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The Development of IT Governance Tactical Model

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Abstract: *This paper focuses on the development of IT governance (ITG) tactical model that is derived from a cross case analysis of four case studies conducted in Malaysia and Australia. The tactical model of ITG comprises four dimensions. The dimensions of clarifying expectations, establishing clear responsibility and accountability, fostering commitment and increasing IT capabilities are proposed as having practical utility for the management of ITG arrangements. The model is tentatively validated by practitioners using an online questionnaire survey.*

Keywords: IT governance, ITG tactical model, ITG implementation

1. INTRODUCTION

The use of IT in organisations is critically important to support organisational day-to-day operations so as to enhance the growth of a business. IT is not only important for the survival and prosperity of an enterprise, but also provides an opportunity to differentiate, conducing to competitive advantage. As IT is widely used in organisations, concern arises with respect to (1) how it can be used to its maximum potential in delivering business value as a source of competitive advantage; and (2) whether an organisation can receive adequate return on IT investment. IT governance (ITG) is not only about managing the technology, but also the decision making process which management takes to direct and control IT resources to align with the business' strategic goal. Previous research indicated that top performing enterprises, with clear business and IT strategies and appropriate IT accountability for IT usage, were able to generate returns on IT investment up to 40% greater than their competitors (Weill & Ross, 2004). Accordingly, firms with superior ITG have more than 25% profits as compared to companies with low ITG (Weill & Ross, 2004).

The literature cited thus far acknowledges that each organisation has its own ITG, but the arrangements vary across organisations. This variation is seen as resulting from unique factors in ITG implementation, as well as the need to respond to the environment within which an organisation exists (Brown & Grant, 2005; Lunardi et al., 2013; Sambamurthy & Zmud, 1999). Due to the above contingencies, a single optimal framework for ITG does not exist (Bowen et al., 2007; De Haes & Grembergen, 2008; Lunardi et al., 2013; McElheran, 2012; Pereira & Da Silva, 2012a, 2012b). Hsbollah (2015) through the study of ITG implementation in four cases in two for-profit and two not-for-profit organisations in Australia and Malaysia however, revealed that even though the companies have unique ways of implementing and maintaining their ITG, commonalities in the actions taken to support and strengthen their ITG implementation were visible. In her study, the author conducted an analysis of how the organisations implemented their ITG using the network analysis approaches (i.e., translation process and local/global framework) as the theoretical lens.

What has been lacking in literature thus far is the fact that none of actions taken for

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strengthening ITG implementation has been adequately examined and documented. Therefore, the emphasis of this paper is on extracting the strategies (actions) taken to strengthening ITG implementation that are found in the four cases to develop the ITG tactical model.

This paper will contribute to existing literature on the development of the ITG tactical model, which could complement several extant frameworks for guiding IT governance implementation, such as Weill and Ross (2004) and Van Grembergen and De Haes (2009). In this context, the ITG tactical model goes beyond a framework to specify the decision rights and accountability to encourage desirable behaviour in IT usage (Weill & Ross, 2004) and to implement the ITG processes, structures and relational mechanisms in the organisations(Van Grembergen & De Haes, 2009)

2. LITERATURE REVIEW

Despite not having a uniform definition of ITG, researchers generally agree that ITG includes three important facets; (1) who is entitled to make the decision; (2) who is accountable for implementing the decision; and (3) what is the objective of the decision. Decision-rights and accountability are related to the role of Board of Directors, executives and senior management (i.e., top management). Meanwhile, the objective of the decision refers to the achievement of business value, improvement of organisational performance and minimisation of risks. The comprehensive definition of ITG is provided by Van Grembergen and De Haes (2009, p. 3) as "an integral part of corporate governance and addresses the definition and implementation of processes, structures and relational mechanisms in the organisation that enable both business and IT people to execute their responsibilities in support of business/IT alignment and the creation of business value from IT-enabled business investments".

Two major frameworks for understanding IT governance implementation are prominent in the literature. Firstly, Weill and Ross' (2004) framework focuses on three different types of IT governance mechanisms. These are decision-making structures, alignment processes and communication approaches. Secondly, Van Grembergen and De Haes' (2009) framework highlights a set of governance arrangements of structures, processes and relational mechanisms. The structures focus on the authority and responsibility in IT decision-making and the processes concentrate on the techniques and procedures to assist the governing processes. On the other hand, the relational mechanisms look into the ways in which an effective ITG implementation can be achieved.
The similarities in Van Grembergen and De Haes' and Weill and Ross' frameworks in promoting proper mechanisms for ITG implementation can be seen in terms of having structures and processes for guiding the decision-making process. However, the communication approaches described in Weill and Ross' framework are limited only to promoting the governance decisions, processes and related desirable behaviour in organisations. In contrast, in Van Grembergen and De Haes' (2009) framework, communication is included as part of the ITG relational mechanisms. Relational mechanisms are derived from the social perspective of ITG that focuses on promoting active participation and collaboration between the IT and business people, which is to support the ITG structures and processes that are already in place.

3. MODEL DEVELOPMENT

The ITG tactical model is developed based on the strategies extracted from the case studies (i.e., in two for-profit and two not-for-profit organisations in Australia and Malaysia) of how their ITG implementation was strengthened using actor network theory as its analytical lens. The findings provided ITG implementation trajectories for the four organisations (see Figure 1).

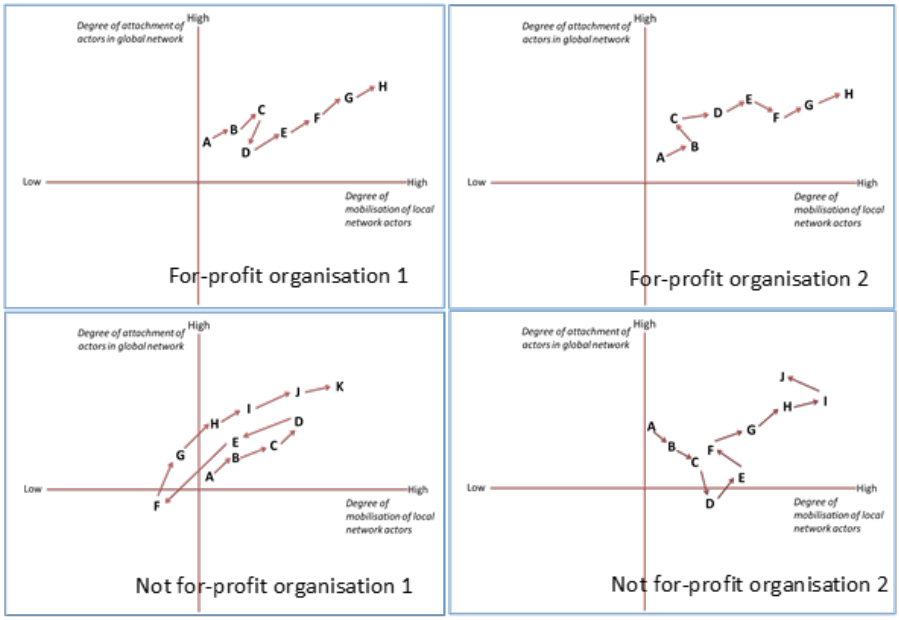

Figure 1: The result of cross case analysis of four organisations

Despite the four organisations' unique ways of implementing and maintaining their ITG, commonalities in the actions taken to support and strengthen their ITG implementation were visible (Points A to K in Figure 1). Hence, the cross case analysis focused on comparing and analysing the four trajectories to find the patterns and connections between the trajectories, allowing the factors to emerge from the data. The names of the factors derived from this cross case comparison is based on the actions (strategies) taken by the ITG actors. The strategies were (1) analysed in terms of their contextual characteristics; (2) grouped and mapped together into themes to represent the core meaning of the approaches; and (3) extracted to produce the factors that contribute to the strengthening of the ITG implementation trajectory. Based on the abstraction of these actions, the following four prevalent themes emerged, namely clarifying expectations, responsibility and accountability, fostering commitment and increasing IT capabilities.

The model suggests how the identified factors could help organisations to maintain stable ITG to support business operations. The model is depicted as a circular pie chart diagram to demonstrate the interconnections between each of the ITG tactical approaches. Each of the tactical approaches, however, are independent and flexible (i.e., not mandatory). For this reason, organisations can match a relevant tactical approach to their specific environment.

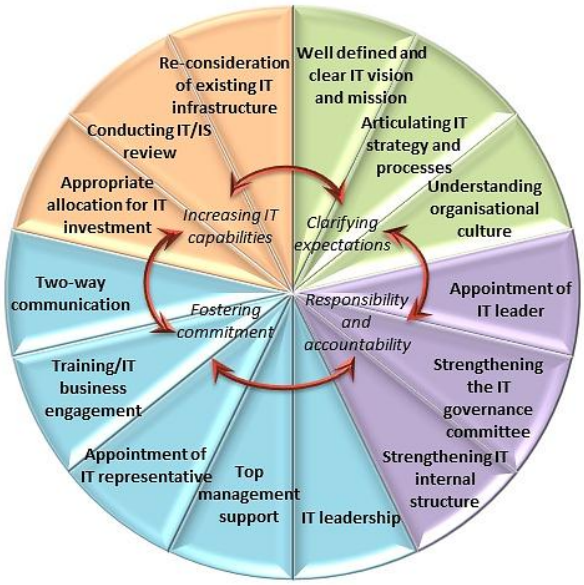

Figure 2: A proposed tactical model to guide ITG implementation (i.e., ITG tactical model)

Clarifying expectation:
Clarifying expectations is important in the process of governing IT because it removes misunderstanding and clears up ambiguity of the role of IT in supporting business operations. It is important because it could minimise the potential of "IT attention deficit" (Huff et al., 2006).

(a) Well defined and clear IT vision and mission
A well defined and clear IT vision and mission can be used to convey the IT direction and its linkages with business vision and mission for the achievement of strategic alignment and to define the tools that are needed to support their business operations.

(b) Articulating IT Strategy and Processes
Organisations should articulate the IT strategy and its related processes in a formal written statement as a means to pull everyone in the same direction. The finding is consistent with Reich and Benbasat (2000) who suggest that business objectives, either in the form of a written plan or articulated by management are a necessary pre-condition for alignment.

(c) Understanding the Organisational Culture
Understanding the organisational culture was added under the theme of clarifying expectations based on Martins & Terblanche's (2003) argument that culture can have influence on mission and vision, external environment, means to achieve objectives, image of the organisation, management processes, employee needs and objectives, interpersonal relationships and leadership. Understanding the organisational culture is identified as one of the most relevant contingency factors that must be considered by organisations before ITG implementation (Pereira & Da Silva, 2012a).

Responsibility and Accountability:
Having clear structures in the governance committee and IT units together with the appointment of the IT leader, help organisations to set up specific roles and provide a clear line of control and reporting. It assists people within the structure to understand how their roles can contribute to the achievement of positive business performance.

(a) Appointment of IT leader
The importance of the appointment of the IT leader is highlighted by Chen et al. (2010). According to these authors, the CIO needs to have the ability to translate the business objectives into a clear and measurable IT expectation that could significantly influence how IT could deliver its value to the business.

(b) Strengthening the ITG Committee
This study uses the more general term of ITG committee to reflect various committees that are involved in ITG. The use of this general term is important because its existence is optional (i.e., not mandated), depending on various factors such as size and the intensity of IT usage in the organisations. This claim concurs with Chan (2002, p. 104), who draws a conclusion that IS steering committees were not always necessary because "… different organisations might successfully achieve structural alignment in different ways... they cannot be forced into standard, straightforward molds".

(c) Strengthening IT internal structure
The findings from the cross-case analysis highlighted that all of the newly appointed IT leaders introduced a new IT organisational structure as an effort to build a better IT team in the organisations. By strengthening the internal IT structure, the IT leader could determine and allocate the right people to the right job.

Fostering commitment:
Commitment is essential for building determination among IT staff and business people. It leads people to take responsibility for completing their tasks efficiently and to engaging in positive behaviour during the implementation of IT-related projects.

(a) Two-way Communication
Communication is regarded as essential in encouraging IT desirable behaviour in organisations (Weill & Ross, 2004). This study suggests that two-way communication is a tactical approach that can be used by management to strengthen their ITG. Two-way communication includes upwards, downwards and lateral communication that enables positive relationships between all ITG players and for the build up of trust (Fielding, 2006).

(b) IT Leadership
The findings in this study showed that each of the IT leaders had a different IT leadership style. It is highly dependent upon the specific organisational context, and the maturity level of their followers (Hersey et al., 1979). Hence, no single leadership style is effective and can be generalised to all IT situations (Thite, 2000).

(c) Top Management Support
Top management support has been widely accepted by researchers as one of the most important critical success factors in IT related areas, such as SISP (Kearns, 2006; Lee & Bai, 2003)and IS projects (Boonstra, 2012). Prasad et al. (2010) and Weill and Ross (2004) found that top management support is one of the most important success factor in ITG.

(d) Appointment of IT Representative
The findings from the cross case analysis suggested that appointment of the IT representative is one of the tactical approaches that can support an effective ITG implementation. Appointing a representative to represent the interests of a group of actors is crucial in making effective IT decisions (Bowen et al., 2007).

(e) Training/IT Business Engagement
Training/IT business engagement can be achieved through a combination of formal and on-the-job training methods, such as job rotation and cross-training (Powell & Dent-Micallef, 1997) and should be commenced as early as possible prior to the implementation of any new IT projects (Umble et al., 2003). Training can also be used as a tool to enhance and promote engagement between IT and business people.

Increasing IT Capabilities:
IT capabilities allow the organisations to innovate and exploit their IT resources for the achievement of competitive advantage (Liang et al., 2010). This study suggests that the organisation can fully exploit their resources in order to generate their very own, or unique, capabilities through the three tactics of considering existing IT infrastructure, appropriate allocation for IT investment and conducting IT/IS review.

(a) Re-consideration of Existing IT Infrastructure
Re-consideration of the installed base of the IT infrastructure is important for organisations to ensure that their existing IT infrastructure is compatible with the new one. Careful planning of its development and maintenance is essential because IT infrastructure has a tendency to drift from its original purposes, as a result of improvised usage (Ciborra, 1997, 2000, 2004; Ciborra & Hanseth, 2000). The installed base of the IT infrastructure needs to be considered to ensure related risks, such as an interruption in business production, are mitigated.

(b) Appropriate Allocation for IT Investment
Organisations need to ensure that their allocation of IT investment is appropriate because overinvestment in IT infrastructure could result in wasted resources, while underinvestment could lead to limited integration and information sharing across business partners (Weill & Ross, 2004). Hence, making the right IT investment decision is important for organisations to maximise their return on investment.

(c) Conducting IT/IS Review
An IT/IS review is necessary to evaluate the IT/IS contribution to organisational performance and productivity. In the IT/IS review process, all aspects related to IT/IS can be reviewed, assessed and evaluated. The findings of the review could provide feedback that can be used to help organisations learn and understand the underlying factors leading to its success or failure (Serafeimidis, 2001).

4. RESEARCH METHOD

This study used a survey method to attempt to validate the ITG tactical model using empirical observation to represent the truth about the ITG phenomenon. Being exploratory in nature, the researchers did not identify independent, or dependent variables and the operationalisation of the items as variables for construct measurement (i.e., hypotheses testing). Here, a questionnaire was designed with the aim of validating the tactical model and to gather ideas and comments from the respondents for model improvement.

An online survey was selected. The online questionnaire was constructed by using Qualtrics Research Suite (Qualtrics). Qualtrics was used because it had various features that assist the development of the online questionnaire. During the distribution of the survey, Qualtrics provided an anonymous link, so that identifying information about the respondents could not be obtained. This was to ensure protection of the privacy of the respondents.

In this study a non-probability sampling design was instituted because the representatives from the selected associations

had agreed to administer the questionnaire on the researcher's behalf. This technique was considered to be the best way to collect data for this study because the representatives are bounded by the requirements of not disclosing their members' information to the researchers.

The populations of interest were the not-for-profit and global association of Information Systems Audit and Control Association (ISACA-Australian Oceania Chapters) and Australian Institute of Internal Auditors (IIA). The unit of analysis was individual members of ISACA and the IIA. Given the nature of this survey (i.e., exploratory), no attempt is made to generalise the findings to the selected population. Therefore, a combination of convenience and judgemental sampling was applied to select the potential respondents. In this context, the sample is purposively selected because of their convenient accessibility to provide useful information for the study (Creswell, 2012).

Due to the strategy taken that the link to the survey was distributed to the respondents in the ISACA and IIA newsletters, the total number of the population could not be determined. Hence, the response rate could not be calculated. Nevertheless, thirty three responses were received. This low response rate was due to the researcher's limited access to the respondents' email address.

All of the responses were keyed into the IBM SPSS Statistics. The analysis followed the suggestion made by Pinsonneault and Kraemer (1993), that simple statistics, such as frequency and mean are suitable for exploratory or descriptive research. Most respondents who participated in the survey were auditors (64%). Eighty five percent of the respondents were male. The majority of the respondents (88%) had held their current position for more than a year.

5. FINDINGS AND DISCUSSION

Due to the low response rate (i.e., thirty three respondents), only descriptive statistics were computed to analyse the data. Table 1 shows that the most frequent suggestion received from the respondents in order to improve the overall ITG tactical model was to integrate the formal ITG processes, by integrating ITG frameworks and tools, such as COBIT 5, and GTAG 17 (Global Technology Audit Guide on Auditing IT Governance). This suggestion was consistent with ITG literature on the use of a COBIT 5 as a comprehensive governance framework to understand and optimise the implementation of ITG in organisations (Abu-Khadra et al., 2014; Al Omari et al., 2012; De Haes et al., 2013). This framework/tool was not incorporated in the original ITG tactical model because the four participating organisations developed their own mechanisms combining several frameworks/tools to support their ITG and business. However, considering the suggestions from the survey (Table 1), "formal ITG processes" will be included in the revised model.

Secondly, alignment between the IT strategy and business strategy was also suggested for inclusion in the model to reflect the positive impact of ITG. The findings from the case studies however, did not explicitly frame strategic alignment as a tactical or strategic action. The alignment between the IT and business strategy was implied as a part of the *inscription* that was viewed as a result (i.e., benefit) of ITG implementation. Nevertheless, considering that strategic alignment had a frequency count of 4 and its important has been widely cited in IS literature (e.g., Chan et al. (2006); and Schlosser and Wagner (2011), strategic alignment will be included in the adjusted ITG tactical model.

Lastly, the suggestion was to include the encouragement of active participation in the governance process. An active participation among ITG players in the governance process was referred to as the ITG relational mechanisms. It covers the items under the theme fostering commitment, such as two-way communication, training/IT business engagement and appointment of IT representatives. Given that the frequency count for active participation was relatively low, this suggestion was not included in the adjusted ITG tactical model.

Table 1: Suggestions to improve the overall ITG tactical model

Category	Frequency
Integrate the formal ITG processes to improve the model	5
IT strategy should be driven by business to support strategic alignment	4
Encourage active participation for the governance process	3

6. CONCLUSION

This study develops a model which provides organisations with a tactical approach for implementing ITG. The four themes embedded in the model could be used as a focal lens to design, manage or evaluate existing ITG arrangements in an organisation for better ITG implementation.

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