

Measuring Operational Management Information Technology: COBIT 5.0 and Capability Level

Kelvin Chandra¹, Wella²

Departemen Sistem Informasi, Universitas Multimedia Nusantara, Tangerang, Indonesia
kelvin.chandra42@yahoo.com¹, wella@umn.ac.id²

Accepted on May 10th, 2017

Approved on June 21st, 2017

Abstract—Every system need to be well organized so it can achieve what the company expected. So, every company need to do some measurement to create a well organize system. A type of action that can be used for creating a well organize system is quantify their IT governance PT XYZ is a company that engaged in property business. Their company want to measure their IT governance, to measured their IT governance framework COBIT 5.0 was use and as what the company request process that being measure are Manage Service Agreements, Manage Change, Manage Operations, and Manage Service Request and Incidents. Every process have their own importance and will be measured based on framework COBIT 5.0 capability level. Capability level have 5 kind of stage. PT XYZ expectation that they can achieved level 4. But, the result that came out doesn't match what their company has expected, the result was level 3 and on of their process stop at level 2. So, to attain the level that PT XYZ wanted they need to some improvement based on COBIT 5.0 recommendation.

Index Terms—Capability Level, COBIT 5.0, Information System, IT Governance.

I. INTRODUCTION

Information System is one of the most important thing in every company [1][2]. The existence of information system can improve their operational activities. Based on what has been mention above information system can bring great impact to a company. However, if the information system that being use didn't fully support the company, it can bring negative impact to the company for example, 24 November 2014 Sony Picture Entertainment being hacked, their classified information stolen by the hacker [3]. This kind of event prove that there is a flaw in their system.

Deterrence must be established to prevent every kind of stuff that can bring bad impact to the company. Prevention that can be formed are information technology auditing and create a good IT Governance. In Indonesia this kind prevention already being use by some company for example, Bank Central Asia, Tbk

implementing ISO 9001:2008 about quality system management [4]. Based on the importance PT XYZ are interested to implement this kind of deterrence they want to see their accomplishment in their operational activities. Using Framework COBIT 5.0, PT XYZ decided being audit in 4 process which are: Manage Service Agreements, Manage Change, Manage Operation, and Manage Service Request and Incidents.

The benefits of this research are PT XYZ will get recommendation based on the result that can improve their operational activities and the company will know what capability level that they have achieved.

II. THEORETICAL BASIS

A. Capability Level

Process Assessment Model capability level are divided into some dimension which are level 1 -5 [5].

- a. Level 1 Performed process, the implemented process achieves its process purpose.
- b. Level 2 Managed process, the previously described performed process is now implemented in a managed fashion and appropriately established, controlled and maintained.
- c. Level 3 Established process, the previously described managed process is now implemented using a defined process that is capable of achieving.
- d. Level 4 Predictable process, the previously described established process now operates within defined limits to achieve its process outcomes.
- e. Level 5 Optimizing process, the previously described predictable process is continuously improved to meet relevant current and projected business goals.

B. COBIT 5.0

There are 37 process that have been divided into 4 big domain which are APO (Align, Plan, and Organize), BAI (Build, Acquire, and Implement), DSS (Deliver, Service, and Support) and MEA (Monitor, Evaluate and Assess) [5]. In this research, 4 of 37 process will be measured:

- a. APO 09 Manage Service Agreements, Align IT-enabled services and service levels with enterprise needs and expectations, including identification, specification, design, publishing, agreement, and monitoring of IT services, service levels and performance indicators.
- b. BAI 06 Manage Change, Manage all changes in a controlled manner, including standard changes and emergency maintenance relating to business processes, applications and infrastructure. This includes change standards and procedures, impact assessment, prioritization and authorization, emergency changes, tracking, reporting, closure and documentation.
- c. DSS 01 Manage Operation, Coordinate and execute the activities and operational procedures required to deliver internal and outsourced IT services, including the execution of pre-defined standard operating procedures and the required monitoring activities.
- d. DSS 02 Manage Service Request and Incidents, Provide timely and effective response to user requests and resolution of all types of incidents. Restore normal service; record and fulfil user requests; and record, investigate, diagnose, escalate and resolve incidents.

III. RESEARCH METHODOLOGIES

PT XYZ is a company that move as a property developer. PT XYZ was established at 3 November 1993 and has change becoming one independent city. At 18 December 2007, PT XYZ make a huge decision becoming one of public company which means that PT XYZ are selling their stocks to public market. Until now this company is one of the largest property developer company located in Tangerang [4].

A. Research Variable

4 of 37 process will be variable of this research:

- a. APO 09 Manage Service Agreements.
- b. BAI 06 Manage Change.
- c. DSS 01 Manage Operation.
- d. DSS 02 Manage Service Request and Incidents.

B. Research Method

This research will be executed based on framework COBIT 5.0. For collecting data from PT XYZ there will 3 types of method which are [6]:

- a. Observation, for the observation step things that will be observe is the company documentation. Their completeness will be assess based on Process Assessment Model COBIT 5.0 [5].
- b. Interview, the interview will be done with one of SOP division of PT XYZ. every process have different amount of question based on framework COBIT 5.0 matrix [5].
- c. Questionnaire, for this method questionnaires will be given to the respondent which is Mr. Jonathan Weyn as one of their SOP division. Every process have different amount and type of question base on their concerns [5].

C. Data Analysis Techniques

Data analysis techniques will be based on the problem of analysis which are:

- a. Capability level will calculate based on the questionnaires that was given to the respondent.
- b. Recommendation will be made based on the result of observation, interview, and questionnaires that being analysis to become one recommendation that can give great impact to the company.

D. Measurement Stage

Stage of measuring the capability level of PT XYZ were adapted from Hunton [7]. There are 7 step in measuring capability, which are:

- a. Planning. Stages in conducting an audit is to plan. This can be interpreted before the audit should be made determining what risks can arise, build relationships with clients, then adapt to the environment and determine audit staffs. The planning stages are [5]:
 - Determine the limits and objectives of the audit.
 - Conduct a relevant initial assessment.
 - Gathering knowledge of the organization.
 - Identify outsiders.
 - Establish an audit program that contains audit procedures.

- Assist the audit plan to be performed during the audit.
 - Collecting audit process documents includes audit plans, audit programs and other important documentation.
- b. Risk Assessment. Many auditors now use a risk-based audit approach to audit. See the errors that can occur so that makes the auditor SI determines the important process to perform the audit. In doing risk assessment there are 3 ways that can be done, among others [5]:
- Inheritance, the risk posed by the derivative or innate of the company resulting in the auditor's judgment becomes inaccurate. This risk can occur due to less robust evidence.
 - Control, the risk caused by errors to material that cannot be prevented or detected in a timely manner by the internal control system.
 - Detection, is a risk that occurs because the auditor cannot find errors that occur within the company. Such risks are usually caused by insufficient materials, undetected procedures, or a combination of both.
- c. Program Audit. There is no auditing standard for IT audits because each audit procedure must be tailored to the hardware and software used.
- d. Gather Evidence. To obtain the audit findings and the right conclusions requires proper analysis and interpretation of the available evidence. The evidence is the basis of any established audit opinions. There is some evidence that can be collected by the SI audit, among others [5]:
- The process of observation and the existence of physical components.
 - Documentation proof has been done.
 - Flowcharts, narratives, and written procedures available within the company.
 - Analyse such a running procedure.
- e. Make Conclusion. After evidence of subsequent assignment as an auditor is evaluating the evidence. Then, from the results of the evaluation will be drawn a conclusion in accordance with the purpose of the audit of whether the entire audit process run in accordance with the procedure or not. As an auditor identifying conditions to be reported is also part of their task.
- f. Preparing Audit Opinions. The audit report contains general guidelines and general overview of audit outcomes.
- g. Following Up. After the auditor communicates the results of the audit to the client and prepares the audit opinion, the auditor needs to make provisions to keep the follow up handling the conditions that have not been able to be done.

IV. RESULT

A. Questionnaire

The result of the questionnaire that was given to the responded is that most of the process capability level stops at level 3 but one of them stops at level 2. Base on the result, the result was quite good however, it was below what the company has expected which is level 4. Complete information can be seen from the table 1.

Table 1. Questionnaire Results

No	Process	Total	Status
1	APO09	78%	Stop at Level 3
2	BAI 06	78%	Stop at Level 2
3	DSS 01	71,67%	Stop at Level 3
4	DSS 02	72,33%	Stop at Level 3

B. Interview

The result of the interview, is that every process that has been tested have their own standard of operation that act as every process bases. They also have a division called SMBD (Strategic Management business development) and SOP division working together controlling all their work done base on the standard and make sure that all their documentation are complete.

C. Observation

Based on the documentation observation, PT XYZ has a clear and complete document. Every process have their own kind of documentation and ever document have different kind of purpose. Table 2 provide the complete information of their documentation.

Table 2. Observation Results

Proses COBIT 5.0	Document Name	Status
APO 09 Manage Service Agreements	Flowchart request Service Agreements for Business Service dan Infrastructure	Given
	Flowchart Cash advance, tagihan, Reimbursement	Given
	Service Agreement Documentation	Not Given
	Flowchart project assesment	Given
	Strategy Management Business development audit document result	Not Given
	Budget Approval Document (PPD)	Not Given
BAI 06 Manage Change	Flowchart Project implementation	Given
	SOP documentation	Given
	List-list Project yang membuat perubahan	Not Given
	Training Documentation	Given
DSS 01 Manage Operation	Operational Flowchart	Given
	SLA document	Not Given
	Project document (SRA & BRA)	Given
DSS 02 Manage Service Request and Incidents	Request Document	Given
	OS TICKET	Not Given

D. Result

Based on questionnaire, interview, and observation conducted then obtained the findings as follows:

- APO 09 Manage Service Agreements. Some of the things that cause PT XYZ still do not get maximum value, among others, the company is less utilize the review will be owned by standards to project and identify trends in services level performance and provision of appropriate information for the management used to improve the company's performance. In addition, some of the existing activities carried out by the company. These things make the value achieved by the company in the Manage Service Agreements process has not been maximized.
- BAI 06 Manage Change. The problem experienced by the company is the information that is not used or allocated by the company used to solve the problem at the time of the change. In making changes the company also less involving other parties and less maintain communication between other parties. In addition, the company is less sure of changes made in accordance with existing design plans.
- DSS 01 Manage Operation. PT XYZ does not take full advantage of the documentation in which they investigate issues that may occur in the future. Companies do not maximize the security of companies that can bring adverse impact to the company's operational activities in case something happens while the entire system that exist in the company using the web base. Company only doing activities that exist in large part,

which means that activities have not been done optimally.

- DSS 02 Manage Service Request and Incidents. Companies are still experiencing downtime often because they are not in accordance with the established process standards. In addition, because the company's infrastructure uses outsourced parties the company is very difficult to maintain existing infrastructure because of lack of human resources. Things like this can disrupt the performance of services performed by the company.

Figure 1 explain the result capability level that PT XYZ have achieved which are, Manage Service Agreements achieved level 3, Manage Change achieved level 2, Manage Operation achieved level 3, and Manage Service Request and Incidents achieved level 3. Their achievement are quite good but they didn't achieved their expectation so they need to do some changes that can improve their operational activities and achieved what they wanted.

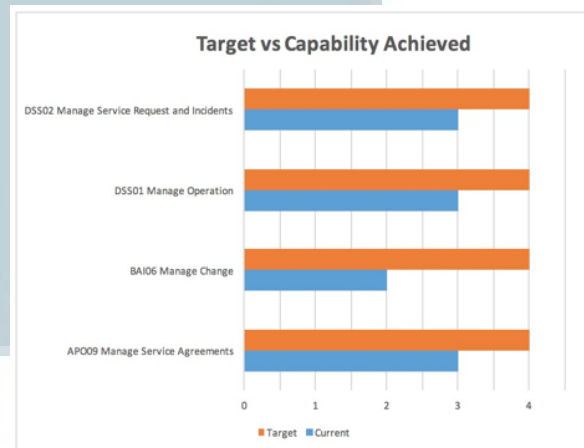


Figure 1. Result and Target Capability Level PT XYZ

E. Recommendations

Form the overall data that have been collected by observation, interview, and questionnaire recommendation that can be given are:

- PT XYZ need to find more human resource that have specific skills especially in infrastructure.
- PT XYZ need to consider about their budget allocation especially for their infrastructure to decrease their downtime that make financial loss to their company.
- PT XYZ need to fix their communication between users and their development team.

V. CONCLUSION

In conclusion, most process that have been tested have reach level 3. The process that reach level 3 are, Manage Service Agreements, Manage Operations, and Manage Service Request and Incidents. On the other hand, there is a process that only reach level 2 which is Manage Change. This achievement where quite good achievement for their company. However, what they achieve still below target that the company wanted which is level 4 so the company need make some improvement to achieve their target. Improvement that they can make are finding a good human resource, improvement on their infrastructure and communication. From this research, can also be conclude that a company that already open for public

should have level 3 capability level because their organization structure already complex.

REFERENCES

- [1] S. Tata, "Sistem Informasi Manajemen," Yogyakarta, Andi, 2005.
- [2] R. Weber, "Information System Control and Audit," Prentice Hall, New Jersey, 1999.
- [3] Kompas. <http://teknokompas.com>. 24 Agustus 2016.
- [4] BCA. <http://www.bca.co.id/id/Tentang-BCA/Korporasi/Siaran-Pers/2016/02/09/04/48/Terapkan-ISO-9001-2008>. 25 Agustus 2016.
- [5] ISACA, <http://www.isaca.org/>. 23 August 2016.
- [6] Gondodiyoto et al., "Pengolahan Fungsi Audit Sistem Informasi," Penerbit Mitra Wacana Media, Jakarta, 2007.
- [7] E. J. Hunton, "Core Concept of Information Technology Auditing," New Jersey, John Willey and Sons Inc, 2004.



U M N