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Information Technology Governance Analysis Using the COBIT 2019 Framework at PT. Daya Adicipta Wisesa

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Abstract

Information Technology can determine competitiveness and the ability to improve performace, as well as enhance effectiveness and efficienc for businesses, IT Governance can be considered successful when it aligns with organizational goals and the implementation for IT itself. Therefore, it is necessary to evaluate its maturity level. COBIT 2019 is one of the audit frameworks that can be used to control the Governance of information technology. PT. Daya Adicipta Wisesa is the subject of this research, with the aim of determining whether the implemented IT Governance has the desired Capability Level and to indentify the level of gaps in IT Governance based on the COBIT 2019 framework. Ater analyzing the 11 design factors of COBIT 2019, seven priority onjectives were found to have a target capability level 4, which is 80% namely APO13, BAI04, DSS01, DSS02, DSS03, DSS04, and DSS05. Then, the capability level calculation was conducted, and the priority onbjectives were determined as follows: APO13 achieved capability level 5, BAI03 achieved capability level 4, DSS01 achieved capability level 5, DSS02 achieved capability level 5, DSS03 achieved capability level 4, DSS04 achieved capability level 5, and DSS05 acvieved capability level 4, with a rating of fully achieved for the process activity category.

Keywords: Information Technology, COBIT 2019, Capability Level, IT Governance.

1. Introduction

Information Technology (IT) has become a necessity for involvement in organizations today. Information technology can determine competitiveness, the ability to improve performance, as well as the effectiveness and efficiency of business practitioners. IT is now a technology adopted by nearly all organizations and is trusted to enhance the efficiency of various processes [1]. IT is a computer and communication technology that serves as a resource for companies. Information Technology allows companies to implement their own information systems to manage and facilitate every business process within the company. IT is a result of human engineering in the delivery of information from sender to receiver, making the transmission of information faster and wider in distribution, and also allowing for longer storage of information [2][3].

IT governance is a process that can provide value to stakeholders in a company or organization, where governance is used to monitor and guide decisions to be made about IT. IT governance is part of the governance of companies, organizations, schools, and governments related to information systems and technology, performance, and risk management [4]. IT governance is an arrangement of interconnected processes aimed at providing direction and controlling the organization in achieving its goals. IT governance must also be evaluated, as this can demonstrate the success and progress of IT, as well as analyze the effectiveness and efficiency of the applied information technology within the organization [5] [6][7].

IT governance can be considered successful if it aligns with the organization's goals and the implementation of IT itself. IT is currently receiving significant attention in supporting organizational performance improvement strategies. The implementation of IT must be determined by the right decisions to cope with rapid technological changes [8]. Well-structured IT governance can impact a company's trust and ensure existing assets for future investments [9]. In Indonesia, several researches also has been done such as auditing an non-profit or educational institution as well as for profit companies [10,11]

Information Technology Management (IT Governance) is a policy framework and a series of organizational processes aimed at ensuring that the implementation of Information Technology (IT) supports the achievement of organizational goals. One of the standards used to support IT governance is COBIT (Control Objectives for Information and Related Technology) [12]. COBIT is a framework that can address a wide range of issues because, in its use, it can provide an overview of IT strategy and governance, as well as modern thinking combined with resource management and techniques in IT implementation [13].

COBIT 2019 is a framework developed from the previous version, COBIT 5. This framework can be a comprehensive business management guide for IT governance in companies [10]. COBIT 2019 integrates new

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insights into corporate governance and management practices, providing principles, practices, analysis tools, and widely accepted models to enhance the value of information technology [14].
The design factor is a part of the COBIT framework that contains factors that can influence the design of a company's IT governance system and contribute to the success of IT implementation. The design factor is also the initial step in the COBIT framework to help researchers formulate questions for the company. The results of the design factor will be transformed into numbers that will be used as input in the next steps of the design toolkit, which will then produce objectives for each domain of COBIT 2019 [15].
PT. Daya Adicipta Wisesa is a company in the automotive industry that serves as the Main Dealer for Honda Motorcycles and genuine Honda Motorcycle parts in the North Sulawesi, Gorontalo, and North Maluku regions. The company uses its IT department to manage all company data, including customer data, market share data, and product data. All of this data is regularly analyzed to provide input into every strategic planning and even new innovation. This research aims to assess the information technology governance of PT. Daya Adicipta Wisesa by examining the factors that affect the company based on the design factor results. Through this research, the company can measure the performance of IT, allowing it to make improvements and enhancements in IT utilization, and enabling the company to achieve its business goals more effectively. This research is conducted to create an audit plan for the existing IT governance in the company using COBIT 2019. The company wants to determine whether the current IT governance has the expected capability level based on the assessment of COBIT 2019.

2. Research Method

This research uses the COBIT 2019 framework to measure the implementation of Information Technology (IT) by assessing the priority objectives obtained by the company to determine if they have reached the expected capability level.

2.1. Research Location

In this research, the chosen location as the object to obtain data from respondents is PT Daya Adicipta Wisesa, located at Jl. Raya Manado-Bitung KM 10, Jl. Raya Manado - Bitung No.KM, RW.10, Watutumou, Kec. Kalawat, Kabupaten Minahasa Utara, Sulawesi Utara, Indonesia.

2.2. Research Design

The research design is created to outline the research methodology and serve as a foundation for the researcher to conduct the study. Based on the diagram, the researcher employs 10 design factors from the COBIT 2019 framework to obtain priority objectives from the company. The result of these design factors will be in the form of an IT governance design result graph to display the percentage of all priority objectives. Priority objectives with a percentage of 80% or level 4 will be evaluated. The evaluation consists of assessing the capability level of each priority objective [16].

2.3. Data Gathering

All research data are primary sources collected through direct observation and interviews. The data collection technique employed is qualitative, with two stages of data collection:

1. Observation: During this stage, the researcher observes how the company operates and manages its IT.
2. Interviews: In this stage, the researcher directly asks questions to relevant stakeholders, specifically the IT department staff responsible for IT governance at PT. Daya Adicipta Wisesa.

2.4. Data Analysis Technique

The data analysis technique is conducted through qualitative descriptive analysis with the following steps: data collection, data reduction, data presentation, data interpretation, and drawing conclusions or verification to describe the capability level and gaps in IT governance at PT. Daya Adicipta Wisesa. This is achieved by measuring based on the COBIT 2019 framework with a qualitative approach.
Additionally, the method used for calculating activities within each priority objective to determine the capability level is based on the NPLF (Normalized Process Level Factor) formula, a statistical formula provided by the COBIT 2019 framework. The NPLF method is used to determine the capability level of a process. The process of rating capability levels based on the NPLF method can be seen in Table I.

Table 1. NPLF Table [17]

Rating	Percentage
F – Fully	85% - 100%
L – Largely	50% - 85%
P – Partially	15% - 50%
N – Not	0% - 15%

$$\frac{Jumlah\ Aktivitas\ Yang\ dilakukan\ (Y)}{Jumlah\ Aktivitas} \times 100\% = \ldots\% \quad (1)$$

Description about the above table as follows. “Not” refers to the level of implementation where there is no action taken or the element is entirely absent. “Partially” indicates that implementation steps have been taken, but implementation is still limited or incomplete. “Largely” refers to a significant or substantial level of implementation. However, there is still room for improvement or further development. “Fully” indicates that the organization has achieved a complete and comprehensive level of implementation of the element within the evaluated COBIT domain or process.

3. Results and Discussion

3.1. Design Factor

Based on the results of Design Factor 1 - enterprise strategy, PT. Daya Adicipta Wisesa is a company engaged in the distribution and sales of motorcycles, with its primary focus on customer service (Client Service) by providing stable services (Stability) to support IT for the company's networks to meet targets and for customer service using applications developed by the company to provide the best service. This is followed by a secondary focus on Cost Leadership. Therefore, Client Service/Stability and Cost Leadership are the primary and secondary strategies of this company. Meanwhile on design Factor 2 - Enterprise Goals: The researcher found that there are three highly important goals that are valued at level five, which are EG01, EG02, and EG07. In these three values, the company places emphasis on financial and customer aspects due to the importance of creating competitive products and services, managing manageable business risks, and the quality of information management.

On Design Factor 3 - Risk Profile: There are eight risks classified as very high risk, including risks related to Program & Projects Life Cycle Management, Enterprise/IT Architecture, Software Adoption/Usage Problems, Hardware Incidents, Logical Attacks (hacking, malware, etc.), Noncompliance, Acts of Nature, and Data & Information Management. On the other hand, Design Factor 4 - IT-Related Issues: In PT. Daya Adicipta Wisesa, there are two serious issues. Firstly, there are significant incidents related to IT, such as data loss, security breaches, project failures, application errors, primarily due to the performance of the company's IT employees. Secondly, changes or projects initiated by IT often fail to meet business needs and are delivered late or exceed budget expectations because the company has previously used vendor applications that did not perform well and incurred significant development costs.

Design Factor 5 - Threat Level: To determine the threat level at PT. Daya Adicipta Wisesa, it can be observed in design factor 5 with a 40% high threat level and a 60% normal threat level. Meanwhile, Design Factor 6 - Compliance Level: To assess compliance at PT. Daya Adicipta Wisesa, design factor 6 indicates a 20% high compliance level, a 60% normal compliance level, and a 20% low compliance level. Furthermore, Design Factor 7 - Role of IT: The company uses IT as a strategic asset in its operational processes. This is because IT is not merely a support function but plays a crucial role, supporting each project of the company. PT. Daya Adicipta Wisesa assigns IT a strategic role with a value of 5, making it a primary value.

Design Factor 8 - Sourcing Model for IT: The company predominantly uses an insourced model, accounting for 70% of its IT sourcing. This is based on the fact that the company utilizes its own IT staff to provide infrastructure for the company. Cloud-based solutions represent 30% of the sourcing model, while the outsourcing model is not used at all (0%). On the other hand, Design Factor 9 - Importance of IT Implementation Methods: Based on interviews with respondents, it is revealed that PT. Daya Adicipta Wisesa primarily focuses on the DevOps method with a 70% adoption rate. The Agile method represents 15%, and the traditional method represents 15%. This is because the company develops and operates systems internally. Laslty, Design Factor 10 - Technology Adoption Strategy: Based on interview results, PT. Daya Adicipta Wisesa's technology adoption strategy is divided into 50% as a first mover, 40% as a follower, and 10% as a slow adopter.

3.2. IT Governance Design Result

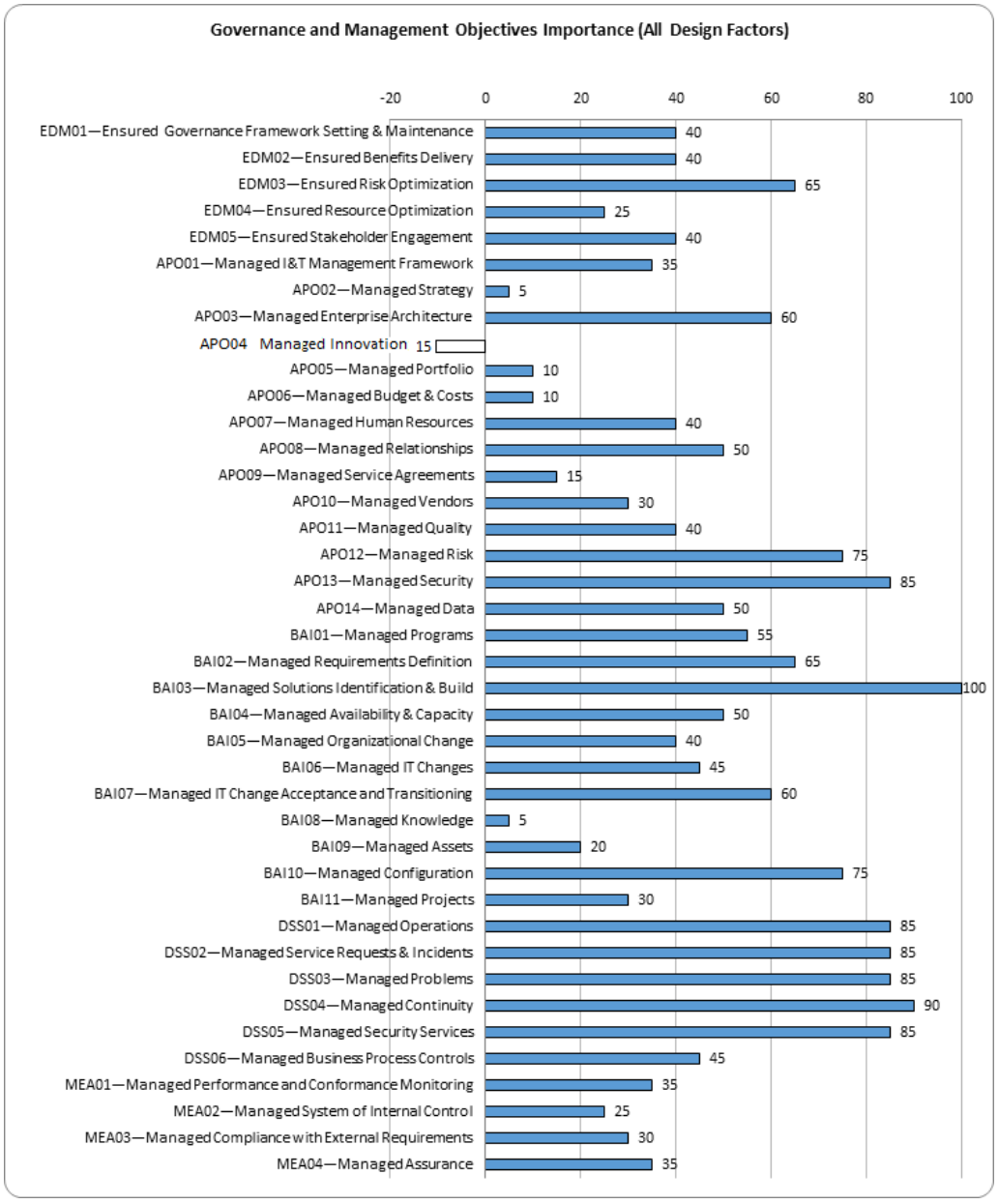

Figure 1. Results of design factors analysis showing each objectives importance

After completing the assessment using the COBIT 2019 framework across all ten design factor toolkits, seven objectives emerged as top priorities for the company, each scoring 80% or higher. These seven crucial objectives are APO13 – Managed Security, BAI03 – Managed Solutions Identification and Build, DSS01 – Managed Operations, DSS02 – Managed Service Requests and Incidents, DSS03 – Managed Problems, DSS04 – Managed Continuity, and DSS05 – Managed Security Services. These objectives signify areas of paramount importance, reflecting the company's strong focus on various facets of IT management and security as shown on Figure 1.

3.3. Core Model Evaluation

Following interviews and calculations using NPLF for each priority objective, the researcher found that the priority objectives BAI03 - Managed Solutions Identification and Build and DSS05 – Managed Security Services are at capability level 4 with a rating category of fully achieved. Meanwhile, the priority objectives APO13 – Manage Security, DSS01 – Managed Operations, DSS02 – Managed Service Requests and Incidents, DSS03 – Managed Problems, and DSS04 – Managed Continuity are at capability level 5, also with a rating category of fully achieved. This indicates a high level of capability and successful implementation in these areas as shown on Table II.

Table 2. Rating for Prioritized Activities

No	Objectives Prioritas	Expected Capability Level	Current Capability Level	Rating Performance Activity
1	APO13 - Managed Security	4	5	Fully Achieved
2	BA103 - Managed Solutions Identification and Build	4	4	Fully Achieved
3	DSS01 Managed Operations	4	5	Fully Achieved
4	DSS02 Managed Service Requests and Incidents	4	5	Fully Achieved
5	DSS03 Managed Problems	4	4	Fully Achieved
6	DSS04 Managed Continuity	4	5	Fully Achieved
7	DSS05 Managed Security Services	4	4	Fully Achieved

4. Conclusion

The assessment of current capability levels compared to expected capability levels reveals no gaps, as the expected capability level matches the result of the calculation for the current capability level, which is Level 4 and 5. The gap identified in this research, particularly in the results of priority objectives, is the absence of priority objectives from the EDM (Evaluate, Direct, and Monitor) domain, which falls under the governance category of IT governance. This result aligns with the company's situation, as PT DAW does not have a dedicated department for governance oversight.

The results obtained from this research on PT Daya Adicipta Wisesa indicate that the company has good control in the implementation of information technology and has successfully met the standards of COBIT 2019, especially in the seven priority objectives that have achieved values of 80% or higher. A recommendation that can be given by the researcher to PT Daya Adicipta Wisesa is that during routine general audits, the IT department can propose using COBIT 2019 as the framework for the company's IT governance because the framework used by the company appears to have similarities with COBIT 2019. The reason for this recommendation is that the company believes that the framework it currently uses meets best practices for the company's business processes. However, based on the assessment of COBIT 2019, there are still priority objectives that have not achieved a percentage score of 80%. Additionally, based on the results of the priority objectives, the company can consider creating a specialized department to handle IT governance. This would help improve objectives related to IT governance that are not currently a priority for the company or have not achieved an 80% score according to the COBIT 2019 toolkit. This suggestions is aligned with [18][19]. This could enhance the company's ability to manage IT resources more efficiently and effectively [20].

Another recommendation that the researcher can provide is for the company to involve other respondents from the IT department to gain broader insights into the activities being assessed.

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