ITA functions and IT governance from towards public & private enterprises in Korea: A study for influence factors

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Received 31 August 2012; revised 01 August 2013; accepted 04 September 2013

In this paper, derived some function factors from ITA role in organization as to analyze what ITA function has influenced on ITA governance. The factors of IT governance system and their effects on the enterprises organizations are discussed and the relationships are verified by empirical mode method. In result of statistical analysis based on the 320 case of organizations toward public and private enterprises in South Korea, it appeared that IT infrastructure, IT technology system and IT performance system of IT functions are the contributing factors on the IT governance.

Keywords: ITA, IT technology system. IT governance, IT service, IT performance system, IT function

Introduction

With the recent proliferation of social media along with advanced mobile technology among the global village people, traditional methods of communication and information sharing are undergoing a revolutionary change¹. Business needs constantly change, while systems, once in place, remain relatively rigid. IT implementations involve both up-front and ongoing investments for outcomes that no one can precisely predict². These uncertainties and complexities lead many managers to abdicate their responsibilities for ensuring that their people use IT effectively, Getting more value from IT is an increasing important organizational competency³. The term ITA has used since late 80's and as the concept began to be appeared on the documents of US budget office in 1997, which includes the Enterprise Architecture Technical Reference Model and Standards Profiles within Information technology architecture. However depending on the research or organization, different terminologies substituted like Information Architecture, Enterprise Wide Information Technology Architecture, Information System Architecture, Information Systems Technology Architecture, etc have been used. But, as the information goes in advances, the business of information has been integrated and connected in many fields, even till internal and external of company's organization related to the information business, and the consideration of inter-operation between the standard and the system of information technology has been required⁴. The ITA may maximize managing the efficiency of investment, strengthening the ability coping with the variation flexibly as presenting a blue print of desirable information in an organization supports to the effective management of information asset, and to use the system for making fair decision effectively⁵. The various basic factors of ITA are that expressing a matrix classified according to the variety aspects and perspective of business, application, data, and technology infrastructure as a model of architecture, and it must contain the resource related to be possible to make the strategic decision of an organization, and must array them between each productions⁶. There exists an aid tool like the standard, method and instrument supporting the activity of life cycle systematically and effectively contains the productions with respect to the architecture of model referred, business, application, data, technology and security. ITA framework addresses the basic IT architectures: Application, Data and Technology Infrastructure with access, systems integrity and enabling technology. Documenting the current state architectures can also be a good tool in educating management about the state of IT and securing funding for improvement. It works with our clients to

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define the future state architectures that are required to fulfill the IT strategy and business goals. The gap analysis between the current and future states will help define the projects, and their priorities, that are required for IT to move forward in implementing its strategy. IT architectures have different representation levels and different perspectives. In the organization, they introduced ITA to maximize the benefit or effectiveness, resolving the problem of IT system built up in already, and under utilization. For IT governance decisions must be made and I refer to this grid as the governance Arrangements Matrix lists with five interrelated IT decisions\textsuperscript{6}. IT principles - Clarifying the business role of ITA, Defining integration and standardization, IT infrastructure - Determining shared and enabling services, Business application needs specifying the business need for purchased or internally developed IT applications, Choosing which initiatives to fund and how much to spend. Summarizing the above definitions of IT governance from various agencies, it is described as achievement of organization's strategy and goal, fusion of business and it, organization function and leadership, decision making and responsibility, it property and risk management, and control process while performing with the evaluation through achievement measure as the base. Although many other factors influence financial performance measures, strong performance provides confidence in the firm’s IT governance. An increasing number of companies are considering applying IT governance as part of their business management activities to avoid risks and improve competitiveness to achieve business goals. Consistent to the core function of business management, IT governance connects IT strategy and processes to business strategy. IT governance’s role of connecting business strategy with IT strategy to achieve value creation, risk management, IT resource management and IT performance is not a recently developed concept. On a foundation of organization experience, IT governance implements various IT management and control activities.

**Relations of ITA and IT governance**

ITA governance is being recognized as the essential factor to secure the competitiveness through IT introduction and effective usage in organization. It is to connect the IT strategy with business strategy tool\textsuperscript{7}. The IT principle, IT structure, infrastructure strategy of IT, necessary of business application, determination of IT investment and its priority, which are keys governing the governance, contain the majority factors as itself, performing in ITA. The factors constituted of IT governance are ERP, CRM, SCM, MIS, BPM, ITSM, BSC except the ITA, and the IT governance can be grasped as combining these factors into an integrated strategy. To maintain and manage to let the architecture be evolved in accordance with the internal and external situation of the organization, ITA governance and the IT governance including this are required i.e. ITA is the key element of IT governance. As ITA is to design, utilize, manage the architecture of entire company effectively, the ITA must have the organization and process in order to cope quickly with the demand of business by managing the information systematically. It is desirable that introducing of IT governance is defined in consideration of authority and leadership of ITA organization on the basis of present IT organization and process, and the rapidity of decision making, and easiness of practice, and suitability of organizational culture.

**Review of literature**

Mark C. Paulk and others (1993) in the Capability Maturity Model (CMM), tracking is just one element of a standard project management methodology which some enterprises rely on. The Capability Maturity Model, a highly standardized process for certifying organizational project management. Marianne Broadbent and Peter Well (2003), in the "Effective IT Governance by Design," starting to see real teamwork across all our businesses. And are reducing the level of complexity, dealing with vendors differently.\textsuperscript{8} Jeanne W. Ross and Richard Wood ham, in the "Chase Global Markets: Defining New Business Models in the Investment Banking Industry," discussed progress on the project and related efforts, including infrastructure development and architectural issues. They led to greater understanding of the governance decisions around enterprise architecture and shared infrastructure, and their implications for individual business application projects\textsuperscript{7}. Here, in this paper, I do want to show proof of some hypothesis ITA governance which concerning to IT Infra system, IT technology system, IT performance system. This paper is intended that the organizations could find solutions about implementation of ITA and IT governance through the empirical study of IT Governance based on IT operated by Public or Enterprises. In special, focusing on IT infrastructure systemization, IT service
level is expected to improve of the IT governance sphere. This study is intended to propose how to improve information management efficiency through ITA. IT can have effect on business and the enormous IT costs, which results the interests for the IT Governance to increase\(^\text{10}\). Eventually, the IT Governance needs to have a clear goal of what is going to be achieved by it. IT governance system which based on the IT organization’s experiences of IT management and control activities. And presented the hypothesis related to prove of what role the functions of ITA through the relationship between factors extracted play. They were verified through questionnaire. And will be suggest the alternatives of IT policies\(^\text{11}\).

**Research Model and Method**

There are various opinions of researchers about the core domain of IT Governance. The US IT Governance Institute (ITGI) is suggesting the outcomes as the value delivery of IT and risk management, while drivers as the strategic alignment, resource management and performance management and COBIT 4.0 (Control Objectives for Information and Related Technology 4.0) (2005) suggested four area process domains, (34) IT processes and (318) detail control targeted IT Governance framework structure from previous Audit, Control Management point of views. IT Governance Design Framework maps the harmonization of enterprise strategy and organization, IT governance arrangements and business performance goals. The hypothesis has been set as follows:

Hypothesis 1, The IT infrastructure management among the functions of ITA in organization impacts to building of IT Governance positively. Hypothesis 2, The IT technology system enhancement among the functions of ITA impact to building up of IT governance positively. Hypothesis 3, The IT performance system among the functions of ITA in organization impact to building up IT governance positively.

**Data Analysis and Result**

The questionnaire was distributed and collected from the public corporate, private enterprises during (Oct.1 to Dec.31 2011) and the responsible person in charge of civil section. The respondents are consisted of functional factor of ITA and of IT governance. To increase the accuracy of census, the questionnaire was carried out by utilizing the response in use of not only postal questionnaire but also through e-mail or cyber space. Total responses giving answer to the questionnaire were 350cases. However, in the questionnaire presented as scale of 5 points, the answers judged into unfaithful in the content as giving the constant answer over many question points are excluded, and 320cases of total data are utilized for statistical process.

Table 1—Regression analysis of independent variable and resource mgt.(F=52.373, sig.=.000)

<table>
<thead>
<tr>
<th>Result Factor</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Sig. interval about B</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td>2.763</td>
<td>.007</td>
<td>.174</td>
</tr>
<tr>
<td>IT infra management</td>
<td>.132</td>
<td>.090</td>
<td>.135</td>
<td>1.364</td>
<td>.168</td>
<td>-.048</td>
</tr>
<tr>
<td>IT technology system</td>
<td>.299</td>
<td>.085</td>
<td>.308</td>
<td>3.615</td>
<td>.000</td>
<td>.135</td>
</tr>
<tr>
<td>IT performance system</td>
<td>.318</td>
<td>.073</td>
<td>.305</td>
<td>4.124</td>
<td>.000</td>
<td>.160</td>
</tr>
</tbody>
</table>

(R**2: .436, adjustment R**2: .424, DW: 1.587)

Table 2—Result of regression analysis of independent variable and IT process& service mgt

<table>
<thead>
<tr>
<th>Factor of accomplishment</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Sig. interval about B</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td>5.600</td>
<td>.000</td>
<td>.767</td>
</tr>
<tr>
<td>IT infra management</td>
<td>.322</td>
<td>.087</td>
<td>.328</td>
<td>3.543</td>
<td>.001</td>
<td>.127</td>
</tr>
<tr>
<td>IT technology system</td>
<td>.256</td>
<td>.077</td>
<td>.276</td>
<td>3.389</td>
<td>.002</td>
<td>.118</td>
</tr>
<tr>
<td>IT performance system</td>
<td>.072</td>
<td>.070</td>
<td>.066</td>
<td>.911</td>
<td>.348</td>
<td>-.085</td>
</tr>
</tbody>
</table>

(R**2: .611, adjustment R**2: .437, DW: 1.792) F=52.659, sig = 000)
"IT process and service". The value of VIF related to the verification of multi-collinearity in the multi-regression analysis was above 2.142, and the value of DW related to verification of independent of remained difference also approached to 2 (1.792) so it has been decided as acceptable. The regression coefficient (R-square) of the model of multi-linear regression in the way entering with the method choosing in step wise three factors related ITA, as a dependent variable as "IT process and service" was 0.611, and the model was attentive in statistics (degree of freedom =305, F= 52.659, Sig =.000). The variable having attentive impact to the factor of IT process and service" in statistics was factors as IT infra management & IT technology system. The test shows the arranged result of hypothesis verification on the base of analysis result like this. The result of the hypothesis test indicated a significant, strong and positive association for hypothesis. Therefore, it was accepted and the null hypothesis was rejected. Thus, there exists the likeliness of increased function with increased of IT governance. The positive correlation between the IT variables and IT governance practices concepts. They were consistent with the rational of the situation as a practice of IT governance. It will lend itself to its practice in an organization.

Table 3 shows the arranged result of hypothesis verification on the base of analysis result like this. The result of the hypothesis test indicated a significant, strong and positive association for hypothesis. Therefore, it was accepted and the null hypothesis was rejected. Thus, there exists the likeliness of increased function with increased of IT governance. The positive correlation between the IT variables and IT governance practices concepts. They were consistent with the rational of the situation as a practice of IT governance. It will lend itself to its practice in an organization.

**Result and Discussion**

The enterprises with effective governance have actively designed a set of IT governance mechanisms that encourage behavior consistent with the organization’s mission, strategy, values, norms, and culture where IT can factor significantly into competitive strategy with business strategy. Financial services firm was pursuing a cost reduction strategy rather than create a comprehensive set of mechanisms that would encourage cost saving which relied on a new chargeback system to curtail demand for IT services. When the chargeback system led to bickering among IT and business managers, the CIO assigned relationship managers to restore internal customer satisfaction. They improve satisfaction scores but did not lower IT or business process costs. Without a cohesive IT governance design, enterprises must rely on their CIOs to ameliorate problems through tactical solutions rather than position IT as a strategic asset. This research revealed that top-performing enterprises governed IT differently than did other enterprises. Mindful of competing internal forces, the top performers designed governance structures linked to the performance measure on which excelled, thereby harmonizing business objectives, governance approach, governance mechanisms, and performance goals and metrics. It is observed that good governance design allows enterprises to deliver superior results on their IT investments and effective IT governance is the single most important predictor of the value an organization. An increasing number of companies are considering applying IT governance as part of their business management activities to avoid risks and improve competitiveness to achieve business goals.

**Conclusion**

This research assist the IT governance into the organization in the view of ITA function, which would function as variety of ITA that impact to build up the IT Governance. When looked into the contents detailed of research model considered the variable, it showed the contents that the factors of ITA functions including "IT infra management", "IT technology system", and IT performance system". In the result of statistical verification with respect to the hypothesis, there appeared the fact that the IT Technology (B=0.299) variable and "IT performance system" (B=0.318) variable impact attentively to IT resource management, and in the same, the IT infra
management" (B=0.332) variable and "IT technology system" (B=0.256) variable also impact to the "IT process and service". Accordingly, by raising up the level of "IT, IT infra management", "IT technology system", and "performance system" through introducing the ITA into organization, it is judged that the effect of building up of IT Governance system would be increased. Also if we make an effort over the infrastructure systematization, which is asset of IT, the raising up in the level of IT service management among the regions of IT Governance would be expected. It is found that:

1. Effective IT governance requires a significant amount of management time and attention.
2. Good IT governance pays off.
3. It is expensive.
4. IT is pervasive.

Increasingly, today’s corporations and public sector bodies are becoming dependent upon IT, not just to support the traditional activities of the business but also to enable it to extend into new areas. Within many sectors, that dependence is becoming virtually total. At the same time, expenditure on IT and its supporting activities have grown to the extent that, within many businesses, the level of IT-related costs is second only to that of staff costs. Given the volatility of a portfolio of IT-related business projects, it is essential to embed active portfolio management into the organization to maximize value creation and minimize the risk of value destruction. As with any aspect of IT governance, to be successful, the process needs visibility, leadership and commitment from the top.

References