



Analysis of Information Technology Governance in the SaData-Ku Application at the Kuningan Regency Regional Development Planning, Research and Development Agency (BAPPEDA) Using the COBIT 2019 Framework

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Abstract— Currently, the success and continuity of a company or organization is very much based on IT, in terms of speed and results that can help increase the effectiveness and efficiency of business processes to achieve goals. In its implementation, the Regional Development Planning, Research and Development Agency (BAPPEDA) of Kuningan Regency encountered problems with the SaData-Ku application, errors occurred when inputting data (system failure to operate), there was a risk that when collecting data there was a delay from the predetermined schedule, the operation of the application was limited in time. for data input, resulting in bugs in the application. This problem has a negative impact on the continuity of the development planning process and can reduce the quality performance of information technology. To overcome this, application users need learning and growth to become more proficient in the field of information technology, thereby reducing difficulties in dealing with sudden changes or disruptions to applications. These problems can be identified thoroughly with governance using the COBIT 2019 framework. The form and content of the COBIT 2019 model are updated from the previous COBIT method and many new functions are added, including enabling improvements to the IT governance system. By conducting analysis, you can provide recommendations to improve the organization's capabilities to meet the agency's expectations and goals regarding IT governance in supporting its performance. The COBIT 2019 domains used are APO and DSS with details of the APO07, APO12, APO14 and DSS01 processes. The results of measuring the capability level of the APO07 domain at the Kuningan Regency Regional Development Planning, Research and Development Agency (BAPPEDA) got a capability level 4 value, the APO12, APO14 and DSS01 domains got a capability level 5 value.

Keywords— COBIT 2019, Capability, Governance, Information Technology.

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I. INTRODUCTION

The use of Information Technology (IT) is very much needed and is an important part of almost all business sectors, including regional government agencies or regional government institutions [1]. Information Technology (IT) has become a necessity due to limited resources (such as data, technology application systems, facilities and human resources) and the need for quality information is the main factor why the use of information technology needs to be planned systematically [2]. Information and technology are the most valuable assets in regional government agencies or regional government institutions. Successful device agencies can recognize the added value of using information technology and increase the value of the agency. Regional government agencies must be able to understand and manage related risks, such as

increasing compliance with rules or regulations and business dependence on information technology [3].

The Kuningan Regency Regional Development Planning, Research and Development Agency (BAPPEDA) is one of the Regional Apparatuses that has the vision of "Village-Based Advanced Kuningan (Prosperous, Religious, Pinunjul) in 2023" [4]. BAPPEDA Kuningan Regency is a supporting implementing element that carries out regional planning, research and development [5]. Regional development planning has physical, economic, social and cultural aspects, governance, control and evaluation, organizing and coordinating development planning, as well as identifying, processing and analyzing development data [5]. BAPPEDA which has the task of carrying out the regional development planning process really needs a web application system for support in planning programs and activities as well as evaluating regional development, with the

SaData-Ku Kuningan Regency application which functions as a network for collecting data in an integrated, real-time and online manner using information technology, so that it can be completed rationally, effectively, efficiently, precisely and accurately [6].

SaData-Ku can maximize regional development planning performance because administrative functions that previously took up time have now been replaced by the system. However, there are problems with the SaData-Ku application with errors occurring when inputting data (system failure to operate), the risk of data collection being delayed from the predetermined schedule, application operation having limited time for data input, resulting in bugs in the application. This problem has a negative impact on the continuity of the development planning process and can reduce the quality performance of information technology. To overcome this, application users need learning and growth to become more proficient in the field of information technology, thereby reducing difficulties in dealing with sudden changes or disruptions to applications. Based on this, to carry out information technology governance in the SaData-Ku application at the Regional Development Planning, Research and Development Agency (BAPPEDA), there is a standard framework that can be used to assist the regional research and development planning process.

These problems can be identified thoroughly with governance using the 2019 COBIT (Control Objectives for Information and Related Technology) framework. The 2019 COBIT model has its form and content updated, and many new functions added, including enabling improvements to the IT governance system. In the COBIT 2019 framework there is a model to measure how well an IT governance and management process has been running, namely the COBIT Performance Management (CPM) model.

Therefore, it is necessary to analyze information technology governance in the SaData-Ku application at the Kuningan Regency Regional Development Planning, Research and Development Agency (BAPPEDA). By conducting analysis, you can provide recommendations to improve the organization's capabilities to meet the agency's expectations and goals regarding IT governance in supporting its performance. The COBIT 2019 domains used are APO and DSS with details of the processes APO07 Managed Human Resources, APO12 Managed Risk, APO14 Managed Data and DSS01 Managed Operations.

Related to the results of this research, the aim is to analyze information technology governance to support the level of capability of the SaData-Ku application in the Regional Development Planning, Research and Development Agency (BAPPEDA) of Kuningan Regency using the COBIT 2019 framework. Then the results of the research are in the form of recommendations for improving governance capabilities manage SaData-Ku information technology.

II. RESEARCH METHODOLOGY

The flow of research methods that will be carried out uses a research framework that begins with observations and interviews, literature studies, determining the COBIT 2019 domain process, questionnaires, and analysis of COBIT 2019 governance results.

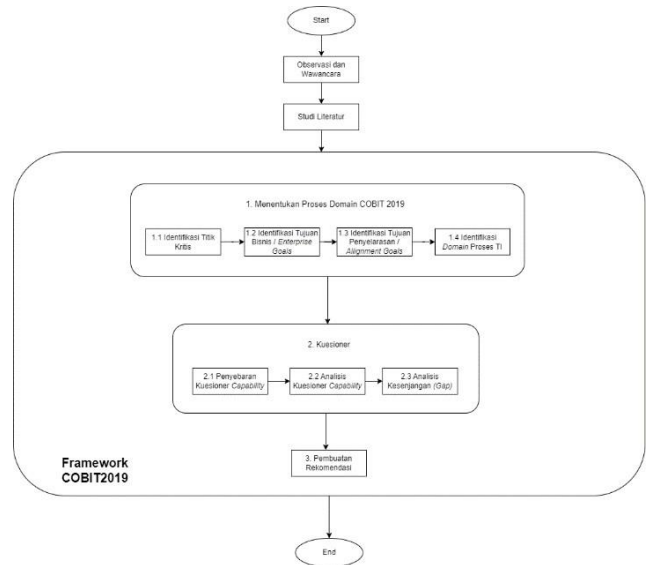


Figure 1 Research Stages

A. Observations and Interview

Observation is observing by recording the facts needed by the researcher [7]. In this research, observations were carried out at the Kuningan Regency Regional Development Planning, Research and Development Agency (BAPPEDA) with the aim of identifying and looking for some information that could be collected. This observation was carried out by making direct observations of the research object on how information technology is managed at the Regional Development Planning, Research and Development Agency (BAPPEDA) of Kuningan Regency.

An interview is a question and answer session between two or more people directly with a specific purpose [8].

B. Literature Studies

Literature study or preliminary study is an attempt to study a research problem before the research is actually carried out [9]. In this research, a literature study was carried out by studying theories obtained from journals related to information technology governance using the COBIT framework regarding the framework and methods used. The literature study which is the main reference for this research is the ebook issued by ISACA in 2018-2019 with the title COBIT 2019: Framework Introduction and Methodology, and COBIT 2019: Governance and Management Objectives.

C. Determine the COBIT 2019 Domain Process

Determining the process object or COBIT Domain is done by determining the identification of Stakeholder Needs & Enterprise Goals. The first stage carried out is identifying stakeholder needs and agency goals. Stakeholders Needs are the needs of stakeholders in an agency. Then the results of the Stakeholders Needs can later be used as a basis for determining the Enterprises Goals or business objectives of the agency. [10].

Next, identify IT Goals from related agencies. After obtaining IT Goals from the relevant agencies, the next step is determining the IT Domain and processes. Determining the COBIT 2019 process domain is carried out by identifying critical points, identifying business goals/enterprise goals, identifying alignment goals, and identifying IT process domains.

D. Questionnaire

A questionnaire or questionnaire is a data collection method that is carried out by giving respondents several questions or written statements to answer. A questionnaire or list of certain questions submitted by researchers to respondents is related to the field of study being researched [11],[12],[13],[14]. Carried out by distributing Capability Questionnaires to employees of the Kuningan Regency Regional Development Planning, Research and Development Agency (BAPPEDA), Analysis of the Capability Questionnaire which refers to the COBIT 2019 module [12],[16],[17],[18],[19].

III. RESULTS AND DISCUSSION

A. Identification *Enterprise Goals*

Initial identification is carried out by identifying the goals and objectives of the SaData-Ku application which will be aligned with the Enterprise Goals in accordance with the COBIT 2019 standardization in the COBIT 2019 Framework Introduction and Methodology module and the COBIT 2019 Governance and Management Object module in accordance with the vision, mission and results of interviews with Implementers Data and Evaluation Sub-Section for PDELIT and Development Development Planning, Research and Development Agency (BAPPEDA) Kuningan Regency. Below in table 1 are the results of the Enterprise Goals mapping [20],[21].

Tabel 1. Mapping Results *Enterprise Goals*

No.	Critical Point	Reference	Enterprise Goals
1	There is a risk that data collection will be delayed from the predetermined schedule	EG02	Managed Business Risks
2	An error occurs while inputting data (system failure to operate)	EG07	Quality of Management Information
3	There is a need for learning and growth among application users to become more proficient in the IT field	EG10	Staff Skills, Motivation and Productivity
4	Application operations are limited in time for data input, resulting in bugs in the application	EG12	Managed Digital Transformation Program

B. Identifications *Alignment Goals*

The steps taken at this stage are to use the Enterprise Goals and Alignment Goals mapping table contained in the COBIT 2019 Governance and Management Object module as a reference for selecting each selected process. To clarify the results of mapping company goals (Enterprise Goals) to alignment goals (Alignment Goals), the detailed alignment goal mapping is shown in table 2 [22],[23],[24],[25].

Tabel 2. Mapping Results *Alignment Goals*

No	Reference	Enterprise Goals	Alignment Goals		
1	EG02	Managed Business Risks	AG02	AG07	
2	EG07	Quality of Management Information	AG04	AG10	
3	EG10	Staff Skills, Motivation and Productivity	AG12		
4	EG12	Managed Digital Transformation Program	AG03	AG08	AG09

It can be seen in table 2, namely the mapping of Alignment Goals from Enterprise Goals, then the results of the Alignment Goals identification mapping can be seen in table 3.

Tabel 3. Mapping Results *Alignment Goals*

No	Reference	Alignment Goals
1	AG02	Managed I&T related risks
	AG03	Benefits realized from I&T enabled investments and service portfolio
	AG04	The quality of technology-related financial information
2	AG07	Information security, processing infrastructure and applications, and privacy
	AG08	Enable and support business processes with integrating applications and technology
	AG09	Delivery of programs on time, within budget and meeting quality requirements and standards
	AG10	Quality of I&T management information
3	AG12	Competent and motivated staff with a shared understanding of technology and business

C. Results of 2019 COBIT Domain Determination

Based on the results of interviews, vision and mission, identification of Enterprise Goals, Alignment Goals, and Governance and Management Objectives in the SaData-Ku Application at the Kuningan Regency Regional Development Planning, Research and

Development Agency (BAPPEDA), the COBIT 2019 domain was selected and used as a reference for the questionnaire, namely APO07, APO12, APO14 and DSS01.

Tabel 4. 2019 COBIT Domain Determination Results

No	Domain	IT Process	Critical Point
1	APO07	Managed Human Resources	There is a need for learning and growth among application users to become more proficient in the IT field
2	APO12	Managed Risk	There is a risk that data collection will be delayed from the predetermined schedule
3	APO14	Managed Security	An error occurred while inputting data (system failure to operate)
4	DSS01	Managed Operations	Operation of the application is limited in time for data input, resulting in bugs in the SaData-Ku application at the Kuningan Regency Regional Development Planning, Research and Development Agency

Domain	Nilai Kapabilitas	Level Kapabilitas
APO07 <i>Managed Human Resources</i>	99%	4
APO08 <i>Managed Risk</i>	97%	5
APO13 <i>Managed Data</i>	97%	5
DSS01 <i>Managed Operations</i>	100%	5

Table 4 shows that the process of calculating the capability level of the SaData-Ku application at the Regional Development Planning, Research and Development Agency (BAPPEDA) of Kuningan Regency reached capability levels 4 and 5, meaning that the process achieved its goal of being categorized as organized.

IV. CONCLUSION

SaData-Ku di Badan Perencanaan Pembangunan, Penelitian dan Pengembangan Daerah (BAPPEDA) Kabupaten Kuningan . The results of measuring the capability level in the SaData-Ku application at the Regional Development Planning, Research and Development Agency (BAPPEDA) Kuningan Regency domain APO07 obtained a capability value of 99% at level 4, it was stated that achieving its goals well was categorized as organized. The APO12 domain and APO14 domain get a capability score of 97% at level 5, stating that achieving their goals well is categorized as organized. The DSS01 domain gets a capability score of 100% at level 5, stating that achieving its goals well is categorized as organized.

Recommendations that can be given to the Regional Development Planning, Research and Development Agency (BAPPEDA) of Kuningan Regency based on the results of capability level calculations are very good and have achieved their objectives.

Based on the results of research that has been carried out, suggestions for further research are grouping questionnaire forms based on level to make it easier for respondents to complete the questionnaire. In further research, it is also recommended to apply other domains such as BAI, EDM, MEA and so on in order to obtain different recommendation results and become relevant in future research.

Recommendations for improvement are necessary to minimize or eliminate deficiencies associated with an organization's IT resources. The goal of making recommendations for improvement is to make existing IT systems or resources operate more efficiently. The recommendations given are based on the results of the capability values referring to the 2019 COBIT Framework [6].

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D. Results of Capability Measurement Analysis

Capability measurements are used to determine the level of capability of the SaData-Ku application at the Kuningan Regency Regional Development Planning, Research and Development Agency (BAPPEDA). The capability level questionnaire refers to the COBIT 2019 module [12].

The respondents selected to fill out the APO07, APO12, APO14, and DSS01 process level capability questionnaires were 5 respondents consisting of the Head of the PDELitbang Division, Head of the Data and Evaluation Sub-Section, 3 Data and Evaluation Sub-Section Implementers.

The calculation results of the APO07 process obtained a capability value at level 4 with a capability value of 99% with a rating of F (Fully).

The calculation results of the APO12 process obtained a capability value at level 5 with a capability value of 97% with a rating of F (Fully).

The calculation results of the APO14 process obtained a capability value of level 5 with a capability value of 97% with a rating of F (Fully).

The results of the DSS01 process calculations obtained a capability value of level 5 with a capability value of 100% with a rating of F (Fully).

Tabel 5. Results of Capability Measurement Analysis

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