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INFORMATION TECHNOLOGY GOVERNANCE STRUCTURES ON STRATEGIC ALIGNMENT

By Fitzroy R. Gordon, Ph.d., MCSE.

Recently, new legislation relating to governance and its benefits promised from implementation of such legislations, are high on the agenda of many corporate boards.ⁱ Information Technology (IT) governance now attracts board level.ⁱⁱ As the role of IT expands, its visibility is elevated and the planning and management of information technologies are increasingly integrated into all organizational planning that utilizes business intelligence (BI) and predictive analytics to assist decision making capabilities with a goal to enhance the customer's experience. 90 percent of corporate board members are regularly informed about IT issues, two thirds of the same boards approve IT strategy, but only 10 percent make an inquiry about IT.

Moreover, with IT being so pervasive in the business environment and so critical for the success and survival of enterprises, leaders place greater focus on the planning and implementation of IT across organizations. IT governance framework now frequently plays an important role in establishing and maintaining the organizations goals and objectives by implementing activities that support business and technology alignment. In achieving these objectives, participation of leadership and vivacious management attention to processes will ensure success.

IT governance supports three main objectives: “(a) regulatory and legal compliance, (b) operational excellence, and (c) optimal risk management”.ⁱⁱⁱ Many IT performance commonly results in failed IT projects, poor budget management, poor time management, and return on investment (ROI). Consequently, the need for governance is evident if organizations are to function optimally by establishing transparency and accountability.

The IT Governance Institute (2003) purports that “IT governance is designed to give this perspective and to provide decision makers with a cost-effective approach to address information security related business risks.”^{iv} IT governance in itself embodies risk management and information assets protection and falls under the ownership of the board of directors and executives.

For an organization to have a successful track record in IT, it must pursue to have a good business relationship with all business units. Information technology activities infiltrate different areas of the organization such as personnel departments and research and development offices, so as to ensure business and technology partnership.^v Furthermore, because of this increase expectation of success IT executives are considering strategic alignment more carefully. It is an integral part of enterprise governance and consists of leadership and organizational structures and processes that ensure that the organization’s IT sustains and extends the organization’s strategies and objective.

IT governance is a combination of factors including leadership, structure, and processes that ensure that the organization achieves integration of business and IT.

Background of the Study

The relationship that exists between IT governance structures and IT strategic alignment demonstrates the importance to achieve the goals of organizations. IT governance structure comes in two forms, namely, IT Governance Institute’s and IT governance archetype *models*.^{vi} The IT Governance Institute model states (a) Strategic alignment between business and IT, (b) Value generation from IT to business, (c) Management of the IT- resources, (d) Management of risks, security and rules, and (e) Performance monitoring of IT-function while the IT Governance

archetype model states (a) IT principles, (b) IT architecture, (c) IT infrastructure, (d) Business Application Needs, and (e) IT investment prioritization.

IT governance structure includes the distribution of IT decision-making rights among different parties in the organization and these IT decision-making rights include business alignment with IT through IT governance structures, and the organizations maturity level.^{vii} Furthermore, IT governance ensures that different stakeholders work together in a synergistic way to make sure that the benefits of any IT implementation will be maximized throughout the different business units, and a strategic alignment with the business should then permeate each level of the organization.

Previous seminal researchers and IT governance authors provide a background for the use of the term IT governance before its prevalence in the 1990s. Prior researchers and practitioners used terms such as; IT decision making, IS organizational structure and Information technology principles, which were all synonymous to the term or used to describe IT governance structures. With the failures and successes of implementation of governance structures and the formalization and achievement of enhanced IT strategic alignment.

Information Technology Governance Theories

Information Technology units within organizations experience constant challenges to produce and be efficient with additional responsibilities and expanding statutory and legal requirements while facing constraints in their budgets. One of the opportunity organizations have in reducing costs is to go through on action of standardization of processes. Information technology governance is put in perspective when factors that affect governance structures are classified into categories. IT governance follows two streams of research, the first focused on

single factor such as firm size and secondly, research used the principles of contingency theory to identify a grouping of factors that impact IT governance decisions.

Table 1

Primary Sources and Key Ideas by Stream.

IT Decisions	Stream One – IT Governance Forms	Research Outcome
Expanded IT Decision Making Structures		Research on vertical and horizontal expansion of the traditional IT organizational structures
IT Decisions	Stream Two – IT Governance Contingency Analysis	Research Outcome
Individual and Multiple Contingencies for Uniform Governance Frameworks		Research on the individual and multiple contingencies affecting traditional IT organizational structure decisions
Complex Analysis For Non-Uniform Governance Frameworks		Research on the individual and multiple contingencies affecting expanded (vertically and horizontally) IT organizational structure decisions

Stream one initial research in this area deals with the focused idea that IT governance and decision making is either centralized or decentralized. On the other hand, this discussion of singularity was put to rest for IT governance research and a second stream of contingency that focuses on the why and how of IT governance establishment in the firm.^{viii} The multiple contingency theories came up with multiple proposals that “include organizational structure, business strategy, industry and firm size”, to determine an appropriate setting for decision making (see Table 1).

Information Technology Governance Structures

The notion of decision-making responsibilities evolved from a series of independent assessments and choices within the different business units of the enterprise, to an expansion of multilateral and multidimensional decision-making. Governance structures such as centralized or decentralized decision-making possess their own advantages and disadvantages, the functional operation of the enterprise necessitates “providing centralized direction and coordination while recognizing the value of increased discretion regarding IT decision making on the part of managers throughout the organization”.

Within the centralized decision-making structure economies of scale becomes a direct focus, and a primary IT unit sets, mandates and have decision making authority for the infrastructure, architecture while setting standards for the organization wide business units; but at times ignore the freedom of these units and may increase frustration because of added bureaucracies. Within the decentralized decision-making structure, customer customization and faster integration of changed processes is the main focus. This structure not only assumes authority for their IT infrastructure, but also causes duplication and fragment IT products and services because of a multiple operation of units doing the same processes.

An extension of the above structure includes a hybrid combination of both decision loci that address the varied array of IT decision types that is made in an organization. This hybrid decision process called a federal mode was used to combine decision making responsibilities and was used to find a way to separate decision rights for different types of activities. Core IT decision making such as IT infrastructure and IT investments would be centralized to ensure enterprise wide consistency and then decisions relating to business applications would be decentralized. This hybrid functionality allows the organization to operate more efficiently in both IT and the business unit’s decision making hierarchy.

Table 2

IT Governance Structural Tradeoffs

IT Strategic Alignment Drivers	Centralized IT Governance	Decentralized IT Governance	Federal IT Governance
IT Synergy	+	-	+
IT Standardization	+	-	+
IT specialization	+	-	+
Business Responsiveness	-	+	+
Business Ownership	-	+	+
Business Flexibility	-	+	+

Source. Adopted and adapted from Asante, 2010; Peterson, 2004; Brown and Magill, 1998 and Rockart et al., 1996.

These three modes are now embraced by businesses to show the relational mechanism that exists within the organization. The centralized and decentralized structure combined to form the federal structure and the usage and implementation of these structures were adapted to bring support within the firm's alignment perspective as identified in Table 2. Further research unveiled a set of classifications that further expand the variations of decision making-structures relating to IT governance. These structures are taken from political archetypes and include business monarchy, IT monarchy, feudal, federal, IT duopoly, and anarchy.^{ix} These archetypes put emphasis on allocation pattern, with the business monarchy and feudal archetype having business executives and business unit managers making IT decisions as equal partners, while the federal archetype has the business unit and corporate management making IT decisions. Unlike the IT monarchy where IT decisions are made by the head of IT unit only, the IT duopoly has the duo of IT and the business leaders making decisions. Finally, anarchy does not have an IT governance mechanism in place.

In summary, Figure 1 shows the different governance structures evolution which also reflects the decision making span for each selected type.

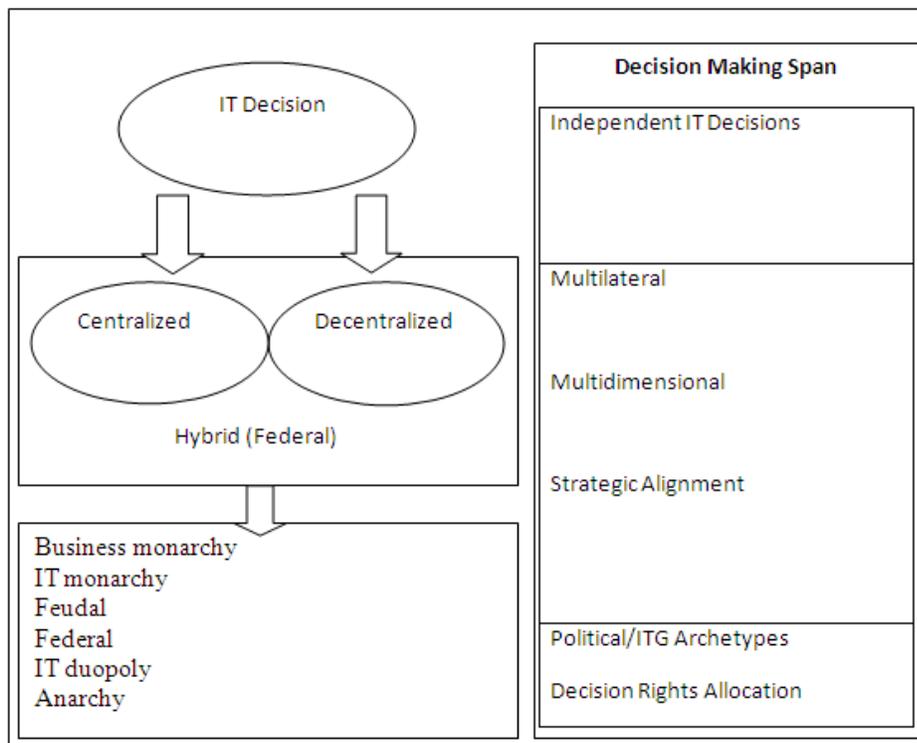


Figure 1. Current IT Governance Structures decision making span.

IT Strategic Alignment

Information technology and business strategy evolved into an interwoven process into today's businesses. This evolution occurred because of the pervasive nature of IT within the operations of most organizations today; whether they are private sector, public traded companies or government agencies.

Recently, IT strategy and planning became a major component for business alignment, and continued as a growing factor in the IT governance program. This occurred mostly because of the fact that, IT is requiring more technical personnel and insight than other disciplines to understand. Furthermore, IT enables the enterprise, creates risks, and gives rise to new opportunities. On the other hand, some literature disputes this idea note that IT has conventionally been seen as a separate function from the business, and when combined with global complexity, measuring value is difficult for the firm. Additionally, efforts to achieve

alignment between IT strategies and the business are not always successful and often go astray.^x If the enterprise address the alignment of business and IT strategies “not as an event, but a process of continuous adaption and change”; whereby technology can create new or modify business practices at a fast rate.

Maturity Models

The ability to develop and establish process of tracking organizations effectiveness is an important factor within the enterprise that they may employ a self-assessment and benchmarking for processes. This research looked on Carnegie Mellon's capability maturity model integration (CMMi) which is defined with five levels of maturity and is a good example of how most maturity models are organized. The maturity level of the firm addresses the firm's capability to address selected business practices. The tool also has six maturity categories: communication maturity, competency/value measurement maturity, governance maturity, partnership maturity, technology scope maturity, skills maturity along with the five levels of measurement.

Within the COBIT framework management guidelines, there exists critical success factors (CSF), key performance indicators (KPI), key goal indicators (KGI) and maturity models which are indicators for value delivery. Based on the IT Governance Institute maturity models these also refer to business requirements and control capabilities at different levels. The difference within the organization is measurable and can be recognized as a profile for the enterprise as it relates to IT governance and control which then can be used as a support for gap analysis to determine what needs to be done to achieve a chosen level of maturity.

Of the 135 participants; Fifty or 37% said that the CIO reported to the CEO, president, or chairman of the company. Table 15 shows the following frequencies and percentages for reporting relations.

Results

Of the 135 participants in this research 33% of the participants says that their organization are at level 3 Established focused process, while only 6% are at the optimized level.

^{xi} In addition, most of the respondents say senior and mid-level IT managers have a good understanding of the business which suggests that decision making are mostly done by employees who understand how the business operates. When asked about how metrics and processes are used to measure IT's contribution to the business, 27% of the respondents states they formally assess technical and cost efficiency using traditional financial measures, such as return on investment (ROI) and activity based costing (ABC), they also states that they put formal feedback processes in place to review and take action based on the results of the measures, while 11% say these procedures are purely technical. Therefore decision making process for IT governance and strategic alignment can only be successful if the organization has a management buy-in and IT decision making should be a shared practice between both business and IT managers. Fifty or 37% said that the CIO reported to the CEO, president, or chairman of the company. Table 3 shows the following frequencies and percentages for reporting relations.

Table 3.

Reporting relations

Characteristic	<i>n</i>	%
<i>CIO reports to:</i>		
CEO, president, chairman	50	37
CFO	13	10
COO	21	16
Business unit executive	44	33
Other	7	5

Note. Percentages column may be over or under 100%.

When asked how IT is organized, 66 participants, or 49%, selected centralized and 35 participants, or 26%, indicated federated or hybrid. Table 4 shows the following frequencies and percentages for IT organizational structure.

Table 4

<i>IT organizational Structure</i>		
Characteristic	<i>n</i>	%
<i>IT organization</i>		
Centralized	66	49
Decentralized	22	16
Matrixed	4	3
Networked	8	6
Federated/hybrid	35	26

Note. Percentages column may be over or under 100%.

Theoretical Implications

Theoretically, factors that affect governance structures follow two streams of research, the first focused on single factor such as firm size and look on traditional IT organizational structures. In addition, stream one continues to investigate expanded IT decision making structures by including research on vertical and horizontal expansions of the traditional IT governance structures. Stream two uses the principles of multiple contingency as seen in Table 1; this principle identifies a grouping of factors that impact IT governance decisions and look on multiple contingencies for a uniformed governance framework. Stream two was further investigated theoretically to look on complex analysis for non-uniform governance frameworks by identifying how the individual and multiple contingencies affect IT organizational structure decisions as outlined in the responses from this research. This research contributed to theory by investigating contingencies that look on factors such as effectiveness of IT and business

communications, measurement of the competency and value of IT, governance, partnerships between IT and business functions, scope and architecture of the IT infrastructure and skills.

Practical Implications

Practitioners who are looking forward for an adaptation toward strategic alignment can apply principles set out in this research. Committees such as the standards committee, IT steering committee and IT governance committee, reveals that to work towards alignment an iteration process that involves collaboration is needed to make governance decisions by committee members. Currently, various industry standards and frameworks such as Control Objectives for Information and related Technology (COBIT) (This is an IT process and control framework linking IT to business requirements) are available to boards of directors which can be used as a transition to apply industry practices. A practical application of these standards will therefore require adherence to policies and procedures because in different areas, reporting authorities impose fees and fines to ensure that compliance are met.

Recommendation for Future Research

An area for future research is to determine how C-level executives (CxO) weighs in on IT governance and strategic alignment decisions for industries investigated in this research.

Qualitative replication of this research can prove to answer questions, such as Effectiveness of IT and Business Communications, Measurement of the Competency and Value of IT, Governance, Partnerships between IT and Business Functions, Scope and Architecture of the IT Infrastructure and skills; a qualitative research may be able to adopt a iterative process, that were not able to be given from the quantitative format presented in this research.

A correlational research into how industry type and organization size correlates to the levels of maturity.

longitudinal research that will investigate the organization from the initial stage of governance to final implementation of IT governance framework and standards, such as the (1) Control Objective for Information and Related Information Technologies (COBIT), (2) Information Technology Infrastructure Library (ITIL) which is used as the standard for service management and delivery and (3) The Code of Practice for Information Security Management (ISO/IEC 17799: 2005).

Conclusions

IT governance and strategic alignment is a pursuit for strategic planning for the organization. IT standards, IT frameworks and IT investments, after implementation, they must be managed to enable return on investments. The IT Governance Institute (ITGI) and other bodies such as ITIL put in place structures and best practices to assist in the monitoring and controlling of the governance process. IT governance supports three main objectives: (a) regulatory and legal compliance, (b) operational excellence, and (c) optimal risk management.^{xii} Poor IT performance is commonly the result of failed projects, missed deadlines, budget overruns, and poor returns on investment (ROI). Consequently, the need for governance is evident if organizations are to function optimally by establishing transparency and accountability.

Endnote

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