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THE UTILIZATION OF COBIT FRAMEWORK WITHIN IT GOVERNANCE: A STUDY OF LITERATURE

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ABSTRACT

Recently, the requirement of managing Information Technology (IT) resources properly is necessary for any organizations. Organizations that are able to manage their IT resources effectively and efficiently will have more competitive edges. As a result, an effective planning should be outlined in order to manage IT resources and this will bring some benefits to the organizations as a whole. In order to optimize the role of IT in various areas, organizations should have efficient IT governance and they should apply the principles of effective governance.

The purpose of this paper is to investigate the COBIT (Control Objectives for Information and related Technology) framework utilization in the IT governance context in organizations around the world based on the types, sizes and the places/locations of the organizations. The investigation will be conducted by adopting a positive ontology and epistemology methods. The analysis in this study will be carried out by using a quantitative descriptive approach.

Keywords: Information technology, COBIT, good governance, IT governance, UMS library, database

INTRODUCTION

In most organizations, Information Technology (IT) has a crucial role in managing the transaction, information and knowledge (Kordel, 2004). The strategic role of IT is required to support, maintain, and develop economic activities of business. As a result, the board of directors and executive management need to be able to utilize, manage and understand the strategic role of IT in the organization's agenda.

In order to execute the strategic role of IT, it will require a strong synergy from all components of organizational resources. These resources consist of structures, processes and mechanisms of the relationship (Haes & Grembergen, 2004, 2009). Furthermore, the board of directors and executive management of these resources must be briefed and convinced about the goodness of a strategic role of IT in order to expand the strategy and support the objectives of the organization towards good governance.

(ITGI, 2011) has identified that an organization will realize the significant improvement over the existence of IT, either directly or indirectly in contributing to business success. This article studies and explores the question on how many organizations around the world feel that the presence of IT contributes to the success of the organizations.

This paper consists of five sections related to IT governance. This paper starts by describing the concept of IT governance, and then it discusses about the scope and framework in IT governance. Next, the COBIT (Control Objectives for Information and related Technology) framework will be outlined. Finally, some findings related to the usage

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of COBIT framework will be outlined and this paper is concluded with a short discussion about the results obtained.

IT Governance

An IT governance policy is usually outlined and amended by the board of directors and executive management. It is part of enterprise governance which consists of the leadership structures, processes and mechanisms in order to ensure that the IT strategic role is aligned with the organizational goals (Haes & Grembergen, 2009; ISACA, 2012a; ITGI, 2003).

Meanwhile, (Hardy, 2006a; Posthumusa & Solms, 2005) outline that an IT governance is the "policies and procedures that determine how the organization will direct and control the use of technology resources, so that these resources can be managed to facilitate the realization of the organization's business objectives."

In essence, IT governance has a key target for supporting enterprise governance (Rouyet & Joyanes, 2009). A survey conducted by the IT Governance Institute in the report "Global Status Report on the Governance of Enterprise IT (GEIT)" revealed that 834 respondents from 20 countries claimed that the implementation of IT governance has a high priority for the organization (ITGI, 2011). This suggests that an IT governance is a must to be applied within an organization, especially at this time in which technology has become a key business enabler and has worked to improve corporate profits and shareholder value (ISACA, 2012c). Therefore, it can be said that IT governance is a form of the tool that consists of policies and procedures that are useful in terms of controlling the technological aspects of the organization under the responsibility of the board of directors and executive management, which aims to align IT management with organizational goals. So it will be able to bring specific and global benefits to the organizations.

IT Governance Focus Area dan Framework

The most important factor that needs to be considered in implementing the IT governance is that it must be aligned with organizational goals. Therefore, we need some guidance in implementing the IT governance. This guide is also a standard guideline used in any organizations in any area of IT governance implementation.

Subsequently, this guidance must be consistent with the organization's specific needs. The specific requirements are related to organizational structure, processes, mechanisms and relationships. The following are links between guidance with a focus on IT governance activities and scope, so that the intentions to be achieved by an organization in implementing IT governance will be well targeted and measurable.

IT Governance Focus Area

According to (Hardy, 2006a; Institute, 2007; ITGI, 2003), IT governance needs to have attention on the following areas:

- *Strategic alignment*; focus on ensuring the relationship between IT and business objectives in a planned manner. Planned in terms of being able to define, maintain and validate the value proposition of IT, and align IT operations with the operations of the organization. (Haes & Grembergen, 2004) illustrate that many organizations start implementing IT governance by setting the alignment of the strategy. This is to indicate the focus of IT governance on IT alignment with the specific objectives of the organization.
- *Value delivery*; focus on running the whole value proposition in the delivery cycle, ensuring that IT delivers the promised benefits against the strategy, concentrating on optimizing costs and proving the intrinsic value of IT. (Hardy, 2006b) highlights that the

focus on value delivery will provide clarity in the scope of IT governance, particularly on the application of effective use of funds and return on IT investment.

- *Resource management*; resources in the IT consist of application, infrastructure, personnel, processes and information as also part of the organization's resources. Therefore, these IT resources should be managed, targeted and measurable. Furthermore, a framework will have the resource management function. Not only that, a good framework also includes the function of a holistic approach that clearly separates the components of the governance and management (ISACA, 2012a).
- *Risk management*; is specially intended to address the risks faced by management in IT management, particularly bridging the gap between general management with IT management (Bakari, Tarimo, Yngstrom, Magnusson, & Kowalski, 2007).
- *Performance measurement*; focuses on measuring the performance of IT management. Measurements are performed by using a tool such as BSC (Balanced Scorecard), as standard measurement which is internationally used (Haes & Grembergen, 2004). Specific objectives of this activity to get the organization's position in the use of IT by showing the current state (*as-is*) then become the input for the management to make improvements towards higher (*to-be*).

(ITGI, 2007) declares that the scope of IT governance will provide an overview of the organization, which area that needs to get the attention of executive management. Meanwhile, guidance is used to provide appropriate technical illustration related to IT management. In consequence, the direction and IT management objectives can support specific business strategies as well as objectives of the organization comprehensively.

IT Governance Framework

Currently many international-standard frameworks that have been published to support the organization to implement IT governance such as COBIT 4.1, Val IT, Risk IT, and BMIS - Business Model for Information Security, ITIL - Information Technology Infrastructure Library, TOGAF - The Open Group Architecture Forum, PMBOK - Project Management Body of Knowledge, PRINCE2 - PRojects IN Controlled Environments 2, COSO - Committee of Sponsoring Organizations of the Treadway Commission, and ISO - International Organization for Standardization).

One of the widely used frameworks is the COBIT (Control Objectives for Information Technology related) issued by ITGI (IT Governance Institute). (Hardy, 2006b) highlights there is a strong relationship between IT governance and COBIT as a framework. This is because, COBIT provides generic guidance that can be used by the organization in terms of (1) obtain and process information related to the organization under control, (2) monitor the achievement of organizational goals, (3) monitoring performance within each IT process, and (3) benchmarking organizational achievement.

In order to support the successful management of IT within an organization it should be related to IT governance. Recently the ITGI COBIT has been published as a framework for managing IT. (ISACA, 2012b) assumes that the basic conceptual framework as a structure that is used to solve or resolve complex problems; set of enablers of government; a set of concepts, assumptions and practices that define how things can be approached or understood, the relationship between the entities involved, their roles involved, and provide constraints in the approach to the problems associated with IT (what is and is not included in the system of government).

It can be interpreted that the focus area and the framework is a unity that can not be separated in the domain of IT governance. The scope of IT governance provides a work area that must be considered by the relevant executive management of IT management.

Meanwhile IT governance framework provides certainty to the organization of the framework as a basic conceptual structure that is useful to overcome the complex IT issues. The IT governance framework contains a set of concepts, assumptions and best practices (good practices) that are useful to define connectedness and role related entities.

This article also reviews COBIT as one of the framework of international standard that is widely used by organizations around the world in the context of IT governance. In general, COBIT provides a guide for managers, auditors and users of IT (Abu-Musa, 2009; Council, 2006). COBIT contains guidance of the steps of a general nature to help maximize the benefits of within IT management and development of IT governance in accordance with the needs of the organization.

COBIT

COBIT (Control Objectives for Information Technology related) now has reached version 5 which is a comprehensive framework for governance, management and information technology assets (ISACA, 2012a, 2012c). COBIT 5 is developed based on the previous version (ISACA, 2011) prepared by the ITGI, which is part of ISACA (Information Systems Audit and Control Association) in 1996. COBIT has been published four times. The first version was published in 1996. The second and third version was published in 1998 and 2000. Then, the fourth version was published in 2005. The fifth version was recently launched in April 2012 (ISACA, 2012a, 2012c; Lainhart, 2012).

COBIT as a framework has gained global recognition in terms of effective IT management (Gondodiyoto, 2007; Hardy, 2006a). COBIT is created with the aim to assist organizations in creating an optimal value of the use of IT as well as maintaining a balance between the benefits to be obtained by optimizing the risk that the use of resources related to the management of IT (ISACA, 2011, 2012a; ITGI, 2011).

COBIT 5 which is the latest version is generic and can be used by all types of organizations. Clearly, COBIT has been used for over 15 years in many organizations, both profit and non-profit sectors. For many organizations, the use of COBIT is intended to reduce the risks associated with information technology and to increase confidence in the information technology generated. The use of COBIT in an organization has some roles such as: (1) The creation of value through the use of effective and innovative IT within the organization, (2) user satisfaction of IT in business and services, (3) Compliance with laws, regulations, contractual agreements and internal policies , and (4) Improved relationships between business needs and objectives of IT (ISACA, 2011, 2012a; ITGI, 2011).

However, since COBIT 5 is published, a number of guidelines made by ISACA as COBIT 4.1, Val IT, Risk IT, and Business Model for Information Security (BMIS) has put together. Indeed, COBIT 5 has seamless integration with other frameworks. The integration is between COBIT 5 with other frameworks such as the ITIL (Information Technology Infrastructure Library), TOGAF (The Open Group Architecture Forum), PMBOK (Project Management Body of Knowledge), PRINCE2 (PRojects IN Controlled Environments 2), COSO (Committee of Sponsoring Organizations of the Treadway Commission), and the ISO (International Organization for Standardization). In addition, COBIT 5 also considers adopting the Business Model for Information Security (BMIS), IT Assurance Framework (ITAF), the publication titled Board Briefing on IT Governance, and Taking Governance Forward (TGF). This connection will provide an ease of understanding of COBIT as a framework (ISACA, 2012a; Lainhart, 2012).

John W. Lainhart IV, Vice Chairman of the Task Force COBIT 5 argues that the "COBIT 5 is based on the principles of sound corporate governance and will assist organizations in managing operational risk, compliance requirements and keep developing."

Therefore, COBIT 5 brings together the five principles that allow companies to establish effective governance. In addition, COBIT 5 also gives seven sets of enablers as a framework of information in a holistic approach taken by management. Principles and enablers category is useful to optimize technology investments for the benefit of stakeholders (ISACA, 2012a; Lainhart, 2012).

According to (ISACA, 2012a), the five principles of the COBIT 5 provide as a structure, guidance and tools to assist stakeholders. With these principles, the organization may be possible to build governance and effective management of IT organizations to optimize information and use of technology and investment for the benefit of stakeholders. These five principles are as follow:

1. P1 - *Meeting Stakeholder Needs*; the first principle serves to maintain a balance between the realization of the benefits and risks and optimization of resource use (ISACA, 2011, 2012a; ITGI, 2011).
2. P2 - *Covering the Enterprise End-to-end*; this second principle means that COBIT 5 is a framework that unifies the management of IT organization (enterprise governance of IT) into the overall governance of the organization (enterprise governance). This includes all functions and processes within the organization, and considers the internal and external factors related to the relevant IT (ISACA, 2011, 2012a; ITGI, 2011).
3. P3 - *Applying a Single, Integrated Framework*; third principle states that, COBIT 5 incorporates with a variety of other relevant standards into a comprehensive framework for good corporate governance and IT management. This is the consistency of the early ideas COBIT framework as an evolving standard (Council, 2006; Lainhart, 2012).
4. P4 - *Enabling a Holistic Approach*; fourth principle means that a holistic approach is used to achieve the goal of efficient management of IT companies and effective. In the approach, COBIT 5 also considers other components are called "enabler set". These enabler comprise of seven components namely (1) principles, policies and frameworks, (2) processes, (3) organizational structures, (4) culture, ethics and behavior, (5) information, (6) services, infrastructure and applications, and (7) people, skills and competencies (ISACA, 2011, 2012a).
5. P5 - *Separating Governance from Management*; the fifth principle states that, COBIT 5 separates different types of activities, organizational structure and service of a clear distinction between governance and management. The implementation of governance and management process consists of 37 guidelines, called the "Enabling Processes" and 242 KGP-key governance practices and KMP-key management process. This guide explains in details of each enabler in their respective fields in the governance and management. Enabler of governance contains EDM - Evaluate, Direct and Monitor. Meanwhile, management enabler area consists of APO - Align, Plan and Organize; BAI - Build, Acquire and Implement; DSS - Deliver, Service and Support; and MEA - Monitor, Evaluate and Assess (ISACA, 2011, 2012a).

The benefit of using COBIT is inseparable from the influence of development and COBIT IT governance itself since it is published. According to (Institute, 2008) the level of awareness and awareness of the importance of IT governance using the COBIT framework as a guide has exceeded 50% or 16% since 2005. The same thing is expressed in a survey conducted in 250 companies around the world stating that the level of awareness of the board of directors about the importance of IT increases by 25% (ISACA, 2012c; ITGI, 2011).

In addition to that, the survey also indicates the success of COBIT in several focus areas related to IT governance is as follows (1) 42% showed an increase related to improved management of IT risk, (2) 40% showed an increase in the communication function and the relationship between business and IT, (3) 38% indicated the use of lower IT costs, (4) 37%

showed an increase in IT delivery functions for business purposes, and (5) 28% showed improvement on the competitiveness of business (ISACA, 2012c; ITGI, 2011).

Generally, COBIT users can be divided into three categories. These categories are based on (1) types of user organizations which are categorized into profit, non-profit, public sector, (2) the size of the organization that are categorized into large, medium, small, and (3) the place or location of the organization that are categorized into five locations. The locations are the countries which consist of (America, Asia/Oceania, Europe, and Africa). Frequencies for each search results by category are recorded and then presented in calculation form.

Profit group consists of profit-oriented organizations, and non-profit organizations are grouped into a not-for material gains only. Meanwhile, the public made up of socially-oriented organizations including government agencies are not included in the profit group. The size was determined based on the number of employees that the organization has a workforce ≥ 1000 classed large, between $999 \geq 750$ and ≤ 749 were classified as medium and small category.

For the grouping based on the place or location of the organization, it consists of the USA including Latin American countries and Canada, Asia/Oceania including Australia, countries in continental of Europe, and countries in continental of African. These grouping are reflected the spread of COBIT users worldwide.

The grouping also exhibits that the COBIT framework is widely used by organizations of the IT governance or enterprise governance of IT (GEIT). This is in line with the mission of COBIT to "research, develop, publish and do promotion" for the control of IT governance (Lainhart, 2012). It is revealed that COBIT has been developed and lasted for 15 years. This shows the existence of COBIT is internationally recognized. The main use of COBIT is to help organizations achieve IT management (Bakari, et al., 2007).

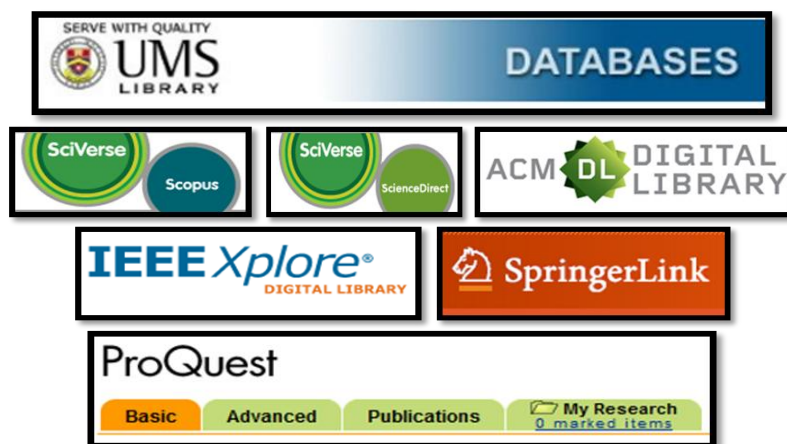


Figure 1 UMS Library *Database* and journals that are accessed

RESULTS AND DISCUSSION

Table 1 shows the number of publications found in the UMS Library database through six pre-defined database journals. By using the keyword ‘COBIT’, it has found as many as 2,236 articles. The details are as follows; 717 articles (32%) found in Scopus, 639 articles (29%) found in SpringerLink, 364 articles (16%) found in ACM, 300 articles (13%) found in ScienceDirect, 62 articles (3%) found in IEEE Xplore, and finally 154 articles (7%) found in ProQuest.

There are approximately 37% of items, which consist of parts of a book, executive summaries or samples material presentation, several Master's and Doctoral theses, excepts IT expert interviews, are not appropriately related to the COBIT acronym.

There are approximately 71% of COBIT users who are more dominated by profit organizations, 18% dominated by non-profit organizations, whereas only 12% of public organizations implement COBIT.

There are approximately 59% of COBIT users who have widely implemented COBIT on a large scale organization. Meanwhile, the grouping of the place/location show that the users outside the USA as a publisher of COBIT, the largest is in the adoption by countries of Asia / Ocenia with 41%, then the U.S. with 35%, and then European countries with 18% and 6% for African countries.

Table 1 Number of publications

Industries	Organization									
	Type			Size			Place / Location			
	Profit	Non-Profit	Public	Large	Medium	Small	America	Asia/Oceania	Europe	Afrika
Education		3			3			2	1	
Financials	5			4	1		2		2	1
Public			2	1	1		1	1		
IT	3			2	1		2	1		
Industry	2			2				2		
Internet										
Banking	1			1				1		
Electronic	1				1		1			

CONCLUSION AND RESEARCH RECOMMENDATIONS

It can be concluded from the literature study that the use of COBIT is mostly employed in the profit sector. This is not surprising because the management of complex IT is located in large organizations. In addition to that, it is found that COBIT is used to solve specific problems related to IT. However, the writing of this paper does not classify the use of COBIT is more specific in the IT governance focus areas.

Although COBIT originated from the United States, but the implementation is mostly in Europe, Asia/Oceania and Africa. This shows that COBIT also has support from outside the United States.

It is recommended that further study should be conducted in order to investigate the proportion of users who are using COBIT in their organizations in areas that are more specific and appropriate to the area of IT governance. Based on the number of the articles found, it is apparently as many as 63% of articles have focused on specific areas in IT governance such as the focus on strategic alignment, value delivery, resource management, risk management, and performance measurement.

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➔ Introduction

Information Technology (IT) has a crucial role in managing the transaction, information and knowledge (Kordel, 2004). In order to execute the strategic role of IT, it will require a strong synergy from all components of organizational resources (structures, processes and mechanisms of the relationship) (Haes & Grembergen, 2004, 2009). IT Governance Institute has identified that an organization will realize the significant improvement over the existence of IT, either directly or indirectly in contributing to business success (ITGI, 2011).

➔ Methodology

The investigation will be conducted by adopting a positive ontology and epistemology methods. The analysis in this study will be carried out by using a quantitative descriptive approach.

➔ Findings and Conclusion

2,236 articles; 717 articles (32%) found in Scopus, 639 articles (29%) found in SpringerLink, 364 articles (16%) found in ACM, 300 articles (13%) found in ScienceDirect, 62 articles (3%) found in IEEE Xplore, and 154 articles (7%) found in ProQuest.

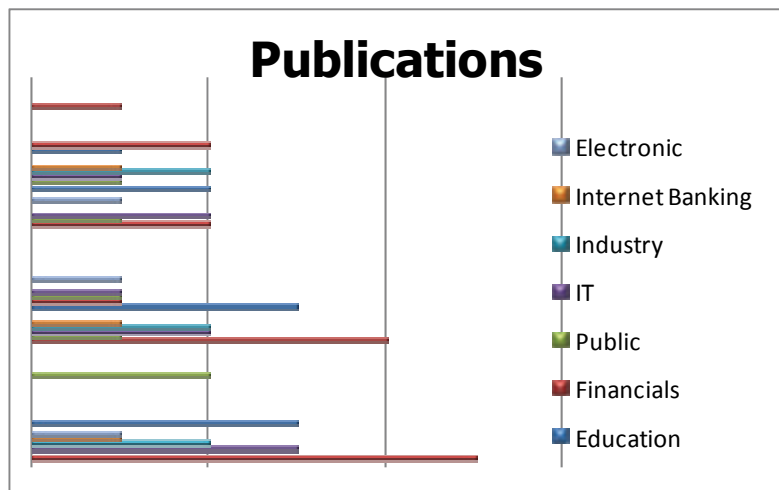
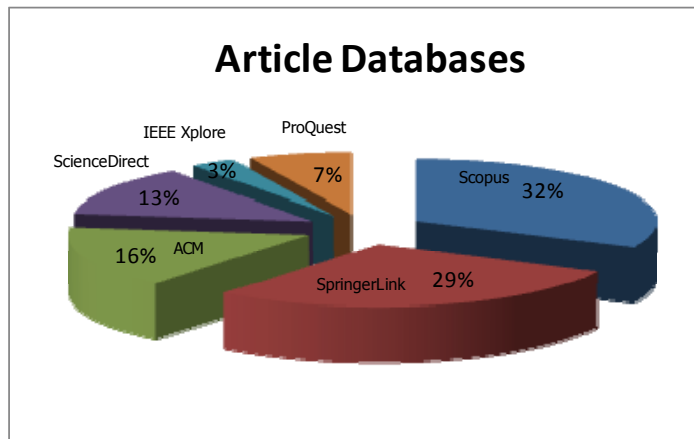


Fig. 1 & 2. Article Databases and Number of Publications

➔ Research and Recommendations

It is recommended that further study should be conducted in order to investigate the proportion of users who are using COBIT in their organizations in areas that are more specific and appropriate to the area of IT governance. Based on the number of the articles found, it is apparently as many as 63% of articles have focused on specific areas in IT governance such as the focus on strategic alignment, value delivery, resource management, risk management, and performance measurement.

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