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Information Technology Governance Audit at PT. Pelabuhan Indonesia III (Persero) with COBIT 5 Framework

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ABSTRACT

PT Pelabuhan Indonesia III (Pelindo 3) is improving its customer services by developing Information Technology (IT) solutions. The Sub Directorate Information Technology and Communication (Subdit TIK) Pelindo 3 implements IT Governance that has been regularly evaluated to optimize and align the solution developed to the company's business strategy. This research aims to obtain a measure of the current and expected capabilities of the IT process, specifically in Subdit TIK Pelindo 3, and to get recommendations to align IT governance with Pelindo 3's business strategy. The research method used is the COBIT 5 framework. The collected data is processed using a weighting method on the RACI Chart and a median value method for IT capability value. The result shows that the IT management capability level implemented in Subdit TIK Pelindo 3 mostly reaches only level 1, while the anticipated capability in 2018 is level 3. It means the company has not currently implemented a defined process or failed to achieve the objectives of the process. In this research, recommendations are developed to improve process capabilities to achieve the targeted capability level of IT management.

KEYWORDS: Audit IT, COBIT 5, IT Governance

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1. INTRODUCTION

Many companies invest in Information Technology (IT) to increase their profit and competitiveness. The IT provides business project investment opportunities to provide high returns on investment). The success of corporate governance depends on the effectiveness of organizing and controlling IT to ensure the expected results of the process are realized. The effectiveness of IT governance makes business profits such as reputation, trust, product excellence, and cost reduction. To ensure that good governance is implemented and running, an evaluation (audit) is required to ensure that all IT management mechanisms align with the company's business objective and strategy.

COBIT 5 is a framework built on five basic principles, discussed in detail, and includes a broad guide form on corporate governance and IT management enablers. COBIT 5 provides a comprehensive framework that can assist organizations in achieving their goals for governance and IT management (ISACA, 2012).

PT Pelabuhan Indonesia III (Persero), also known as Pelindo 3, is a state-owned enterprise (BUMN) that runs the port services business as a port operator. To improve the quality of services, Pelindo 3 has developed IT both in infrastructure and superstructure. Pelindo 3 has implemented IT governance to make its development more optimal and aligned with its business strategy. An evaluation/audit is required to align the IT governance with corporate objectives.

2. LITERATURE REVIEW

PT Pelabuhan Indonesia III (Persero)

PT Pelabuhan Indonesia III (Persero), better known as Pelindo 3, is one of the State-Owned Enterprises (BUMN) that runs the port services business as a port operator. To optimize the process and IT, Pelindo 3 has implemented IT policies and governance stipulated through regulation of Board of Directors number PER.22.1/ OS.0102/ P.III-2015 concerning Information Technology Operational Policy at PT Pelabuhan Indonesia III (Persero) and PER.02/ OS.0203/ P.III-2013 concerning Information Technology and Communication Governance in PT Pelabuhan Indonesia III (Persero). The governance is enhanced by the decision of the Board of Directors number PER.96/ OS.0102/ P.III-2014 on Information Technology Governance at PT Pelabuhan Indonesia III (Persero).

IT Governance

Van Grambergen, through his definition statement, shows that IT management is also an important player in the IT management of a company(De Haes & Van Grembergen, 2005). However, there is a clear distinction between IT governance and IT management. IT management focuses on providing effective IT services and products and operations management. At the same time, IT governance has a wider reach and concentrates on IT actions and changes to meet current and future business enterprise needs. Another definition, as stated by ITGI, also states that IT governance is an integral

part of corporate or corporate governance. ITGI's Board Briefing on IT Governance believes that IT governance is responsible for part of a broad framework of corporate governance. ITGI's Board Briefing on IT Governance also states that the board should handle IT governance like any other strategic agenda (De Haes & Van Grembergen, 2005).

COBIT 5

COBIT is a best practice guide for information technology management. COBIT is important in initiating the audit process, especially in the relevant areas and at high risk. The audit objectivity analysis can be initiated by identifying IT process goals contained in multiple domains. The auditor may also use COBIT as additional material to determine the procedures of the audit process. During an investigation, COBIT determines if each IT process goal has been prepared / set/run. In addition, COBIT can also be used by the auditor to determine whether the desired criteria of a process have been determined and to know whether the existing process has included related aspects (Suhardi, 2011).

COBIT 5 divides the existing enterprise process reference model into two parts: the governance and management sections that can be seen in the following explanation (Diharja, 2013)

Governance

Where conditions and options are always evaluated to determine agreed corporate objectives according to their priorities and decision-making, overall governance is the board of directors' responsibility. More specific governance can be delegated to a specialized division on a complex organizational structure. The reference models part of governance control are Evaluate, Direct, and Monitoring (EDM).

Management

Management performs planning, building, running, and monitoring the existing activities to align the direction of corporate objectives by determining the governance body. Generally, the one responsible for managing management in a company is the executive management under the CEO. The reference model incorporated in the management control is as follows:

1. Align, Plan, and Organize (APO)
2. Build, Acquire and Implement (BAI)
3. Deliver, Service and Support (DSS)
4. Monitor, Evaluate and Assess (MEA)

COBIT 5 defines a process in a lifecycle (a process reference model) and an architecture that describes the relationships between processes. At the same time, the capability dimension provides a measure of the ability of a process to meet current business objectives or company projections for the process. Capability processes are expressed in process attributes grouped into six levels of capability. The degree of capability of a process is determined based on the attainment of certain attribute processes according to ISO / IEC 15504-2: 2003 (Samiotakis, 2013)

The explanation of the six levels of capability is as follows(Fitri, 2015) :

1. Level 0 - Incomplete Process.
   At this level, the process is not implemented or fails to achieve its process purpose.
2. Level 1 - Performed Process. The process has been implemented at this level, and IT objectives have been achieved.
3. Level 2 - Managed Process.
   At this stage, the company manages the implementation of well-managed processes, including better planning, evaluation, and adaptation processes.
4. Level 3- Establish Process.
   At this level, the company already has standardized processes in the organization.
5. Level 4- Predictable Process.
   At the enterprise level, has been running the IT process within definite limits to achieve the results of the process.
6. Level 5- Optimizing Process.
   At this level, the company has innovated to improve the implementation of IT processes and continuous improvement to meet prominent business objectives and relevance.

3. METHODS

Literature Review

This step searches a relevant reference process for existing cases or problems found in the study. References can be derived from books, journals, research reports, articles, and sites on the internet. Outputs or results obtained from this process are relevant references to formulating the problem derived from the research.

COBIT Domain Selection Process

The selection of domains in COBIT is a process undertaken to identify the circumstances and business achievements the company wants to be mapped into multiple domains based on COBIT 5 guidance, consisting of Enterprise Goal Identification, IT Goal Identification, Domain, and IT Process Identification. The result of COBIT domain selection can be seen in Table 1.

TABLE 1. Domain and IT Process chosen.

IT Process	
Evaluate, Direct, and Monitor	
EDM01	Ensure Governance Framework Setting and Maintenance
EDM02	Ensure Benefits Delivery
EDM03	Ensure Risk Optimisation
EDM04	Ensure Resource Optimisation
EDM05	Ensure Stakeholder Transparency

IT Process	
Align, Plan and Organise	
APO01	Manage the IT Management Framework
APO02	Manage Strategy
APO03	Manage Enterprise Architecture
APO04	Manage Innovation
APO05	Manage Portfolio
APO06	Manage Budget and Costs
APO07	Manage Human Resources
APO08	Manage Relationships
APO09	Manage Service Agreements
APO10	Manage Suppliers
APO11	Manage Quality
APO12	Manage Risk
APO13	Manage Security
Build, Acquire, and Implement	
BAI01	Manage Programmes and Projects
BAI02	Manage Requirements Definition
BAI03	Manage Solutions Identification and Build
BAI04	Manage Availability and Capacity
BAI05	Manage Organisational Change Enablement
BAI06	Manage Changes
BAI07	Manage Change Acceptance and Transitioning
BAI08	Manage Knowledge
BAI09	Manage Assets
BAI10	Manage Configuration
Deliver, Service and Support	
DSS01	Manage Operations
DSS02	Manage Service Requests and Incidents
DSS03	Manage Problems
DSS04	Manage Continuity
DSS05	Manage Security Services
DSS06	Manage Business Process Controls
Monitor, Evaluate and Assess	
MEA01	Monitor, Evaluate and Assess Performance and Conformance
MEA02	Monitor, Evaluate and Assess the System of Internal Control
MEA03	Monitor, Evaluate and Assess Compliance with External Requirements

Data Collecting

The data was collected by distributing questionnaires based on the COBIT 5 framework to 16 respondents according to the role mapping of RACI Cart COBIT and the company's role.

Data Processing and Analysis

Data processing was done by executing a validity and reliability test using SPSS software to know the consistency and validity of the result of the questionnaire obtained, after which Capacity Level and Gap were analyzed.

4. RESULTS

The validity test results on 37 domains and selected IT processes show valid results, and so is the reliability test. All the selected domains and IT processes show reliable results. The gap between current and anticipated IT capability levels shown in Figure 1.

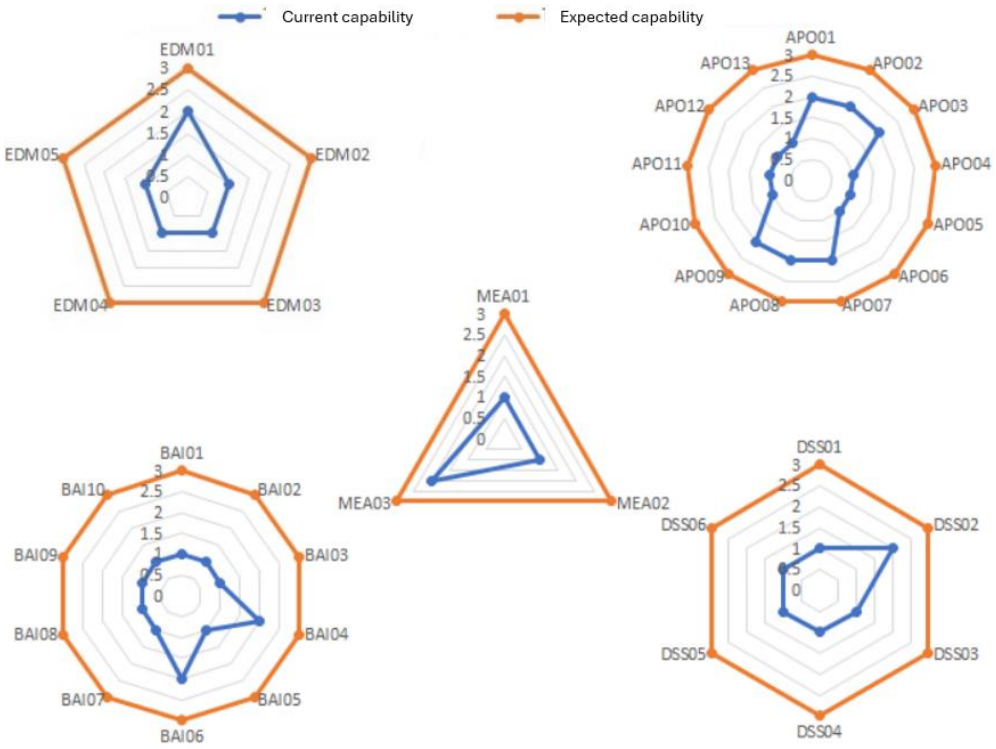

FIGURE 1. Graph of Capability Gap

From COBIT-based analysis conducted on the selected 37 domain and IT processes, there are 26 domains and IT processes successfully reached level 1 or performed, such as EDM02, EDM03, EDM04, EDM05, APO04, APO05, APO06, APO10, APO11, APO12, BAI01, BAI02, BAI03, BAI05, BAI07, BAI08, BAI09, BAI10, DSS01, DSS03, DSS04, DSS05, DSS06, MEA01, MEA02. It shows that Pelindo 3 has implemented and achieved the goal of the existing IT processes. There is also evidence of a systematic approach and significant achievement of the attributes defined in this process. On the other hand, there are 11 domains and IT processes that reach level 2 or managed, such as EDM01, APO01, APO02, APO03, APO07, APO08, APO09, BAI04, BAI06, DSS02, MEA03. This result describes that

Pelindo 3 has implemented and achieved the goal of the existing IT processes. A systematic approach and a significant achievement of the attributes defined in this process were also depicted in the result. As for the expected capabilities, Pelindo 3 targets level 3 has been reached in 2018. This indicates that the executed and running processes are well managed and stable.

5. CONCLUSIONS

Conclusion

7. Based on the analysis performed, 26 out of 37 domains and IT processes successfully reached level 1 (performed), and the other 11 domains and IT processes managed to reach level 2 (managed).
8. There is a significant gap between the current and anticipated level of IT management capabilities in 37 domains and IT processes analyzed; 26 have two levels gap, while the remaining 11 domains and IT processes have 1 level gap. It shows that the management of IT resources implemented by Pelindo 3 is still far from or has not been aligned with the targeted capability for both short and long-term targets.

Recommendation

1. Pelindo 3 needs to be more focused on improving the domain capability selected, and it is advisable to select more specific domains.
2. Pelindo 3 needs to improve its current capability to match the expected level, and it is recommended that Pelindo 3 implement the recommendations.

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