

Project Management Information System Audit with COBIT 5 Framework Focused on DSS Domains

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Abstract Information system management as a recording media for transactions, especially a construction project, is a management and financial strength for the company. Poor IT governance can cause various problems to arise and harm related parties that lead to company failures and losses. Auditing Information system is conducted to find the value of the maturity level of a management of information technology management in a company to fix existing problems. This study conducted an audit process on a project management information system with Cobit 5 Framework focusing on DSS domain. Study case is PT.K a contracting companies with the results of the capability level at the company is 2.16 and requires a quick fix on the DSS05 process.

Index Terms— Cobit 5, Delivery Service Support, Information System, Information System Audit

I. INTRODUCTION¹

A contracting company must have a warehouse to store the goods and equipment needed. The strategy of buying large quantities of material in order to get a cheaper price is usually done by activists of contracting businesses so that warehouse management needs are very high. Along the warehouse physical needs, the role of information technology is very important in management process [1] and by using IT has also improve business effectiveness and efficiency [2].

Problems arise in the management of goods in a warehouse. The occurrence of differences number of stocks of the goods recorded in the information system with the physical number of goods in the warehouse which results in unnecessary expenses because goods / tools are available in the warehouse. This also results in differences in the cash flow of expenditure transactions at the management level with the warehouse so that the analysis process must be carried out to find the location of the problem and at the same time find a solution to the problem by conducting an Audit [3].

This study aims to analyze the problems that exist in the contracting company PT. K. Problem analysis is done by conducting an audit focusing on the DSS domain part of Cobit 5 framework.

II. LITERATURE STUDY

A. Information System Audit

Information system audits are basically one form of operational audit, but over time, the information system audit has become its own type which has the main purpose of evaluating how IT management in a company [4].

B. Cobit

COBIT is a framework for building an IT Governance. By referring to the COBIT framework, an organization is expected to be able to implement IT governance in achieving its objectives IT governance integrates the optimal way of planning and organizing processes, implementing, supporting and monitoring Information Technology performance processes. COBIT has functions, which is as follow [5]:

1. Improve audit approaches / programs.
2. Supports work audits with detailed audit directions
3. Provide guidance for IT governance.
4. As a benchmark assessment for Information Systems / Information Technology controls.
5. Improve control of Information Systems / Information Technology.
6. As a standardization of audit approaches / programs

C. Cobit 5

COBIT 5 enables information technology to conduct governance and management holistically for the entire enterprise, managing business from end to end, responsible for the entire area of information technology functions. In addition, COBIT 5 provides facilities within the scope of internal and external stakeholders. COBIT 5 behaves globally and benefits all enterprises with a variety of scales, both commercial, non-profit, and the public sector. COBIT 5 has five principles [6] which is as follows:

- Principle 1: Find stakeholder needs
- Principle 2: Covers the end to end of the enterprise
- Principle 3: Applying a single, integrating framework
- Principle 4: Activate a holistic approach
- Principle 5: Separating governance from management

D. DSS Domain

This domain focuses on how a technology is maximally transferred to an organization accompanied by support for effective and efficient implementation and integration of IT in a business process. This domain consists of 6 (six) processes. The information technology process in the DSS domain (Deliver, Service, and Support) based on COBIT 5 is as follows [7]:

- DSS01: Manage Operations
- DSS02: Manage Services Request and Incidents
- DSS03: Manage Problems
- DSS04: Manage Continuity
- DSS05: Manage Security Services
- DSS06: Manage Business Process Controls

E. Capability Level

The level of capability in COBIT 5 is divided into 6 levels, namely:

1. Incomplete process
2. Performed process
3. Managed process
4. Established process
5. Predictable process
6. Optimizing process

III. RESEARCH METHODOLOGY

The research framework used in this study is as follows.



Figure 1 Research Methodology

IV. RESULT AND DISCUSSIONS

Based on the results of observations on the company three problems were found in the resource management section, namely:

- Accuracy of cash disbursements with company-owned funds is different
- Difference in the physical amount of goods in the warehouse to the amount recorded on the system.
- Expenditures that are not needed occur, purchase goods with the condition of the goods available in the warehouse.

Audit using Cobit framework starts with identifying Enterprise Goals. Identification of company goals is to ensure the security of assets and resources owned in the warehouse and optimize the process of calculating stock and inventory so that there is no excessive expenditure on existing / existing tools / materials. That fall into 4 (four) categories of enterprise goals in the framework Cobit.

Table 1 Identify Enterprise Goals

No	Enterprise goals	Dimension
3	Managed business risk (safeguarding of assets)	Financial
11	Optimization of business process functionality	Internal
14	Operational and staff productivity	Internal
16	Skilled and motivated people	Learning and Growth

The next step is to do an IT-Related Goals group based on Enterprise Goals.

Table 2 Mapping IT-Related Goals

No	IT-Related Goals
1	Alignment of IT and business strategy
4	Managed IT-related business risk
7	Delivery of IT services in line with business requirements
8	Adequate use of applications, information and technology solutions
9	IT agility
10	Security of information, processing infrastructure and applications
12	Enablement and support of business processes by integrating applications and technology into business processes
16	Competent and motivated business and IT personnel

The next step is to group IT-Process on the DSS domain with IT-Related Goals

Table 3 Mapping IT-Process Against IT Related Goals

IT-Related Goals	DSS
Alignment of IT and business strategy	
Managed IT-related business risk	01,02,03, 04,05,06
Delivery of IT services in line with business requirements	01,02,03, 04,06
Adequate use of applications, information and technology solutions	

IT-Related Goals	DSS
IT agility	
Security of information, processing infrastructure and applications	05
Enablement and support of business processes by integrating applications and technology into business processes	
Competent and motivated business and IT personnel	05

The preparation of questionnaires was made based on the chosen process, namely DSS 01 to DSS 06. Respondents in this questionnaire can be seen in the following table.

Table 4 Respondents List

No	Respondent	Number of Person
1	Project Manager	1 Person
2	Financial Admin	2 Persons
3	Warehouse Admin	1 Person

Calculation of capability level was carried out after all respondents collected questionnaires. DSS05 is not implemented, because system access rights are open to all users, and the server used by one of the computers used by the financial admin (Process not used).

Table 5 Capability Level Assessment

DSS01 Manage Operation										
No	Responden	Lv 1	Lv 2.1	Lv 2.2	Lv 3.1	Lv 3.2	Lv 4.1	Lv 4.2	Lv 5.1	Lv 5.2
1	Project Manager	95	90	90	87	85				
2	Financial Admin 1	96	92	90	88	86				
3	Financial Admin 2	90	85	85	90	80				
4	Warehouse Admin	90	92	87	80	85				
	Average Level	92.75	89.75	88	86.25	84	0	0	0	0
DSS02 Manage Service Requests and Incidents										
No	Responden	Lv 1	Lv 2.1	Lv 2.2	Lv 3.1	Lv 3.2	Lv 4.1	Lv 4.2	Lv 5.1	Lv 5.2
1	Project Manager	98	90	90	85	85	80			
2	Financial Admin 1	85	87	90	87	85	82			
3	Financial Admin 2	90	95	87	88	90	85			
4	Warehouse Admin	90	85	86	90	92	85			
	Average Level	90.75	89.25	88.25	87.5	88	83	0	0	0
DSS03 Manage Problems										
No	Responden	Lv 1	Lv 2.1	Lv 2.2	Lv 3.1	Lv 3.2	Lv 4.1	Lv 4.2	Lv 5.1	Lv 5.2
1	Project Manager	85	90							
2	Financial Admin 1	88	80							
3	Financial Admin 2	90	78							
4	Warehouse Admin	90	90							
	Average Level	88.25	84.5	0	0	0	0	0	0	0

DSS04 Manage Continuity										
No	Responden	Lv 1	Lv 2.1	Lv 2.2	Lv 3.1	Lv 3.2	Lv 4.1	Lv 4.2	Lv 5.1	Lv 5.2
1	Project Manager	95	92	90	94	90	85	80		
2	Financial Admin 1	90	98	85	90	89	95	90		
3	Financial Admin 2	88	95	82	89	90	87	84		
4	Warehouse Admin	95	90	90	90	90	89	80		
	Average Level	92	93.75	86.75	90.75	89.75	89	83.5	0	0

DSS06 Manage Business Process Controls										
No	Responden	Lv 1	Lv 2.1	Lv 2.2	Lv 3.1	Lv 3.2	Lv 4.1	Lv 4.2	Lv 5.1	Lv 5.2
1	Project Manager	85	90	90	85					
2	Financial Admin 1	86	88	85	80					
3	Financial Admin 2	90	85	85	84					
4	Warehouse Admin	95	90	90	88					
	Average Level	89	88.25	87.5	84.25	0	0	0	0	0

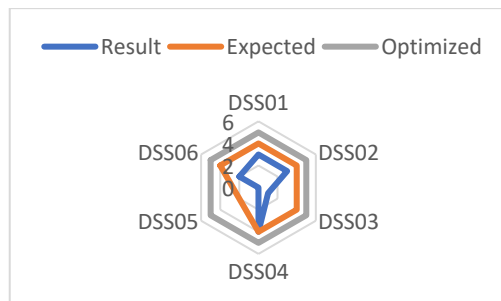


Figure 2 Capability Level Diagram

V. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusion

Conclusions that can be drawn from the results of the audit at PT. K that the problems that exist in the company due to the level of IT governance capabilities of PT. K is at 2.16. This figure means that IT governance at PT. K is implemented quite well but still has a problem. Recommendations are given in accordance with the results of the analysis in the hope that the company can achieve the expected level of capability by making improvements to IT processes that have the greatest capability value gap. The following table is a table containing recommendations for each domain.

B. Recommendations

Analysis Result	Recommendations
DSS01. Manage Operations	
Reports in the financial and warehouse section are inaccurate with the actual amount of funds and the physical amount of goods in the warehouse	Each process of inputting funds and income, must be included with the purchase note and printed proof of expenditure. As well as the expenditure of goods in the warehouse are required to do reporting or recording through the media. So that it can be seen how the performance of IT governance is running.
DSS02. Manage Service Request and Incident	
Reports in the warehouse section are incomplete, there are several processes that cannot be documented into the system.	Every process that occurs in the warehouse must be documented to determine the performance of IT governance that is running
DSS03. Manage Problems	
Every current documentation process must be reported in advance to the internal department in charge of recording the report on the system	System renewal needs to be made so that it can be accessed by several users who currently cannot be registered in the system because the categories and privileges are still static and system migration to online services is needed so that it can be accessed anytime and anywhere.
DSS04. Manage Continuity	

Analysis Result	Recommendations
Financial and warehouse flow reports are inaccurate, there are several business processes that are not documented (Access Log Report)	Every process that occurs in the warehouse must be documented to determine the performance of IT governance that is running
DSS05. Manage Security Services	
Implementation on the system does not provide the level of access rights to the user, and the database / server is placed in a computer that can be used by anyone in the company.	It is necessary to implement privileged maintenance modules to provide restrictions on access to system users in accordance with the position and to place the server into a computer that can only be accessed by the IT management team so that they can know the performance of IT governance that is running
DSS06. Manage Business Process Controls	
In the management of data in the business process the company has been running, but without using standards, so most of the reports produced are not in accordance with the real processes that occur.	Required policies with appropriate standards so that business processes that occur can be documented into the system correctly to support the achievement of the company

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