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Effective IT Governance Implementation with Vital Determinants

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Abstract: According to company oversight in contemporary business, IT performs as the foundation of business operations in most organizations with worldwide promotion in IT governance implementation. Based on the universal research papers, there are various IT governance frameworks with different outcomes of IT governance implementation. Most results are reported only success and failure which haven't yet cleared. With regard to insufficient information, it is complicated to identify. This research aims to benefit the proposed research framework by presenting the constituent elements in IT governance implementation which reflects a structural, top-down understanding between organization, people, and IT in gaining better internal relationships within organization. The Duality of Technology (Orlikowski et al. 1991) and the Adaptive Structuration Theory (DeSanctis et al. 1994) are selected to develop the proposed research framework to deliver a proposed research framework for investigating effective IT governance implementation.

Keywords: IT Governance, Duality of Technology, Adaptive Structuration Theory, Performance Evaluation, Organizational Maturity.

1. Introduction

Governance is a recognized business term which maintains the benefits of stakeholders, as well as, reviews the performance management, operational activities, and role of board of directors and executive management (Fama et al. 1983). Governance contains accomplished organizational objectives and examining operations (OECD 2004). Corporate governance is a group of processes, practices, policies, regulations and associations, along with relationships among various stakeholders and organizational objectives, which influences to the pathway of organizational management (Kooper et al. 2011). According to the importance of information technology (IT) in organizations, it is gradually rising with high demand to follow accredited compliance initiatives, deploy IT infrastructures and IT activities in organizations as the basis of local and international business processes to support business productively and rapidly (Weil et al. 2004). IT governance is a subclass discipline of corporate governance which is concentrated on IT systems, operations, and risk management (Kooper et al. 2011). In modern enterprise environment, it is highly beneficial in implementing effective IT governance with significant administrative performance (Berghel 2005; Pennington et al. 2007). Thus, IT governance is highly dynamic solution to strengthen organization and empower responsible people to operate their performance management effectively.

Even more, IT and business always concern that IT governance is a technique in aligning business and IT with high investment costs as it is a complex solution to understand and control (Chan 2002); it is a solution which is risky (Ciborra 1997); and ambiguous due to changing technology (Maes 2007). Unfortunately, there is no prompt solution to follow and it is not easy to implement IT governance effectively. Currently, there are various frameworks (Cobit, ITIL, and ISO/IEC 17799) and different explanations of IT governance without fully investigation (ITGovernanceInstitute 2006; ITGovernanceInstitute 2008). Fur-

ther, many organizations are still on-the-run and struggling in IT governance implementation successfully (De Haes et al. ; Ernst&YoungLLP 2006; Iskandar et al. 2010). However, the methods and processes of IT governance frameworks in achieving IT-business alignment are tentative and subject to change. Referring to IT infrastructure implementation (hardware and software), most organizations always encounter dissimilar problems during implementation which require solving these problems step by step (Shaw 2002). User, environment, organization, task, and technology are the main factors which affect IT implementation in IT governance and influence the achievement of IT-business alignment (Kwon et al. 1987b). Due to the problematic nature of these factors, they mainly occur as the results of unclear and indistinguishable relationships which are assigned among them. Human cognitive abilities (Griffith et al. 1996) requires in supporting in the use of IT which are concerned as top requirement in IT (Benamati 1997). Therefore, these problems are the significant issues in information systems (IS) research. On top of that, the publications in IT governance with the investigation in ITIL implementation are very limited (Barlow et al. 2011; Hu et al. 2007; Schlichter et al. 2009; Williams et al. 2010). Most papers always identify different factors in IT governance implementation. However, it is crucial to study the relationships between these factors and organizational maturity (Fairchild 2008; Olyaee 2009; Yuwono et al. 2009) or performance evaluation (Borousan et al. 2011; EDUCAUSE 2008) as they are significant aspects in a holistic view in adopting advanced IT. This research aims to identify these restrictions by presenting the research framework to examine factors attracting the effective IT governance implementation. The research framework is proposed by integrating the critical success factors in IT governance implementation and recognized theoretical frameworks of the Duality of Technology

model (Orlikowski et al. 1991; Orlikowski 1992; Orlikowski 2000) and the Adaptive Structuration Theory (AST) model (DeSanctis et al. 1994). The comprehensive range of relative factors and prospective influences of effective IT governance implementation will be emerged from the integration of these two models.

This is a research-in-progress paper which is initially created to prepare a plan in implementing IT governance by starting from: theoretical background, proposed research framework with discussion, and ending with the conclusion and future research.

2. Theoretical Background

Based on the Structuration Theory of Giddens (Giddens 1979; Giddens 1984), it has been altered to two models, which are the Duality of Technology model (Brooks 1997; Brooks et al. 2008; Orlikowski 1992) and the Adaptive Structuration Theory (AST) model (DeSanctis et al. 1994). Both of them focus on relationship quality. The Duality of Technology model mainly concerns social structures and interaction processes (Pozzebon 2004). On the other hand, the AST model emphasizes the relationship between IT integration with positive organizational performance results (Wu et al. 2006). Moreover, the relationship between IT and organizational results can be realized through the structuration perspective (Orlikowski 2000), and the IT structuration model (Orlikowski 1992).

2.1 Duality of Technology Model

According to more IT deployments with growing IT approvals, it is vital to organizations, in order to understand the method to implement IT investments effectively and utilize IT proficiently. The Duality of Technology model is the prominent framework, which has been used to scrutinize the relationship between IT and organization. Based on

the assumption of the Duality of Technology model, it is concerned as social interaction (Pozzebon 2004; Whittington 1992), with IT integration (Orlikowski et al. 1991; Orlikowski 1992; Orlikowski 2000) by examining the interactions between organization, technology, and people, along with, understanding the performance of each entity. Moreover, structural significance, structural legitimation, and structural domination are the three distinguished areas that organizations affect individuals by deploying, assimilating, and accepting technology into work processes, business activities, and strategies (Orlikowski 1992; Orlikowski et al. 1995; Scott 1995). So, these integrations are considered as structuring actions. They allow top management or organizational human resources management influence, lead, encourage, or even modify particular structuring actions. Then, they lead to emerge meta-structuring actions by strengthening or altering the current institutional structures with more encouraging to technology integration (Hossain et al. 2011).

After such events, there are four influences in the interaction between technology and organization which collaborate concurrently and unremittingly: (1) IT is concerned as the outcome of people performances due to they built, maintained, and used it, (2) people performance is supported by IT, (3) social/organizational contexts of influenced organizations require using IT, (4) organizational structures can be strengthened or transformed by IT (Joseph 2006; Orlikowski et al. 1991). Indeed, people and IT interactions affect relationship quality by engaging people performances in making more sense to achieve sustainable business operations (Orlikowski 2000). However, this theory requires more independent variables to intensify and embody by assimilating with the AST model to fulfill with more elements in human-IT interactions within organization.

2.2 Adaptive Structuration Theory (AST) Model

The AST model was adapted and was extended (DeSanctis et al. 1994) from the Structuration Theory (Giddens 1979) by elaborating more details and concentrating on influences of technology and people (social structures) with their performances, as well as, scrutinizing the relationships between structures within organization (DeSanctis et al. 1994; Lewis et al. 2003). Moreover, individuals can collect information, perceive, and recognize their particular performances and others (DeSanctis et al. 1994; Lee et al. 2012). By doing so, technology can adapt different performances and numerous activities through organizational structures (DeSanctis et al. 1994), and communication through internal interactions (DeSanctis et al. 1994; Güney et al. 2012; Poole et al. 1990; Poole et al. 1992; Poole et al. 1991; Taylor et al. 2007). This means people are more comfortable to integration with technology as it helps or facilitates organizational capabilities by employing expertise and intelligence of people. According to organizational change, the AST model is the key concept which allows people in organization use their perceptions and capabilities to work on advanced IT (Greenhalgh et al. 2010). Furthermore, the improvement of assimilated research framework and critical success factors are available in the following sections.

3. The Improvement of Research Framework

Referring to the Duality of Technology model (Orlikowski et al. 1991) and the Adaptive Structuration Theory (DeSanctis et al. 1994), This research aims to benefit the proposed research framework by presenting the constituent elements in IT governance implementation which reflects a structural, top-down understanding between organization, people, and IT in gaining better internal relationships within organization. In recent years, both of these models in the

Structuration Theory have been adopted in IT governance research by emphasizing on ITIL adoption (Barlow et al. 2011; Hu et al. 2007; Schlichter et al. 2009; Williams et al. 2010), and highlighting the intelligence of people which helps in communicating and interacting with IT and different factors within organization (Dong 2010; Dong 2011; Güney et al. 2012). To capture more factors of IT governance implementation in the Duality of Technology model, this research seeks to examine the close-up elements from influences of human interaction with IT by focusing on their relationships. Meanwhile, the AST model also proposes social interaction by using IT as the main support to interact between various relationships of internal operations. These could affect organizational maturity through performance evaluation as the outputs of organizational environment which embrace the performance of human and IT.
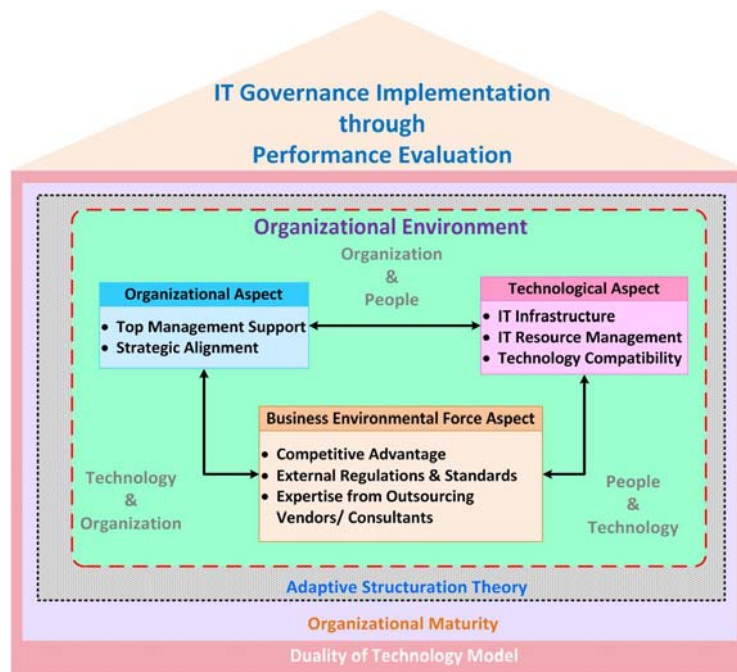

Figure 1.The Research Framework

Figure 1 depicts the proposed research framework by having the Duality of Technology model as the main theme prior to developing the framework. By doing so, it combines with organization, people, and technology, along with critical success factors from the AST model. In terms of the critical success factors, it is necessary to ensure that the well-matched connections exist which integrate with potential opportunities between organization, people, and technology. Starting from the organizational aspect, top management support and strategic alignment are fitted in this group. Meanwhile, IT infrastructure, IT resource management, and technology compatibility are drawn in technological aspect. Business environmental force aspect is the final group which contains competitive advantage, external regulations and standards, and expertise from outsourcing vendors or consultants. Next, the research framework and discussion are delivered in the following sub-sections.

3.1 Organizational Aspect

3.1.1 Top Management Support

Top management is considered as one of strategic foundations for business dynamics. Yet, it con-

tinues to perform as IT sophistication and IT competence which indicates organizational readiness in providing technological capabilities and human resources, in particular end-users through IT integration (Hossain et al. 2011). Moreover, IT knowledge and IT vision of top management lead to have IT adoption through IT integration successfully (Armstrong et al. 1999). Besides, top management can provide integral structures to encourage the use of IT (Kwon et al. 1987a). Especially, decisive political resources from top management helps in overcoming the resistance in the use of IT within organization (Howell et al. 1990). In turn, higher productivity is the outcome of IT integration from top management support (Rai et al. 2009). At this point, organizations must have robust top management support in IT governance implementation with higher levels of organizational maturity and good performance evaluation.

3.1.2 Strategic Alignment

Strategy is a combination of obligations and procedures which develops capabilities and increases competitive advantage by linking organizational structure to support its core business and beat competitors (Liao 2005). Moreover, strategic alignment is an on-going and long-term project, which focuses on the continuous change and strategic renewal of the organization (Chen 2008; Sabherwal et al. 2001), which provides some rationales in IT using to optimize business operations (Sawyer 2008), by integrating abilities of IT to increase business demands and easily examine from processes or acknowledge from results (Avison 2004; Reich et al. 2000). This leads IT and business managers can view strategic alignment on all dimensions of organization from top to bottom levels, through appropriate strategies that bring suitable technology, together with appropriate processes to improve business performance. Therefore, the organizational maturity and performance evaluation in IT

governance implementation could emerge in any organization which achieves strategic alignment.

3.2 Technological Aspect

3.2.1 IT Infrastructure

IT infrastructure is crucial to lead and implement technology successfully (Lee 2007). The scope of IT infrastructure is about the business activities in sharing and assisting IT working processes within and across organizations (Durmusoglu 2009). Basically, IT infrastructure is a primary structure which differentiates practical performance of organizations and, therefore, becomes the main focus of IT management (Broadbent 1999), which supports business requirements (Chanopas 2006). In doing so, it comprises with data architecture, communication networks architecture, and assists corporate applications, as well as, involves practical and organizational capabilities to support opportunities and distribute IT resources inside and across organizations (Bhatt 2000; Chanopas 2006). On top of that, it is divided into two areas, which are technical areas such as hardware, software, networks) and applications and human areas (such as knowledge and skills to handle and manage IT resources for organizations) (Chanopas 2006). The main point of IT infrastructure is to provide constant and rapid assistance for the whole organization to meet its requirements and also provide flexibility to respond incoming business orders in workplaces, processing forms, and applications (Bhatt 2000). Consequently, deploying fully equipped IT infrastructure in IT governance implementation will result an influential organizational maturity and formative performance evaluation.

3.2.2 IT Resource Management

IT resources (technology and applications), human resources (IT responsibility, IT management, IT training and knowledge), and business resources

(strategic planning with IT planning and alignment) are the three main mechanism of a resource based view of an organization (Teo 2003). Likewise, there are five characteristics of IT resources, which are: controlling customer costs; resource accessibility; technology license and rights; IT practices; and IT skills management (Teo 2003). IT resources allocation are well-lubricated factors, which provide well-supported to enable organization gain competitive advantage and lead projects successful (Liu et al. 2008). Thus, business and IT resources are vital to organizations to maintain and increase the progression of their organizational strategies. In addition, skilled and experienced people with higher education are imperative IT resources due to solving problems and complexities of organizations by employing their technical skills to complete the missions and move the business run systematically (Kim 2008). It, therefore, indicates that providing IT resource management in IT governance implementation will perform impressive organizational maturity and developmental performance evaluation.

3.2.3 Technology Compatibility

Technology can be both a remedy and hindrance at the same time by supporting people while creating troubles as well (Cook et al. 1996; Massimino et al. 1994; Webster et al. 2006). According to compatibility, it is the position where the new technology is properly placed within the current values, former practices, and existing requirements of prospective adopters (Blackburn 2011; Low et al. 2011; Rogers 1983). Rightly, compatibility has been studied as an important influence for innovation adoption (Cooper et al. 1990; Wang et al. 2010). It is not easy to predict tomorrow's technologies. As it happens, incompatible technologies nowadays seem to be more common. In contrast, such systems are neither sufficiently long lasting nor economical enough to invest in. Likewise,

they may not work as well as expected and demonstrated. They are not even efficient enough to work in some environments and in certain conditions. That, in turn, could lead to different user's perspectives and decision making affecting the transfer costs, pricing, and the development of product functionality. It, therefore, explains why organizations only seek to adopt compatible technologies. Hence, the growing organizational maturity and productive performance evaluation in IT governance implementation could be resulted in organizations which adopt compatible technologies.

3.3 Business Environmental Force Aspect

3.3.1 Competitive Advantage

Competitive advantage is considered as an organization which has beaten its competitors in the competitive industry by strengthening a better rate of economic and holding a healthier business within the business environment (Besanko et al. 1999). Moreover, strategy is the basis of competitive advantage and sustainability of all business activities (Minoja et al. 2010; Porter 1996). According to the growing capital's organization, advanced technology, and deeper expertise, they turn out the difficulties in managerial decisions (Chang et al. 2009; Nejati et al. 2010). It, therefore, emerges a proactive strategy when the business has potential competitive advantages (Garcés-Ayerbe et al. 2012; Sharma et al. 1999). Even more, the limit of perspective does not exist only the more shareholders, but the more stakeholder perspectives are also meaningful to their roles and the public (Nejati et al. 2009). Then, both key performances of shareholders and stakeholders must be indicated, examined, and involved with their firms (Cruz et al. 2006; Nejati et al. 2010). Consequently, Organizations are able to gain competitive advantage and beat their competitors by implementing IT infrastructure flexibility and align with strategy (Byrd et al. 2001).

And of course, organizations which already have IT governance in-place earlier than their competitors normally have a positive influence on organizational maturity and encouraging performance evaluation

3.3.2 External Regulations and Standards

Information Technology Infrastructure Library (ITIL) is an acknowledged approach for IT service management, employing a complex framework with multiple factors; ITIL may shape knowledge as well as engage in IT project friendly (Mohamed 2008). ITIL aims at the improvement of IT services and operations, through four components of Information Technology Service Management (ITSM) support services such as organization, staff, technologies, and processes to manage relationships between the different levels of an organization, and provide solutions to original problems, and identify services which are able to solve problems for businesses in different phases (Forte 2007). ITIL have been adopted in different organizations and requires stakeholders involved in the team to implement functions by supporting a logical approach to operate and enhance information technology services which aim to reduce costs, develop customer satisfaction, boost productivity and measure outcomes clearly. ITIL also addresses physical assets such as the service lifecycle linked with the project, adding value for an organization (Cervone 2008). ITIL implementation requires official agreement and unofficial management for maintaining and developing business objectives by following ITIL implementation adoption issues, such as IT services quality, costs control, labour and errors reduction, quick decision making, effective solutions, information accuracy, greater analysis and better model acknowledgement (Mohamed 2008). It, therefore, presents that organizations which meet external regulations and standards in IT governance implementation will benefit to have better organizational

maturity and improved performance evaluation because they feel that it is compulsory.

3.3.3 Outsourcing Vendors' and Consultants' Expertise

According to the complexities of IS, external vendors and consultants are important in technologies delivery (Bajwa et al. 1998; Ifinedo 2011). Further, organizations are grateful in their skills in supporting internal IT knowledge and service by providing on-going support in terms of updating, maintaining, and sustaining (Amoako-Gyampah 2007; Attewell 1992; Lee et al. 2004; Thong et al. 1996; Wang et al. 2008; Wu et al. 2007). On the other hand, they also operate as troubleshooting persons who assist and solve IT problems in particular areas which require exceptional knowledge and specific skills (Bajwa et al. 1998; Gefen 2004; Thong et al. 1996; Wang et al. 2008), especially most stand-alone IT systems (Ko et al. 2005; Markus et al. 2000; Sedera et al. 2003; Somers et al. 2003). Further, organizations have experts with abundant experiences at their sites in supporting IT systems and elevating information quality as they are reliable, dependable, cooperative, and knowledgeable (Attewell 1992; Gefen 2004; Ifinedo 2011; Markus et al. 2000; Ndubisi et al. 2003; Wang et al. 2008). Thus, organizations which hire outsourcing vendors/ consultants are likely to have high levels of organizational maturity with positive opportunities of performance evaluation in IT governance implementation.

4. Conclusion and Future Research

This research presents a proposed research framework to examine vital determinants which affect the effective IT governance implementation. In terms of research objective, the Duality of Technology model and the AST model in the Structuration Theory are selected to integrate and develop as the

proposed research model. This research chose both of these theoretical frameworks because they have been applied in the foregoing researches, in particular social interaction (Pozzebon 2004; Whittington 1992), with IT integration (Orlikowski et al. 1991; Orlikowski 1992; Orlikowski 2000). These lead to scrutinize people and IT interactions which affect their relationship quality by engaging people performances in making more sense to achieve sustainable business operations (Orlikowski 2000). Moreover, it identifies that technology can adapt different performances and various activities through organizational structures (DeSanctis et al. 1994), and communication through internal interactions (DeSanctis et al. 1994; Güney et al. 2012; Poole et al. 1990; Poole et al. 1992; Poole et al. 1991; Taylor et al. 2007). This research aims to benefit the proposed research framework by presenting the constituent elements in IT governance implementation which reflects a structural, top-down understanding between organization, people, and IT in gaining better internal relationships within organization. This appears to influence organizational maturity through the performance evaluation phase.

This research employs an interpretive perspective (Myers et al. 2002) to investigate comprehension, performance, and experience of participants who work in IT governance implementation areas. Inductive reason was engaged by using triangulation strategy for data collection with in-depth interview, along with, qualitative and quantitative data. Semi-structured interviews and survey questionnaires were selected to collect data of this research from Australian and Thai organizations which have implemented IT governance. At this stage, data analysis has not completed yet. However, the findings from this research will be disclosed further in the following publications.

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