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EVALUATION OF IT GOVERNANCE USING COBIT 2019 ON REGIONAL ASSET MANAGEMENT AGENCY OF DKI JAKARTA

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Abstract— *An adequate level of IT availability can obtained by implementing IT Governance, which pay attention to all related issues service readiness, including services and resources. This research aimed to assess the IT Governance capability at the Regional Asset Management Agency (BPAD), a government institution responsible for asset management. The study specifically focused on issues related to data and information management, including leadership and risk management challenges. Using the COBIT 2019 Framework, data were collected through interviews and observations. The respondent of this research are 4 who work in the Data and Information Sub-Sector and one Head of Asset Administration. The findings revealed that the EDM 05 process achieved a capability level of 4, surpassing the organization's target. However, the APO 08 and APO 12 processes were rated at level 2, highlighting areas in need of improvement. The study provides recommendations to enhance BPAD's performance and optimize its business activities.*

Keywords: *BPAD, capability level, COBIT 2019, IT governance.*

Abstrak— *Sebuah tingkat ketersediaan TI yang memadai dapat dicapai dengan menerapkan Tata Kelola TI yang memperhatikan semua masalah terkait kesiapan layanan, termasuk layanan dan sumber daya. Penelitian ini bertujuan untuk menilai kapabilitas Tata Kelola TI di Badan Pengelolaan Aset Daerah (BPAD), sebuah lembaga pemerintah yang bertanggung jawab atas pengelolaan aset. Penelitian ini secara khusus berfokus pada isu-isu terkait pengelolaan data dan informasi, termasuk tantangan kepemimpinan dan manajemen risiko. Menggunakan Kerangka Kerja COBIT 2019, data dikumpulkan melalui wawancara dan observasi. Responden penelitian ini adalah 4 orang yang bekerja di Sub-Sektor Data dan Informasi dan satu Kepala Administrasi Aset. Temuan mengungkapkan bahwa proses EDM 05 mencapai tingkat kapabilitas 4, melampaui target organisasi. Namun, proses APO 08 dan APO 12 dinilai pada tingkat 2, menunjukkan area yang perlu ditingkatkan. Penelitian ini memberikan rekomendasi untuk meningkatkan kinerja BPAD dan mengoptimalkan kegiatan bisnisnya.*

Kata Kunci: *BPAD, tingkat kapabilitas, COBIT 2019, IT governance.*

INTRODUCTION

Information and communication technologies (ICTs) are essential (Yigitcanlar et al., 2024). Information Technology is also needed in institutions or institutions in carrying out developments and face competition (Chen & Filieri, 2024). There are several benefits in the application of IT, which can improve speed and accuracy of data information, can also increase the risk of negativity towards a goal company (Sutton & Pincock, 2020). Failure and innovation have always been inextricably linked. What matters in today's complex environment, however, is how companies deal with failure from innovation (Appio et al., 2024). The risks that arise can affect the non-optimization of work processes, financial loss, declining company quality until the company's goals are not achieved (Carnielli, 2021).

An adequate level of IT availability can obtained by implementing IT Governance, which pay attention to all related issues service readiness, including services and resources its power, which ensures that it can be achieved service availability on all systems (Banerjee et al., 2024). If there is a disturbance in Information Technology which owned, then professional management, resources reliable power and considerable cost with no small risk of failure is needed in the application of Information Technology (Rani et al., 2024). It is

necessary that there is a continuous improvement in project management and an increase in maturity that accompanies the changes and needs of companies (Domingues & Ribeiro, 2023).

One of the government agencies that has implementing information technology is the Agency Regional Asset Management (BPAD) DKI Province Jakarta. Regional Asset Management Agency (BPAD) DKI Jakarta Province is the implementing element supporting functions of government affairs in the field of finance in the asset management sub-sector. In realize the Accountability of Property Management Regions, BPAD are faced with asset problems whose data does not match the existing data and assets in SKPD/UKPD and cause it is not accepted asset data by BPK RI.

Therefore BPAD provides various systems in asset management so that between data and assets can be integrated, so that organizational goals can be achieved and can find out the reason the difference between data and assets owned. However In its application there are two main problems which are: until now still have to continue to be improved, namely first, the seriousness of the leadership level at BPAD in maximize the use of the system created, and integration within BPAD internal and integration to external BPAD, namely SKPD and UKPD outside

BPAD, so there are still problems in asset management due to less than optimal system usage. So that it is necessary management of the relationship between internal and external company in achieving company goals, too risk management to minimize risks will occur in asset management. COBIT 2019 is the framework used in the analysis of IT governance this time. COBIT integrate good practices in management of information technology and provide framework for IT governance that can be assist the understanding and management of risk and benefits from technology information (Amorim et al., 2021; Chui & W Wella, 2024). COBIT 2019 is an update of COBIT before. The development of technology and information, then the need for a organization, therefore ISACA did COBIT alignment to stay relevant help the organization to achieve its business goals. COBIT 2019 improves various areas of the version The previous COBIT was flexibility and openness, add a new focus area; currency and relevance, supports references andalignment of concepts from previous sources; perspective application, is descriptive and prescriptive, the application of governance is adjusted to its components; performance management of IT, the structure of the management model is more conceptual. Concept Maturity and ability are introduced to better alignment with CMMI. Too as mentioned that the focus area on COBIT 2019 has additions, as in the profile risk, there are 19 risk categories (Gerl et al., 2021).

Based on the problems exposed, the selected EDM 05, APO 08, and APO 12 domains in reference to carry out Information Technology governance in BPAD. It is hoped that BPAD can improve quality in managing good relations with internal and external to the company.

MATERIALS AND METHODS

Previous Research

Similar studies have been conducted by several other researchers. Research has been conducted in analyzing the level of maturity of information technology at the Manado City Communication and Informatics Office. The study by (Mambu et al., 2023) found that PT Icon+ faces challenges in IT governance, with process capabilities still low and inconsistent according to the COBIT 2019 framework. The recommended solution is continuous improvement through enhanced policies, procedures, training, and regular monitoring to achieve higher capability levels in line with COBIT 2019 standards.

Other studies have also analyzed the EDM domain at a university (Pasyha & Wagiu, 2020). However, it was found that the EDM domain at the university was not optimal in anticipating risks (Pasyha & Wagiu, 2020). The study by (Widarja & Sulthon, 2023) revealed that the IT governance services at St. Carolus Hospital are not fully optimized, with several governance processes failing to meet expected standards according to COBIT 2019. The audit found that many areas had low capability levels, inadequate documentation, and inconsistent application of standard procedures.

Another study using COBIT by (Agustriani & Sutabri, 2024) evaluates e-government service quality through the Domains of Deliver, Service, and Support using the COBIT 5.0 framework. The results indicate that effective implementation of these domains significantly enhances the overall quality of e-government services. This study intends to conduct similar measurements on other research objects, especially BPAD, with the hope of providing insight for research objects to be able to improve their IT capabilities. In addition, the difference between this study and the previous study above is the framework used. This study uses the latest version of the framework, namely COBIT 2019, to help analyze the needs related to BPAD IT governance evaluation.

IT Governance

IT Governance is a concept that developed from the private sector, but with growing use of

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Information Technology (IT) by government organizations then IT Governance should also be applied in this sector (Sundari et al., 2021). It's also a branch of focused corporate governancen information technology (IT) systems and management performance and risks (Ichwani & AD Farida, 2020). IT governance can also be described a relationship structure and process for regulate and control companies that aim to achieve the company's goals that have been fixed with constant value added balance risks with value derived from the implementation of IT and its processes (Gerl et al., 2021).

COBIT 2019

COBIT 2019 COBIT 2019 is an update of Previously, ISACA performed COBIT alignment to remain relevant in order to assist organizations in goal of achieving its business goals. COBIT 2019 too developed based on two sets of principles, namely governance built for the governance system and governance framework (Gerl et al., 2021; Jaime & Barata, 2023).

Capability Level

Process capability is a process to measure a process in achieving current business goals or in the future. Process capability assessment used to identify the level of capability selected process and then determine the steps further to make improvements to the the process capability. Capability measurement based on process attributes. Every attribute define certain aspects of process capability.The combination of achieving these process attributes will determine the level of process capability (Henriquez et al., 2022; Joshi et al., 2022).

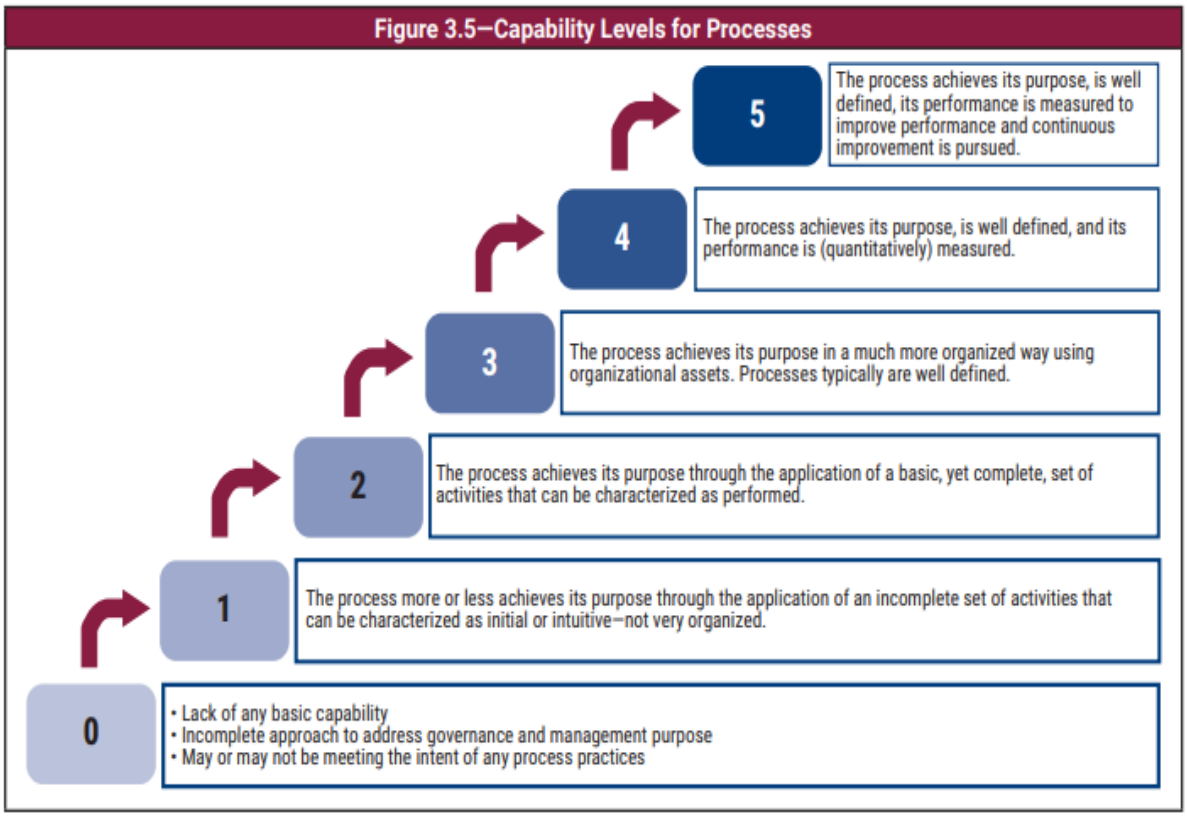
Audit Stage

Figure 1 illustrates the audit stages which will be used as a reference in the measurement process capability level of an object in this study, namely (Chui & W Wella, 2024):

1. Planning
2. Field Work
3. Reporting
4. Follow Up

Research Method

The method approach used in this research is quantitative, where the results of interviews conducted will be counted and used as a determinant to determine the level of capability on the selected domains. Level calculation result how far has the capability to provide clues gone? IT governance in the company, so that the company can improve the quality management in the company.



Source : (Chui & W Wella, 2024)

Figure 1. Capability Level

Data Collection Techniques

Here are the techniques of collecting data:

a. Observations. = This stage the researcher will see and analyze how companies in managing good relations with internal as well as external companies have also the extent to which the company manages risk.
b. Interview = This stage the researcher asks questions directly to the relevant division, about management of corporate relations with internal and external company, management risks, and implement into system or implementation in communicating with internal and external. Interviews conducted with several staff and Head of Data and Information Sub-Sector, namely Mr. Suripto, and also the Head of Administration Assets, namely Mr. Riswan, which was carried out directly at the BPAD office.

Data Analysis Techniques

The data analysis technique used is quantitative method by measuring based on COBIT 2019 work, then take measurements to be able to find out the level the capabilities of the domain in the company, after get capability level result, give findings that can increase the level of capability process for the company, from the findings obtained researchers analyze and provide recommendations for improvement, so that the activities that has not been achieved can be achieved and improve the quality of IT governance in the company.

Sample Collection Techniques

The sample collection technique in this research study is the first to do a pre-interview, aims to ensure that problems occur at the company, aims to analyze and determine what domain to use, then determine the domain based on the formula problem, then data collection based on activity in the process, after that take measurements from the results of interviews, to see if from the activity in question has been carried out or not, Finally, provide recommendations from the findings on the data collection carried out.

RESULTS AND DISCUSSION

The following is a description of existing research at the Regional Asset Management Agency using the stages of measuring governance capability, as follows:

Planning

At the planning stage, the researcher plans to determine the object to be researched. Researchers will determine the scope, conduct pre interviews related to company problems, analyze the company's vision and mission and company targets. Researchers will also examine the extent of the management of information technology in the company. The results of the pre - interview will be analyzed so that it can determine the reference domain that is related to the company 's problems and targets.

Field Work

The field work stage is the stage for researchers to collect data, such as conducting interviews and company observations. Interviews were conducted based on the activities contained in the selected domain to measure the extent to which technology and information management at the company was. COBIT 2019 is a framework used to measure information technology governance, which provides recommendations to companies related to improving the management of corporate information and technology.

Data collection produces quantitative data, in which the results of the interviews produce values that will be calculated on average, so that it can be analyzed whether or not there is an increase in the level of the company according to the analyzed domain. Before conducting interviews, to determine who will be the respondents of this research, the researchers analyzed using the RACI chart, the individuals who were used as respondents were individuals who were responsible for and carried out activities in the sub-process domain.

At the company, there are 27 staff who work in the Data and Information Sub-Sector and one Head of Asset Administration, from 27+1 population, 4 of whom are samples in this study, due to the person in charge of the division. The respondent who was interviewed for the first time was Mr. Riswan as the Head of the Asset Administration Division, the interview was conducted face to face in the room of the Head of the Asset Administration Division. The second interview was conducted with the Head of the Data and Information Sub- Division, namely Mr. Suripto Sastrowiyono, which was conducted face-to-face and carried out at the residence of Mr. Suripto. Subsequent interviews with Mr. Asmanugraha and Mr. Degas Pradipta as members of systems analysts, interviews were conducted face-to-face at the Regional Asset Management Agency office , the last interview was conducted with Ms. Malinda Eka as a member of the data analyst, where interviews were conducted face - to - face at the Office of the Management Agency Regional assets.

Interviews were conducted from 11 February 2021 – 08 April 2021. The interview results are documented in an audit report that is transformed into numerical data. The interview data are subsequently examined to assess the

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evaluation of the COBIT process. Furthermore, the interview also addresses the discoveries and suggestions that might be used to expand and strengthen their IT capabilities. The following are the results of the calculations from the interviews conducted:

Table 1. Calculation of EDM 05 Process

Process	Score
EDM05.1	84.50
EDM05.2	87.00
Final Score	86.00

Source: (Research Results, 2024)

Table 1 describes the results of the calculations on the EDM 05 process , which produces a value >85. It conclude that EDM process 05 can continue to the next level.

Table 2. Calculation of APO 08 Process

Process	Score
APO08.1	84.25
APO08.4	83.00
Final Score	83.70

Source: (Research Results, 2024)

Table 2 describes the calculation results for the APO 08 process , which yields a value of <85, which means that the process of APO 08 stops at level 2.

Table 3. Calculation of APO 12 Process

Process	Score
APO12.1	82.50
APO12.3	80.00
APO12.5	85.00
Final Score	82.50

Source: (Research Results, 2024)

Table 3 explains the results of the calculations on APO 12 where the process gets results <85. The APO 12 process means that it stops at level 2 and cannot continue the calculation to the next level.

Table 4. The Result of Calculation of Capability Level 2

Process	Score	Status	Information
EDM05	86.00	Fully Achieved	Procees to level 3
APO08	83.70	Largely Achieved	Stop at level 2
APO12	82.50	Largely Achieved	Stop at level 2

Source: (Research Results, 2024)

Table 4 are the results of calculation of capability level from Level 2 to domain EDM 05, APO 08, and APO 12. It is seen that APO 08 and APO 12 got <85, that is to say where the process stop at level 2, while for domain EDM 05 > 85 it means the process go up to level 3.

Table 5. The Result of Calculation of Capability Level 3

Process	Score	Status	Information
EDM05	86.00	Fully Achieved	Procees to level 4

Source: (Research Results, 2024)

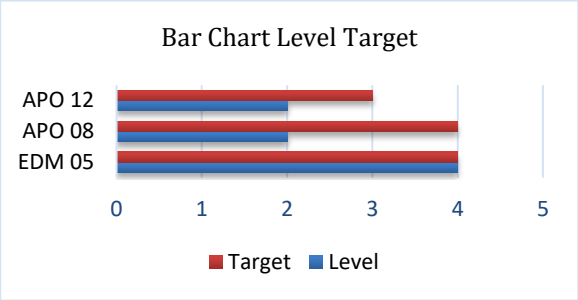
Table 5 describe that the result of EDM 05 in level 3 got more than 85, it mean EDM 5 go up to level 4.

Table 6. The Result of Calculation of Capability Level 4

Process	Score	Status	Information
EDM05	85.00	Fully Achieved	Stop at level 4

Source: (Research Results, 2024)

Table 6 explains that the result of calculating the capability level in EDM 05 for level 4 is 85 , where the process has reached the desired target, which is level 4.



Source : (Research Results, 2024)

Figure 2. Comparison of Capability Level

In Figure 2 explains that for the domain APO 08 and APO 12 have not reached the target level so they didn't get the level that they want,. As for EDM 05 has reached the desired target level.

In Table 7 the identified gaps in EDM05, APO08, and APO12 significantly impact the organization's operations. In EDM05, the absence of a fixed index for assessing employee report results leads to inconsistent and subjective evaluations, reducing employee motivation and trust in the assessment process. In APO08, the lack of a helpdesk or complaint service forces system users to visit the office directly to resolve issues, which is inefficient and negatively affects the user experience. Meanwhile, in APO12, an unorganized risk management process with documentation limited to logbooks makes the organization vulnerable to unidentified risks and hampers effective decision-making. The recommendations to create a fixed assessment index, establish a helpdesk service, and learn risk management methods will enhance consistency, improve efficiency, and strengthen the organization's risk management processes, creating a more productive and structured work environment.

Table 7. Gap analysis

Process	Current	Target	Gap	Recommendations
EDM05 Ensure stakeholder engagement	There is no fixed index for assessing employee report results	Has a fixed index for assessing employee report results	There is no permanent assessment index related to employee report results, it only focuses on work contracts	Create a permanent assessment index related to employee report results
APO08 Manage relationship	There is no complaint service or helpdesk	There is a complaint service or helpdesk for system users regarding the system used	There is no complaints system or helpdesk, if there is a problem the system user will come straight to the office	Create a helpdesk for system users
APO12 Manage risk	The risk management process is not yet organized	The risk management process is organized and well documented	There is no risk management using risk management methods, risk documentation is only in the form of a logbook	Learn risk management methods

Source: (Research Results, 2024)

Reporting

The reporting step involves assessing the level of proficiency based on the outcomes of interviews pertaining to activities within a specified field. Following the analysis of interview results and observations on the levels of competency, a conclusion is drawn in the form of findings and their impacts on the company. Additionally, recommendations for enhancing the company are provided.

Follow Up

In the follow-up stage, the researcher presents the audit document's results to the company, including the findings and recommendations derived from the interview outcomes. The paper includes the findings of the assessment of level 39 capabilities, as well as conclusions and recommendations about the identified implications. The recommendation stage consists of two components: recommendations for improvement, which are derived from the findings of each activity, and recommendations for increasing levels, which are based on activities at the next level that serve as the company's target level.

CONCLUSION

It is possible to draw the conclusion from the data that each domain under investigation has varying levels of capacity. The Regional Asset Management Agency did not meet the desired target level of level 2 for the APO 08 and APO 12 domains, but it did accomplish the aim of the desired level in EDM 05, which is level 4. The Public Asset Management Agency of Jakarta receives recommendations from the right based on the results of each sub-process within each domain, whilst the level of recommendations is determined by the activity at the target level in the i nginkan of each sub-process. It is hoped that by putting the suggestions into practice, the DKI Jakarta Regional Asset Management Agency will be able to raise the standard of IT governance inside the organization.

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