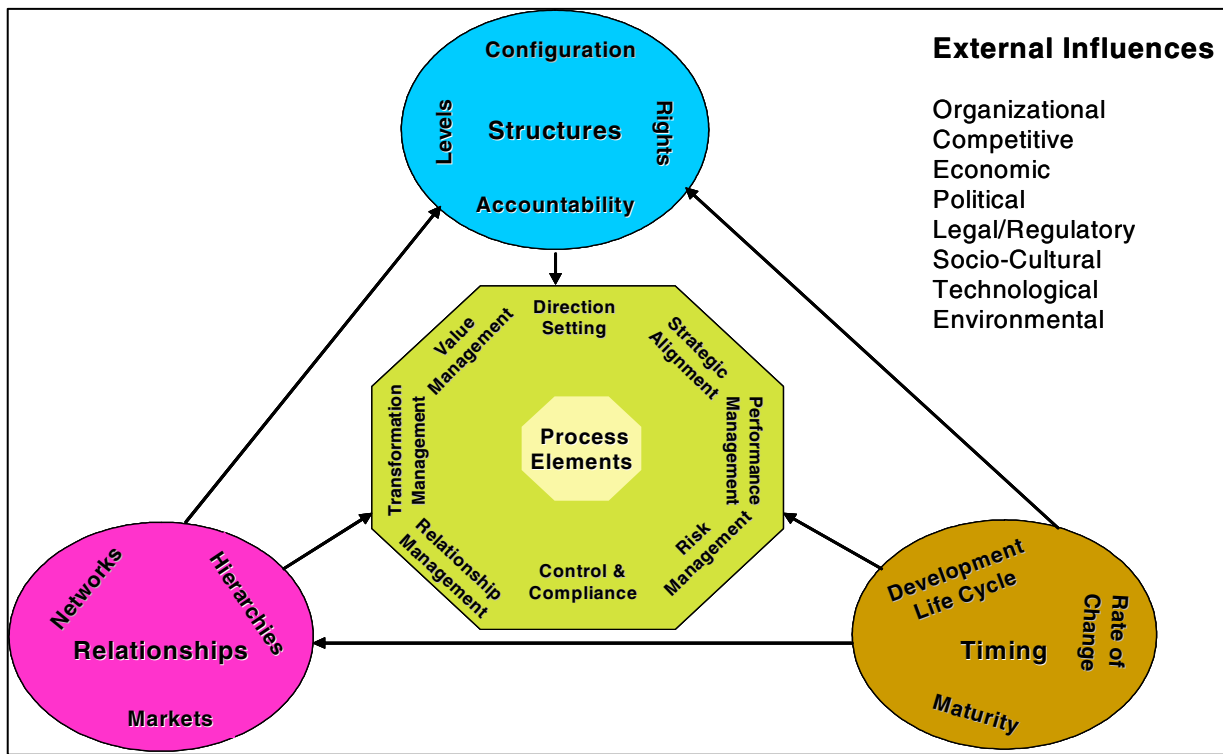

Figure 2 – Extended IT Governance Model

Discussion and implications

The model presented in Figure 2 represents our articulation of a comprehensive view of the core elements of IT governance. The individual elements in the model are themselves not new and emanate from the extant literature on the subject. By elaborating this extended model of IT governance we make explicit the contingent and dynamic nature of IT governance. We also emphasize the multi-dimensionality of the IT governance construct and extend its focus beyond structure and processes. Our model suggests that IT governance is realized in a dynamic and multi-faceted environment. Therefore, it is simplistic to assume that a focus on any one element would be sufficient to effectuate appropriate governance.

Given the importance of IT governance to contemporary organizations, managers are faced with the challenge of how best to ensure that the articulated governance agendas are enacted in practice. They also must address how to reduce the potential diseconomies that may result from enacting a particular IT governance agenda and how to manage the emergent pathways that arise when enacting a specific IT governance strategy.

The governance model presented in Figure 2 needs to be empirically validated. In doing so, further research will need to assess whether the elements of each dimension identified in the model can be substantiated. It must also investigate the nature and character to governance relationships and how they are enacted in practice. Particular attention should be given to the temporal aspects of IT governance and how the dynamics of the environment shape governance arrangements and execution in real-world settings.

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