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Implementation COBIT 5 Framework for Measuring E-Government Maturity at Ministry of Law and Human Rights

Ayu Bintang Nurrachma Gunawan and Dana Indra Sensuse

Universitas Indonesia Depok, Indonesia

Email: ayu.bintang@ui.ac.id and dana@cs.ui.ac.id

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ABSTRACT

The implementation of E-Government has been widely carried out by the current government to realized good governance to serve the citizen nowadays. The Ministry of Law and Human Rights or better known as the Kemenkumham in Indonesia, has implemented E-Government in various business processes (services). Still, in its implementation, E-government's application has not fully been able to maximize government services in organizations. The absence of an evaluation of the results of the application of E-Government is also an obstacle for management in making decisions in the planning, control, monitoring, and implementation of E-Government at the Kemenkumham. Therefore, we need a general maturity framework capable of guiding E-Government development and overcoming problems that arise. This study aims to measure the maturity level of e-government implementation by evaluating the E-Government system at the Kemenkumham. Measurement of maturity level is carried out by using the COBIT framework as an e-government maturity model involving 3 main domains, 6 aspects and 34 indicators in e-government on the capability of technical fungctions. The research method used was a survey method within the Kemenkumham. By these studies that the evaluation results would get recommendations for improvements in implementing E-Government for the next period.

1. Introduction

In accordance with government's program in realizing good governance through the implementation of E-Government, the Kemenkumham needs to continuously improve services to the community, both internally and ext'ernally. The application of e-Government is intended to achieve fair and clean governance. E-Government must be able to improve services to the community as a new mechanism for interaction between the government and the community by using information technology, especially the internet. E-Government is a breakthrough to provide better public services to the community. Through e-Government, the Kemenkumham is determined to create professional, accountable, synergistic, transparent, and innovative services by the values adopted. The Kemenkumham has implemented E-Government in various business processes (services), but in its implementation, E-government has not fully been able to maximize E-Services in organizations. The absence of an evaluation of the results of the application of E-Government is also an obstacle for management decision-making in planning, monitoring, implementing E-Government at the Kemenkumham. Therefore, this research will measure the level of maturity of implementing the E-Government system that has been applied to the Kemenkumham. From the evaluation results, it is hoped that there will be recommendations for improvements in implementing E-Government for the next period. By referring to the problem and research objectives, the scientific questions to be answered in this research are: RQ: What is the e-government maturity level at the Kemenkumham ?

Control of Objective and Technology Related (COBIT5) is a framework that will assist this research in evaluating the maturity level of E-Government. COBIT5 provides a comprehensive framework that can help companies or institutions achieve their goals regarding governance and management of information technology. The principle in COBIT 5 framework is to optimizing the use of ICT, by maintaining a balance

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between the level of risk and benefit of ICT and optimizing the use of information resources.

2. Method

This research's implementation was divided into four stages—the first stage, determining the object of study. The object of this maturity level research was the Indonesian Kemenkumham. In the early stages of research preparation, it would be carried out to formulate problems related to a single data system for implementing e-government in the Kemenkumham agency. Then it would continue with a literature review of internal documents, journals, preceding, and other related documents.

The next stage was to select the COBIT 5 domain that will act as a research framework. After determining the domain, both primary and secondary data will be collected according to the desired COBIT 5 domain. Data collection was carried out with the help of research instruments, questionnaires, and interviews with 5 respondents. The questionnaire was conducted with 2 types of questionnaires: the management awareness questionnaire and the maturity level questionnaire.

Interviews were conducted to obtain information in questions and answers with respondents as supporters of the questionnaire results. Interviews are used to get complete details about the problem under study that is not in the questionnaire. In the next stage, the research data collection process would be carried out. This data collection process consists of primary data and secondary data. Data related to the research were collected, with a quantitative capability analysis obtained from direct assessment to related parties using a checklist adapted from the COBIT 5 assessment tool template from ISACA. This step was taken to make it easier to translate and interpret the evidence needed. The data analysis process is carried out after data processing. Data analysis consists of management awareness analysis, current capability analysis (as is), expected level of capability (to be), and gap analysis. The last stage is to verify the facts. Based on the results of this analysis, conclusions and suggestions will be generated regarding the problems in this study.

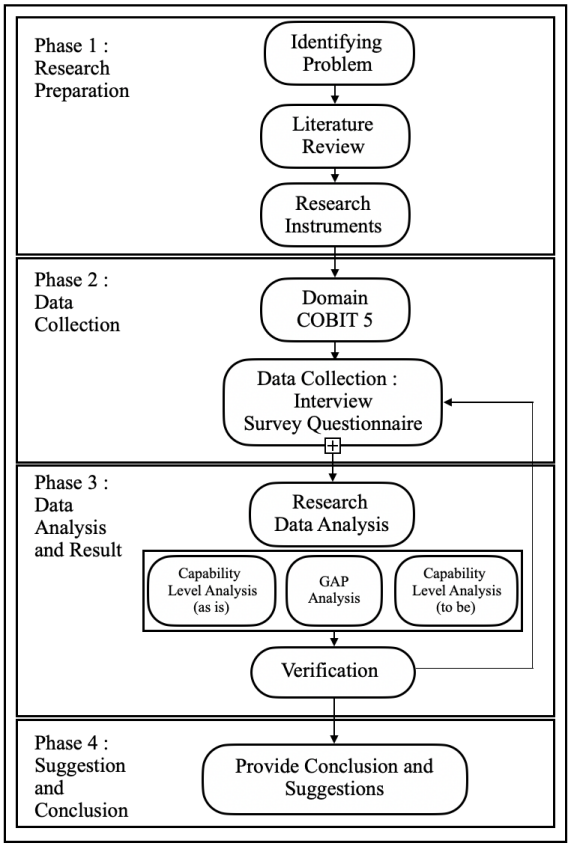

Figure 1. Research Methodology

3. Result And Analysis

3.1 Capability Level Result

Following are the results of the 2020 SPBE evaluation assessment carried out by measuring the level of maturity using the COBIT 5 framework which refers to 5 main domains, 40 aspects as indicators in detail of the acquisition of index values for each domain, aspects and indicators :

TABLE 1
EVALUATE, DIRECT AND MONITOR (EDM) DOMAIN INDEX VALUE

Domain	Indicators	Scale
EDM1.	Ensure Governance Framework Setting and Maintenance	4,0
EDM2.	Ensure Benefits Delivery	3,8
EDM3.	Ensure Risk Optimisation	3,6
EDM4.	Ensure Resource Optimisation	3,8
EDM5.	Ensure Stakeholder Transparency	4,0
	Index Capability	3,00

TABLE 2
ALIGN, PLAN, AND ORGANIZE (APO) DOMAIN INDEX VALUE

Domain	Indicators	Scale
APO1.	Manage the IT Management Framework	3,2
APO2.	Manage Strategy	3,8
APO3.	Manage Enterprise Architecture	3,6
APO4.	Manage Innovation	4,0
APO5.	Manage Portfolio	3,6
APO6	Manage Budget and Cost	4,0
APO7	Manage Human Respurces	3,4
APO8	Manage Relationships	3,8
APO9	Manage Service Agreements	3,8
APO10	Manage Suppliers	3,8
APO11	Manage Quality	3,8
APO12	Manage Risk	3,8
APO13	Manage Security	3,4
APO14	Manage Data	3,4
Index Capability		3,50

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TABLE 3
BUILD, ACQUIRE, AND IMPLEMENT (BAI) DOMAIN INDEX VALUE

Domain	Indicators	Scale
BAI1.	Manage Programmes and Project	3,8
BAI2.	Manage Requirements Definition	4,0
BAI3.	Manage Solution Identification and Build	4,0
BAI4.	Manage Availability and Capacity	3,8
BAI5.	Manage Oragnisational Change Enablement	3,8
BAI6	Manage Changes	3,8
BAI7	Manage Changes Acceptance and Transitioning	3,6
BAI8	Manage Knowledge	3,8
BAI9	Manage Assets	4,0
BAI10	Manage Configuration	3,8
BAI11	Manage Project	4,0
	Index Capability	3,85

TABLE 3
DELIVER, SERVICE, AND SUPPORT (DSS) DOMAIN INDEX VALUE

Domain	Indicators	Scale
DSS1.	Manage Operation	3,4
DSS2.	Manage Service Request and Incidents	3,8
DSS3.	Manage Problems	3,4
DSS4.	Manage Continuity	4,0
DSS5.	Manage Security Services	3,8
DSS6	Manage Bussiness Process Controls	4,0
	Index Capability	3,73

TABLE 4
MONITOR, EVALUATE, AND ASSESS (MEA) DOMAIN INDEX VALUE

Domain	Indicators	Scale
MEA1.	Monitor, Evaluate, and Assess Performance and Conformance (APO)	3,4
MEA2.	Monitor, Evaluate, and Assess the System of Internal Control	3,8
MEA3.	Monitor, Evaluate, and Assess Compliance with External Requirments	3,8

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MEA4	Manage Assurance	4,0
Index Capability		3,75

3.2 GAP Analysis

Based on the data obtained, calculations were calculated for each of the studied domains. EDM domain with a Index Capability of 3.84 or at the Predictable Process level. The APO domain has a Index Capability of 3.00 and is at the Defined Process level, the BAI domain has a Index Capability of 3.84 or a Predictable Process level, the DSS domain with a Index Capability of 3.00 is at the Defined Process level and the MEA domain with a value 3.00 is at the Established Process level.

TABLE 5
GAP INDEX VALUE

Domain	Target	Index Capability	GAP	Status
EDM	3,00	3,84	+0,84	Fully Achieved
APO	3,00	3,50	+0,50	Fully Achieved
BAI	3,00	3,85	+0,85	Fully Achieved
DSS	3,00	3,73	+0,73	Fully Achieved
MEA	3,00	3,75	+0,75	Fully Achieved
Maturity Level : 3				Fully Achieved

If the average calculation of all domains is carried out and reviewing the positive value of the GAP calculation, the results can be drawn that the E-Government Maturity Index at the Kemenkumham has been sufficiently achieved.

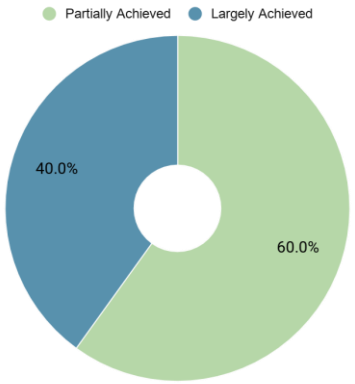

Figure 2. Maturity Index Achievement

However, if it is compared with the maximum limit of the capability level that can be obtained, which is 5.00, it can be seen that even though it has succeeded in achieving the predetermined target, the results have not been maximally shown in Table 6.

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TABLE 6
GAP OPTIMIZING INDEX VALUE

Domain	Optimizing Target	Index Capability	GAP	Status
EDM	5,00	3,84	-1,16	Largely Achieve
APO	5,00	3,50	-1,50	Partially Achieve
BAI	5,00	3,85	-1,15	Largely Achieve
DSS	5,00	3,73	-1,27	Partially Achieve
MEA	5,00	3,75	-1,25	Partially Achieve
Maturity Level : 3				Largely Achieve

3.3 Capability Level Analysis

Based on the data obtained from questionnaire data processing, the results of the measurement of E-Government Maturity at the Kemenkumham are at the Predictable Process level as illustrated in Table 7.

TABLE 7
MATURITY INDEX SCALE

Domain	Optimizing Target	Index Capability	%
EDM	5,00	3,84	76,8 %
APO	5,00	3,50	70 %
BAI	5,00	3,85	77 %
DSS	5,00	3,73	74,6 %
MEA	5,00	3,75	74,6 %
Maturity Level : 3 (Predictable Process)			74,6 %

In organizing SPBE in 2018, the Kemenkumham has not received the best assessment. Based on the SPBE assessment held by the Ministry of Administrative Reform and Bureaucratic Reform in 2018, the SPBE index of the Kemenkumham is at the level of 3. This means that there is an increase in the level of Maturity at the Kemenkumham by 43%. Even though it has increased, the E-Government Maturity level still hasn't reached the maximum level as depicted in figure 3.

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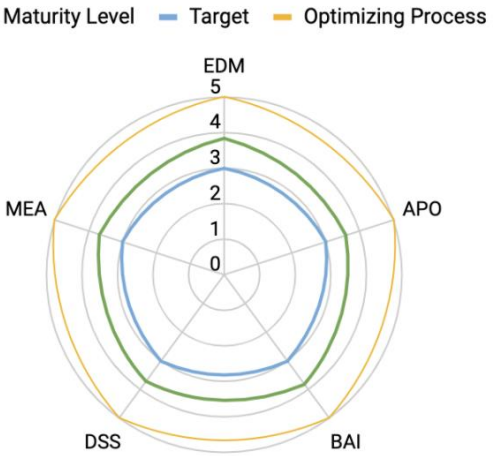

Figure 3. Capability Level Result

This can be investigated from several process indicators that are still at the Established Process level. Several indicators of the process include :

TABLE 8
THE COBIT 5 PROCESS ENABLER NEEDS TO BE UPGRADED

Domain	Indicators	Index Capability
APO1.	Manage the IT Management Framework	3,2
APO7	Manage Human Respurces	3,4
APO13	Manage Security	3,4
APO14	Manage Data	3,4
DSS1.	Manage Operation	3,4
DSS3.	Manage Problems	3,4

This means that the Kemenkumham still needs to align the ICT governance for services and support for good information technology governance..

Recommendatio, to achieve a better level of maturity, the Kemenkumham needs to carry out continuous control over every process of the ICT domain related to operational standards and security for the business being run. Some recommendations that can be put forward for improvement according to the COBIT 5 indicator are as follows :

1. APO 1 - Manage the IT Management Framework

To improve aspects of Manage the IT Management Framework, the following things can be done such as determine the roles and responsibilities of each job function, Establishment of an IT committee, guidelines for each management structure ,Adequate supervisory practices , follow the applicable national and international standards regarding governance and management, availability of sufficient and skilled resources to support the communication process, IT function placement evaluation activities, Guidelines / procedures governing documents, grouping, collecting and storing data, security guidelines / procedures and data control guidelines, policies / procedures that ensure data integrity and consistency, IT governance capability level audit activities. IT governance process improvement, Performance objectives and metrics for the identification of IT governance process improvements, measurement of IT processes and employee performance.2.

2. APO 7 - Manage Human Resources

To improve aspects of Manage Human Resources, the following things can be done such as planning for recruitment of employees, both civil servants, honorary and contract workers, policies in terms of transfer of

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employees or IT personnel, anticipate the handling of IT operations when facing holidays, conduct training and testing of backup IT personnel, identify gaps between the required skills and the potential of existing employees, skills development to avoid knowledge gaps between employees, report on the results of the competency and skills assessment of employees, documentation of results of evaluation of individual goals and employee performance, improvement planning activities for employee performance that have not reached the target, contract agreement policy for contract workers; Contract agreements for contract workers, periodic review of the contract agreement.

3. APO 13 - Manage Security

To improve aspects of Manage Security, the following things can be done such as increase user awareness of data security and information systems, conducting information technology risk management and vulnerability assessments related to information technology, do a penetration test, handling problems related to cyber crime, providing information technology security on information technology applications and infrastructure, describe the security function in the duties and functions of each information technology institution.

4. APO 14 - Manage Data

To improve aspects of Manage Data, the following things can be done such as equalize the format and structure of application data across work units so as not to complicate the integration process, performing interintegration of laws and regulations so that overlaps and duplications in regulatory data do not occur, manage all ministerial data and information in one storage and management, resolving sectoral egos in each Main Unit and vendor so as not to complicate the process of exchanging and integrating data, increase cooperation between the Kemenkumham and other agencies so that it is easy to integrate data externally, implement data interoperability well

5. DSS 1 - Manage Operation

To improve aspects of Manage Operation, the following things can be done such as equalize the format and structure of application data across work units so as not to complicate the integration process, performing interintegration of laws and regulations so that overlaps and duplications in regulatory data do not occur, manage all ministerial data and information in one storage and management, resolving sectoral egos in each Main Unit and vendor so as not to complicate the process of data exchange and integration, increase cooperation between the Kemenkumham and other agencies so that it is easy to integrate data externally, implement data interoperability well

6. DSS 3 - Manage Problem

To improve aspects of Manage Problem, the following things can be done such as chart / schematic for classifying problems, problem status report and solution steps, documentation to save a history of problems that occur and their solutions, the root cause logging activity is complemented by the most appropriate solution, problem resolution monitoring reports in the form of problem resolution results handled and sent to stakeholders, the activity of identifying the right solution.

3.4 Capability Level Verification

The Kemenkumham previously conducted a survey regarding the level of employee satisfaction with company ICT at the Regional Office of the Kemenkumham. Based on the results of a survey conducted in 15 Regional Offices of the Kemenkumham, the Regional Officel satisfaction index 2.85 or the level of satisfaction is quite close but the level is not satisfactory. This is in accordance with the results of research where the Maturity level is still at the Defined Process level. Apart from the results of the survey, other data that verify this level of maturity is the Kemenkumham. In addition, the results of this study have been verified with related parties from Kemenkumham and have been approved and accepted.

4. Conclussion

Based on the evaluation results of the E-Government maturity level at the Kemenkumham, currently the Maturity level is at the Defined Process Level. This means that E-Government has run well enough where at this level it has operated within the specified limits to achieve the expected results. Even so, there are several aspects that still need to be improved, such as aspects of Manage the IT Management Framework, Manage Human Resources, Manage Security, Manage Data, Manage Operations, and Manage Problems.

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