

THE IMPACT OF IT GOVERNANCE ON ORGANIZATION CULTURE FOR INNOVATION CAPABILITY

Research-in-Progress

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Abstract

Organizations are utilizing IT as tools for sustaining their comparative advantage or creating business values. Many organizations spend serious IT budget for successful use of IT. IT is now taking major parts of everyday operation and management. IT related decision is getting more pervasive and complex form through organizations. IT Governance helps organizations to successful IT use by defining IT decision related structure and process. It defines who is responsible on each IT related decision area. There is no ultimate IT Governance structure. Therefore, each organization should consider their contingency variable to extract customized IT governance for their need. Previous IT Governance contingency analysis stream focused to find variables that influences to IT Governance but it has few empirical evidence. This study proposes empirical study between IT Governance and organizational contingency variable and Organization culture characteristics for innovation capability.

Keywords: IT Governance, Innovation, Capability, Archetype, Contingency

Introduction

Organizations has interest to solve their limitation and constraints as global business environment is getting more fluid and complex (Chanopas and Krairit, 2006). For this matter, IT is used as a tool to promote their competency or growth. (Alshawi *et al.*, 2003, Kumar, 2004, Chanopas and Krairit, 2006, Huang *et al.*, 2006)

This trend can be observed in-directly through IT spending of many organizations. According to Gartner, Many organizations' IT spending is rose up to 2.5% from 2010. (Potter *et al.*, 2011). IT investment should promote increasing the organization's value. However, it is getting harder to implement IT investment that increases organization's value as IT Trend change phase is getting faster. This IT investment characteristic gives organizations interest to have better IT Governance which helps to ensure who has responsibility on which IT decision area. (Weill and Ross, 2004).

IT is now having major roles of many organizations. There are trends that IT matter is being handled by outer IT department, IT investment size is getting bigger, and IT Project intrinsic complexity is getting bigger. One important worker cannot handle and learn whole organization's IT related matters. For whole organization's benefit, IT Governance is an important matter. (Weill and Ross, 2004).

Previous research shown that better performance organization's IT Governance pattern is different. (Weill and Ross, 2004). For this reason, previous research studied the methodology for IT governance design. Many research were focused organizations' internal and external factors because they assumed IT Governance is influenced by these factors (Brown and Magill, 1994, Sambamurthy and Zmud, 1999, Peterson, 2004) However, each researcher used different variable and there are few attempt to combine these variables for one empirical study, and most of study has case study form or narrow sample empirical study.

This study proposes an empirical study that tests combined various IT Governance determinant factors, IT Governance archetypes and organization's culture factors. This study gives two major implications, first, expanding IT Governance empirical evidence regarding IT Governance determinant, second, proposing new variable as IT Governance performance result. Due to relatively hard to compute IT governance financial performance, this study proposes organization's cultures for innovation capability as an IT governance performance variable.

Literature review

In this literature review section consisted with IT Governance definition, IT Governance determinant and organization's cultures for innovation capability.

IT Governance

IT Governance definitions shows little variation by definers. Table 1 shows IT Governance definitions

Table 1. IT Governance Definitions	
Definer	Definition
Weill and ross, 2002 [10]	Specifying the decision rights and accountability framework to encourage desirable behavior in the use of IT.
Gartner [11]	IT governance as the set of <u>processes</u> that ensure the effective and efficient use of IT in enabling an organization to achieve its goals.
ITGI, 2001 [12]	IT governance is the responsibility of the board of directors and executive management. It is an integral part of enterprise governance and consists of the leadership and organizational <u>structures and processes</u> that ensure that the organization's IT sustains and extends the organization's strategies and objectives

From the table 1, there are different focus points on each definition. The definitions focuses to IT Governance should define process and who is responsible of successful IT uses and their responsibility. This matter is explicitly defined in ITGI definition which shows that organization's structure and process are part of IT Governance component.

Weill & Ross's IT Governance framework integrated IT Governance components which allows capturing the whole organization's IT Governance snapshot in macro level. This IT Governance framework consisted with IT decision making area and IT Governance archetypes. This framework can show whole organization's IT Governance in one table by analyzing IT Governance archetype on each IT decision making area. (Weill and Ross, 2004). Table 2 shows Well & Ross's IT Governance decision making area.

Table 2. IT Governance Decision making Archetypes (Weill and Ross, 2004)	
IT Decision area	Description
IT Principles	High level statements about how IT is used in the business
IT Architecture	An integrated set of technical choices to guide the organization in satisfying business needs. The architecture is a set of policies and rules for the use of IT and plots a migration path to the way business will be done (includes data, technology and applications)
IT infrastructure strategies	Strategies for the base foundation of budgeted-for IT capability (both technical and human), shared throughout the firm as reliable services, and centrally coordinated (e.g., network, help desk, shared data)
Business application needs	Specifying the business need for purchased or internally developed IT applications
IT investment and prioritization	Decisions about how much and where to invest in IT including project approvals and justification techniques

First IT decision making area is IT principle. IT principle is the decisions regarding defining IT roles in the organization. For example, it could be making an IT mission statement that described in entire organization level. Second IT decision making area is IT architectures. IT architecture decision considers how to integrate the data or processes which are closely related to the core business process.

It is like the blue-print about integrated data and processes. Third IT decision area is IT infrastructure. It is the decisions are about organization wide shared service. The service can be used by multiple applications. For example, investing for improved network hardware to the organization is part of decision of IT infrastructure. Usually, investing on IT infrastructure takes serious IT budget. However, this decision will affect the competence of IT of the organization for the future. Fourth IT Decision area is Business application need. This decision area covers IT application development or purchases for the organization's business need. For example, purchasing IT solution to solve the business unit's problem could be Business application need decision area. Last IT decision category is IT investment & prioritization. IT invest decision area is about prioritize IT projects and decides how much should be invested. (Weill and Ross, 2004)

Table 3. IT Governance archetypes (Weill and Ross, 2004)	
Archetype	Description
Business Monarchy	A group of, or individual, business executives (i.e., CxOs). Includes committee comprised of senior business executives (may include CIO) Excludes IT executives acting independently
IT Monarchy	Individuals or groups of IT executives

Feudal	Business unit leaders, key process owners or their delegates
Federal	C level executives and at least one other business group (e.g., ExO and BU leaders)-IT Executives may be an additional participant. Equivalent to a country and its states working together.
IT Duopoly	IT executives and one other group (e.g., ExO or BU leaders)
Anarchy	Each individual user

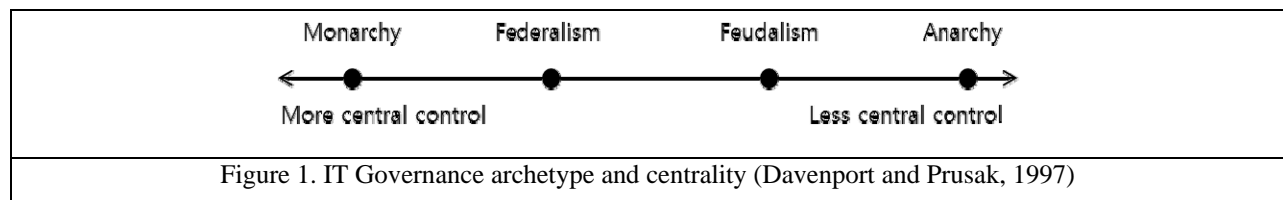
According to Weill et al, Each IT Decision area could has different archetype depends on who make the decision. There are 6 archetypes. Table 3 describes 6 archetypes. This study adopted this IT Governance framework to capture sample organizations' IT Governance.

IT Governance Antecedent Factors

In early age of IT Governance study, there were two research streams. One is IT Governance form. Another research stream is IT Governance contingency analysis. IT governance Form research stream is a research area that studies IT Governance archetypes. IT Governance contingency analysis is a research stream that studies how IT governance helps to organizations and why or what IT governance is suitable to an organization? (Brown and Grant, 2005)

In early age IT Governance Form study focused bi-polarized (Centralized-decentralized) archetype analysis. Centralized form is a decision making structure from that organization structure or process is highly dependent to some of core personnel or group. Decentralized archetype is opposite from of centralized archetype. Each individual personnel or group have independent rights to decide and execute. In early age of IT Governance form study explored characteristic, pros and cons of centralized and decentralized archetype. (Brown and Grant, 2005). For example, most case centralized archetype is strong at standardization and specification but gives less advantage for organization flexibility and customer response. On the other hand decentralized archetype is strong at organization flexibility and customer response but gives less advantage for standardization and specification. (Peterson, 2004).

Later research of IT governance form studied another form of IT governance archetype which is federal. Federal archetype is designed for combining benefits of both centralized and decentralized archetypes. Some study describes federal archetype with different terminology. For example, Distributed governance, Hybrid Governance or "Centrally-decentralized" governance (Brown and Grant, 2005)



Weill's IT Governance archetypes are derived from Information Ecology by davenport and prusak (figure 1). Those archetypes included Anarchy type which is highly decentralized archetype and monarchy archetype which is highly centralized archetype. On Weill and Ross IT Governance framework, IT Governance archetype should be analyzed for each IT decision area. This allows an organization's IT Governance form on each IT decision area. (Weill and Ross, 2004)

Another IT Governance study stream is IT governance contingency analysis. This study stream tried to find IT governance design method by focusing on contingency variables that could identify which IT governance structure proper to specific organization. (Brown and Magill, 1994, Sambamurthy and Zmud, 1999, Peterson, 2004).

Table 4. Determinants of IT Governance (Peterson, 2004)			
	Centralized	Federal	Decentralized
Business Strategy	Cost focus	< >	Innovation focus
Business governance	Centralized	< >	Decentralized
Firm Size	Small	< >	Large
Information intensity	Low	< >	High
Environment Stability	High	< >	Low
Business competency	Low	< >	High

Table 4 is summarized table of contingency variables that could influence IT governance archetypes. This table shows each variable could influence IT governance archetype centrality. For example, if business strategy is cost centered, governance archetype should be centralized archetype. Federal archetype position is middle because federal archetype designed for pursue best of both centralized and decentralized archetype. This tables correspondent studies are Ahituv et al., 1989, Brown & Magill, 1994, Sambamurthy & Zmud, 1999, Tavakolian, 1989. These study tried to expand empirical evident for IT Governance determinant contingency variable. However, there is no combined contingency variable empirical test study. Most of study studied some of contingency variable but had limited sample. For example, Tavakolian took 52 computer component manufacturers. Brown & Magill 1994 took 6 companies. Sambamurthy & Zmud, 1999 took 8 companies samples. Therefore sample set was limited. (Peterson, 2004)

In this study, adopted all contingency variables in table 4 and trying to expand Empirical evidence with larger and various sample.

Organization's Cultures for Innovation Capability

IT is now utilized as a tool for sustain their competitive advantage (Alshawhi *et al.*, 2003, Kumar, 2004, Chanopas and Krairit, 2006, Huang *et al.*, 2006) or promote innovation in their organization. In broad concept of innovation, innovation is all action that creates values. Therefore, it is possible to look adoption IT for their process or product innovation as their innovation activity.

Many previous researches tried to find value of IT in terms of financial value. However, measuring values that created by IT could be complex matter because of IT impact dilution. (Weill and Broadbent, 1998).

This study adopted Hurley & hult's organization performance framework to measure IT Governance performance. This framework suggests that organization performance influenced by organization structure, process and its culture characteristics. This framework's process and structure covers organization size, founded year, organization hierarchy and ranking system. This framework's culture characteristic covers internal learning and development culture, participation decision making culture, support and collaboration culture, power sharing. Those variables are predictor of organization's innovation capacity in this framework (Hurley and Hult, 1998).

In this framework IT governance can be positioned as organization's structure and process because IT governance covers an organization's IT related decision making structure and process. However, IT governance itself cannot describe organization's culture characteristics for innovation capability.

Furthermore, the culture characteristic only gets feedback from organization performance in this framework. Organization's structure and process is not getting feedback. (Hurley and Hult, 1998). Therefore, it is hard to know specific culture characteristics is better however, it is possible to expect the organizations that shows distinguished performance could have different culture characteristic pattern because innovation capability comes from configuration of organization's structure and process and its culture characteristics.

Research Framework

The research framework consisted 3 parts. Determinant of IT governance, measuring IT governance and organization cultural factors for innovation capability.

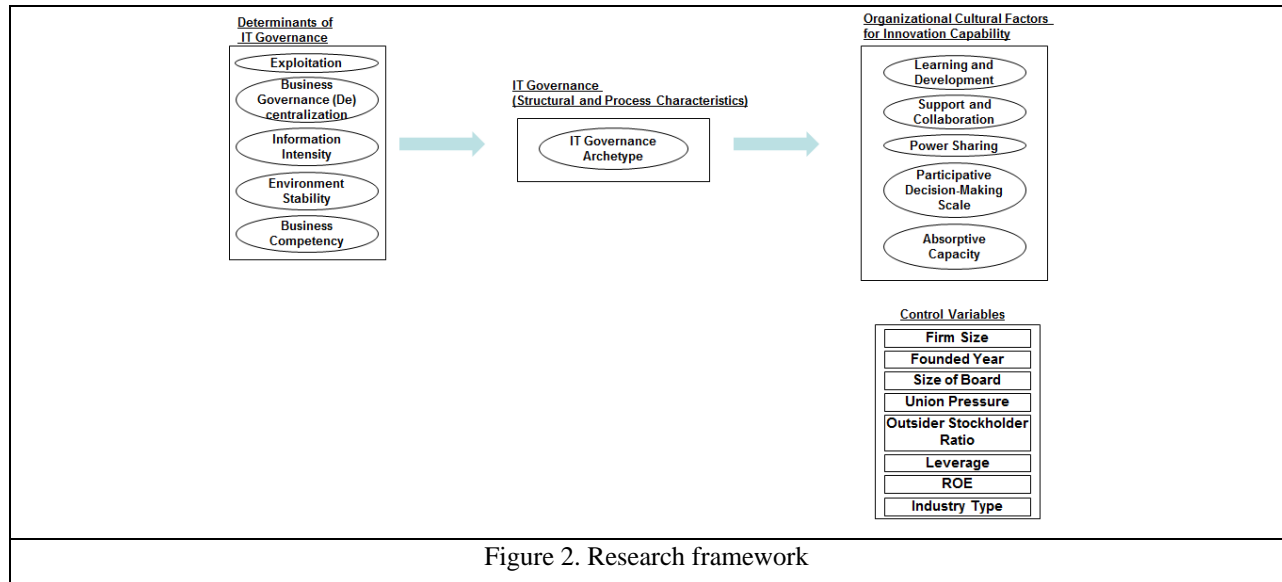


Figure 2. Research framework

This study adopted all contingency variables that could influence to IT Governance archetypes in table 2.

Only business strategy is replaced by Exploitation. This variable measures organization's efficiency pursuing strategy (Burton *et al.*, 1998). To measure IT governance, this study adopted Will and Ross's IT Governance framework. Organization cultural factor for innovation capability is adopted as a outcome variables. (Hurley and Hult, 1998)

In addition Absorptive capacity (Cohen and Levinthal, 1990) is adopted. This variable adopted to measure how much IT governance influences to organization's innovation capacity. Industry, Leverage ratio, outsider stockholder ratio, union pressure, size of board, founded year, firm sizes adopted as control variables

Future Plan

This study is gathering participations from various companies without limitation of industry type. They will receive structured interview and survey for empirical test. Reason why this study adopted structured interview and survey is let participant understand concept of IT Governance correctly and answer the survey. All participant will receive same information as previously implemented script and taking survey.

Conclusion

This study proposes empirical test for combined IT governance determinant variables and IT Governance archetypes and relation of IT Governance and organization culture factors for innovation capability.

If results show that IT governance determinant influence each IT decision area archetype differently, it will provide useful implication when designing IT Governance. Furthermore, if results show relations between IT Governance and organization culture characteristics for innovation capability, practitioners will reconsiders considering organization culture characteristics while implementing IT Governance.

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