
Goods Procurement Audit System Information At PT. Global Satria Aji

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ABSTRACT

As an effort to realize ideal information for companies, the implementation of reliable information technology governance is needed by companies. This study aims to audit the application of information technology governance of the goods procurement system at PT. Global Satria Aji, because the company PT. Satria Aji Global wants to check profit or loss and also wants to minimize losses related to the goods procurement system. The problem that is often experienced by companies is a system that is deemed unable to accommodate all the data needed when incoming data increases. This study uses the COBIT 5 framework using the EDM01, APO01, APO02, APO07, DSS01 and MEA01 process domains. The calculation of the average maturity level of the six domains used is 1.58 in decimal numbers or 158% in percent. In the study it was found that the biggest discrepancy occurred in the APO01 domain where the difference between the expected conditions and the conditions that occurred reached 2.04. The recommended improvement is to provide a consistent management approach so as to enable corporate governance requirements to be met.

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INTRODUCTION

PT. Global Satria Aji was founded in 1999. The company is engaged in chemical manufacturing and is an authorized distributor of Merck Chemicals and Life Sciences and Sigma-Aldrich. This company has implemented information technology governance for each of its operational activities including goods procurement activities. Every company, both in the industrial and service sectors, is inseparable from the procurement of goods to meet production needs (Jubaedah & Suprastiyo, 2022). The information generated from data procurement management must be in accordance with the ongoing activities so that the activities are under control. Problems that often occur in PT. Global Satria Aji is a system that cannot accommodate all the data needed when incoming data increases. Therefore, the company wants to review the information technology that has been implemented and evaluate it to make improvements.

Based on the problems described above, it is necessary to evaluate IT governance by conducting information system audit activities at PT. GlobalSatria

Aji. An information system audit is an activity of collecting and analyzing existing evidence to determine the ability of information technology systems to safeguard assets, maintain data integrity, help achieve the company's vision effectively and efficiently utilize available resources (Zena et al., 2021)

In its activities, audit system information can be assisted by a framework or framework as a reference to produce valid and reliable measurements. The framework used in this study is COBIT 5. COBIT 5 was chosen because this framework has broad coverage in IT management and has a detailed description of processes and activities (Darwis et al., 2021). So that you can not only evaluate it but also provide solutions and recommendations that can be used for future improvements.

Information system audit is an activity to find and assess evidence to show whether information technology systems are capable of securing assets, integrating data, helping companies achieve

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an ineffective vision and utilize resources efficiently (Doharma et al., 2021)

We can conclude that an information system audit is an activity carried out to assess whether a system is able to secure assets, integrate data, implement the right system and utilize resources efficiently.

The overall information system audit objectives are:

1. Securing Assets

A good internal control system helps prevent misuse of company information assets. Company information assets that must be maintained such as software, hardware, human resources, and files or data. These assets must be guaranteed security.

2. System Effectiveness

The effectiveness of the information system is said to be good if the system meets user needs.

3. System Efficiency

This is when resources have limited capacity.

4. Availability

Availability of IT capable of supporting business operations on an ongoing basis

5. Confidentiality

Focusing on protecting information from being accessed by unauthorized parties.

6. Reliability

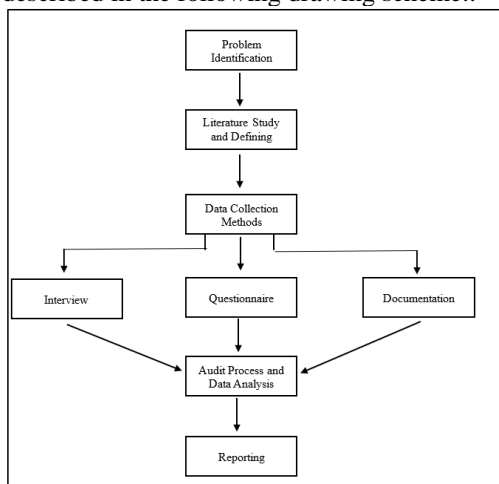
Management accuracy in organizational governance, reporting and accountability.

7. Maintain Data Integrity

Data integrity is a basic concept of information systems. Data has certain characteristics in the form of completeness, authenticity and accuracy (Eva Zuraidah, 2020)

RESEARCH METHOD

The stages of the research carried out are described in the following drawing scheme:



Source: (Fahriah & Rahmayu, 2023)

Figure 1. Research Stages

A. Problem Identification

To identify the problem, the authors made observations at PT. Global Satria Aji. Location This research was conducted at PT. Global Satria Aji,

which is located at Rawamangun Muka Raya Street number. 1, Pulogadung, Jakarta. ID. 13220.

B. Literature Study and Defining Domains

At this stage the authors reviewed material relevant to the research being conducted, material obtained from relevant books and journals. At this stage the author also determines the domain to be used based on the information the author has collected. Domain determination is done in the following way:

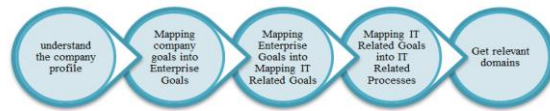


Figure 2. Domain Defining Flow

1. Understand the company profile

Here the author tries to better understand the company profile based on the observations and interviews that have been conducted.

2. Mapping company goals into enterprise goals

From mapping company goals into Enterprise goals, the authors get the relationship between company vision and the most relevant Enterprise goals, the Enterprise goals obtained have been tagged and can be seen in the following figure:

Table 1. Enterprise Goal

BSC Dimension	Enterprise Goal	Relation to Governance		
		Objectives	Benefits	Risk
		Resource Realisation	Optimisation	
Financial	1. Stakeholder value of business investments	P	P	S
	2. Portfolio of competitive products and services	P	P	S
	3. Managed business risk (safeguarding of assets)		P	S
	4. Compliance with external laws and regulations		P	
	5. Financial transparency	P	S	S
Customer	6. Customer-oriented service culture	P		S
	7. Business service continuity and availability		P	
	8. Agile responses to a changing business environment	P	P	P
	9. Information-based strategic decision making	P		P
Internal	10. Optimisation of service delivery costs			
	11. Optimisation of business process functionality	P		P
	12. Optimisation of business process costs	P		P
	13. Managed business change programmes	P	P	S
	14. Operational and staff productivity	P		P
Learning and Growth	15. Compliance with internal policies		P	
	16. Skilled and motivated people	S	P	P
	17. Product and business innovation culture	P		

Source: (Lanter, 2012)

3. Mapping Enterprise Goals into IT Related Goals

From mapping enterprise goals into IT related goals, the authors get the most relevant IT related goals.

4. Mapping IT Related Goals into IT Related Processes

From mapping IT Related Goals to IT Related Processes. The author gets the relevant IT Related Process.

From the mappings that have been done above, the authors get the domains and subdomains that will be used in this research. The domain and sub domain that will be used are:

Table 2. Domains and Sub-domains

Domain Proses	Sub Domain Proses
EDM01	EDM01.03
APO01	APO01.01
APO01	APO01.03
APO01	APO01.06
APO02	APO02.06
APO07	APO07.01
DSS01	DSS01.01
MEA01	MEA01.02

C. Data Collection Methods

At this stage the authors collect the data needed in the research process. Data collection is carried out in different ways, namely:

a) Interview

The interview was conducted when the writer was observing the PT. Global Satria Aji which is unstructured. The information obtained is used to understand the company so that the writer is able to formulate the problem.

b) Questionnaire

Questionnaires are made based on the domain that has been determined and distributed to existing system users at PT. Global Satria Aji. In this research the writer has seven respondents.

Table 3. respondents

Respondent	Position
Murti Setiyati	Sales
Fajard Dwicahyo	Sales
Dandi Junedi	Purchasing
Deni Hendrizal	Warehouse
Munandar	Warehouse
Yeni Suhartini	Finance
Harum Daranita	Finance

c) Documentation

At this stage the authors document the results obtained from each activity that has been carried out.

Table 4. Achievement Value

Notation	Description	% Achievement
N	Not Achieved	0 – 15%
P	Partially Achieved	> 15 – 50%
L	Largelly Achieved	> 50 % - 85 %
F	Fully Achieved	> 85 % - 100 %

Source:(Jannah & Maula Sulthon, 2022)

RESULTS AND DISCUSSION

At this stage the authors identify information technology that will be used in accordance with the COBIT 5 standards that have been carried out. The analysis activity is carried out by reviewing

the results of the COBIT 5 implementation that has been carried out. Identified domains can be seen in the following table:

Table 5. Audited Domain Framework

IT Domain	Description
EDM (Evaluate, Direct and Monitor)	EDM01 Ensure Setup and Maintenance of Governance Framework
APO (Align, Plan and Organise)	APO01 Manage IT Management Framework APO02 Manage Strategy APO07 Manage human resources
MEA (Monitor, Evaluate and Asses)	MEA01 Monitor, Evaluate and Assess Performance and Compliance

The author identifies three domains with eight sub-domains as objective control details to be used, which can be seen in the following table:

Table 6. Objective control details

Process Domain	Process Sub Domain	Information
EDM01	EDM01.03	Monitor governance systems
APO01	APO01.01	Define organizational structure
	APO01.03	Maintaining the enabler of the management system
	APO01.06	Defining information (data) and system ownership
APO02	APO02.06	Communicating IT strategy and direction
APO07	APO07.01	Maintain adequate and appropriate staff
DSS01	DSS01.01	Perform operational procedures
MEA01	MEA01.02	Define monitoring approach

Based on the results of the recapitulation of the questionnaire answers above, in the first question it was found that 3 respondents gave a value of 4 and 4 respondents gave a value of 5. The second question 7 respondents gave a value of 5. And the third question 7 respondents gave a value of 5, so the level of maturity obtained is:

$$\text{Questionnaire value} = (3*4) + (4*5) + (7*5) + (7*5) = 102$$

$$\text{Questionnaire index} = 102/3 = 34$$

$$\text{Actual WP value} = 45\%$$

$$\text{Standard WP value} = 6$$

$$\text{Maturity Index EDM01.03} = (45\% / 6) * 34 = 2.25$$

$$\text{Total maturity index} = 2.55$$

$$\text{EDM01 Maturity Level} = 2.55 / 1 = 2.25$$

The calculation of the data above shows that the maturity level of the EDM01 domain is 2.55 or 255%. This means that it indicates that the rating scale is included in level F or fully Achieved, which means that there is a complete and systematic approach and full achievement. Meanwhile, at the Capability Level, the system is at level three or Established Process, which means that the process being managed has now been implemented using a predetermined process that is capable of achieving its process objectives.

a. APO01.01

Based on the results of the recapitulation of the answers to the questionnaire above, in the sub-domain of the APO01.01 process, there are 3 questions. where each question gets a value of 5 from the 7 respondents. Then the calculation is done by:

$$\begin{aligned}\text{Questionnaire value} &= (7*5) + (7*5) + (7*5) = 105 \\ \text{Questionnaire index} &= 105/3 = 35 \\ \text{Actual WP value} &= 45\% \\ \text{Standard WP value} &= 16 \\ \text{Maturity Index APO01.01} &= (45\% / 16) * 35 = 0.98\end{aligned}$$

b. APO01.03

Based on the results of the recapitulation of the questionnaire answers above, in the APO01.03 process sub-domain there are 3 questions, where in the first question 7 respondents gave a value of 5. The second question 5 respondents gave a value of 4 and 2 respondents gave a value of 5. And the third question 7 the respondent gives a value of 5, then the calculation is done by:

$$\begin{aligned}\text{Questionnaire value} &= (7*5) + (5*4) + (2*5) + (7*5) \\ &= 100 \\ \text{Questionnaire index} &= 100/3 = 33.3 \\ \text{Actual WP value} &= 45\% \\ \text{Standard WP value} &= 16 \\ \text{Maturity Index APO01.03} &= (45\% / 16) * 33.3 = 0.93\end{aligned}$$

c. APO01.06

Based on the results of the recapitulation of the answers to the questionnaire above, in the sub-domain of the APO01.01 process, there are 3 questions. where each question gets a value of 5 from the 7 respondents. Then the calculation is done by:

$$\begin{aligned}\text{Questionnaire value} &= (7*5) + (7*5) + (7*5) = 105 \\ \text{Questionnaire index} &= 105/3 = 35 \\ \text{Actual WP value} &= 45\% \\ \text{Standard WP value} &= 16 \\ \text{Maturity Index APO01.06} &= (45\% / 16) * 35 = 0.98\end{aligned}$$

From the calculation of the three sub-domains above, we can see that the level of achievement of APO01 is:
Total Maturity index APO01 = 0.98 + 0.93 + 0.98 = 2.89

$$\text{Maturity Level APO01} = 2.89 / 3 = 0.96$$

In the calculation of the three data above, it can be seen that the maturity level of the APO01 domain is 0.96% or 96%, which indicates that the rating scale is included in level F or fully Achieved, which means that there is a complete and systematic approach and full achievement. Meanwhile, at the level of ability or Capability Level, the system is at level one or Performed Process, which means that the process that is set achieves its process goals.

Based on the results of the recapitulation of the answers to the questionnaire above, there were 7 respondents giving a value of 5. So the calculation of the maturity level of APO02 is:

$$\begin{aligned}\text{Questionnaire value} &= (7*5) = 35 \\ \text{Questionnaire index} &= 35/1 = 35 \\ \text{Actual WP value} &= 45\% \\ \text{Default WP value} &= 14 \\ \text{Maturity Index APO02.06} &= (45\% / 14) * 35 = 1.12 \\ \text{Total maturity index} &= 1.125 \\ \text{Maturity Level APO02} &= 1.125/1 = 1.12\end{aligned}$$

In the calculation of the data above, it can be seen that the maturity value of Domain APO02 is 1.12% or 112%, meaning that the rating scale is included in level F or fully Achieved, which means that there is a complete and systematic approach and full achievement. Meanwhile, at the level of ability or Capability Level, the system is at level one or Performed Process, which means that the process that is set achieves its process goals.

Then the calculation of the maturity level of APO07 is:

$$\begin{aligned}\text{Questionnaire value} &= (7*5) = 35 \\ \text{Questionnaire index} &= 35/1 = 35 \\ \text{Actual WP value} &= 45\% \\ \text{Default WP value} &= 15 \\ \text{Maturity Index APO07.01} &= (45\% / 15) * 35 = 1.05 \\ \text{Total maturity index} &= 1.05 \\ \text{Maturity Level APO07} &= 1.05/1 = 1.05\end{aligned}$$

In the calculation of the data above, it can be seen that the maturity value of Domain APO07 is 1.05% or 105%, which indicates that the rating scale is included in level F or fully Achieved, which means that there is a complete and systematic approach and full achievement.

Then the calculation of the maturity level of DSS01 is:

$$\begin{aligned}\text{Questionnaire value} &= (7*5) + (7*5) + (7*5) = 105 \\ \text{Questionnaire index} &= 105/3 = 35 \\ \text{Actual WP value} &= 45\% \\ \text{Standard WP value} &= 10 \\ \text{Maturity Index DSS01.01} &= (45\% / 10) * 35 = 1.57 \\ \text{Total maturity index} &= 1.57 \\ \text{Maturity Level DSS01} &= 1.575/1 = 1.57\end{aligned}$$

In the calculation of the data above, it can be seen that the maturity value of Domain DSS01 is 1.57% or 157%, which indicates that the rating scale is included in level F or fully Achieved, which means that there is a complete and systematic approach and full achievement. Meanwhile, at the level of capability or Capability Level, the system is at level two or Managed Process, which means that this process has been implemented regularly and the products produced have been defined, controlled and maintained properly.

The maturity level of MEA01 is:

$$\begin{aligned}\text{Questionnaire value} &= (7*5) + (7*5) + (7*5) = 105 \\ \text{Questionnaire index} &= 105/3 = 35 \\ \text{Actual WP value} &= 45\% \\ \text{Standard WP value} &= 7 \\ \text{Maturity Index MEA01.01} &= (45\% / 7) * 35 = 2.25\end{aligned}$$

Total maturity index = 2.25
Maturity Level MEA01 = 2.25/1 = 2.25

In the calculation of the data above, it can be seen that the maturity value of Domain MEA01 is 2.25% or 225%. This means that the rating scale is included in level F or fully achieved, which means that there is a complete and systematic approach and full achievement. Meanwhile, at the level of capability or Capability Level, the system is at level two or Managed Process, which means that this process has been implemented regularly and the products produced have been defined, controlled and maintained properly.

Maturity level can be seen from the average calculation results for each domain can be seen in the following table:

Table 7. Maturity Level

No	Domain	Maturity Level	Achievement Value	IT Capabilities
1	EDM01	2.55	Fully Achieved	Established Process
2	APO01	0.96	Fully Achieved	Performed Process
3	APO02	1.12	Fully Achieved	Performed Process
4	APO07	1.05	Fully Achieved	Performed Process
5	DSS01	1.57	Fully Achieved	Managed Process
6	MEA01	2.25	Fully Achieved	Managed Process
Nilai Rata-rata		1.58	Fully Achieved	Managed Process

The calculation results show that the average value of maturity in each domain of information technology governance in the procurement system of PT. Global Satria Aji is 1.58 which, when viewed from the rating scale, is included in level F which indicates that the Fully achieved value has been achieved which indicates that there is a complete and systematic approach and full achievement. And from the scale of the rounding index mapping condition the Capability model is at level 2 or Managed Process where this process has been implemented regularly and the products produced have been defined, controlled and maintained properly.

From the results of the calculation of the maturity level above, a gap value or GAP is formed which occurs due to the difference between the maturity level value obtained and the targeted maturity value. The gap value can be seen in the following table:

Table 8. Maturity Level

Domain	Maturity Level		
	Current Maturity	Expected maturity	Difference/GAP
EDM01	2.55	3	-0.45
APO01	0.96	3	-2.04

APO02	1.12	3	-1.88
APO07	1.05	3	-1.95
DSS01	1.57	3	-1.43
MEA01	2.25	3	-0.75

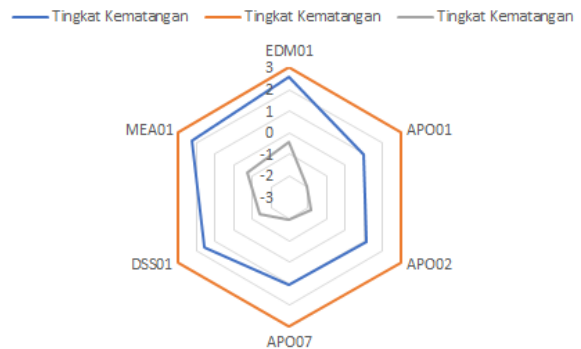


Figure 3. GAP Analysis Radar Chart with Maturity Level

Based on the calculation of the gap value that has been carried out, there is a difference of 0.45 in the EDM01 domain, this shows that the supervision of the governance system has not been maximized so that it causes a gap between the expected conditions and the conditions that occur. The recommendation that can be given is to make a routine monitoring schedule so that the governance system can be implemented and maintained regularly.

The difference is 2.04 in the APO01 domain, this shows that the maintenance of the governance system has not been maximized, causing a gap between the expected conditions and the conditions that occur. The recommendation that can be given is that it is necessary to provide a consistent management approach so as to enable the requirements of corporate governance to be met.

The difference is 1.88 in the APO02 domain, this shows that it has not been maximized in communicating IT strategy and direction, causing a gap between the expected conditions and the conditions that occur. The recommendation that can be given is to clearly communicate the objectives and related accountabilities so that they can be understood by everyone.

The difference is 1.95 in the APO07 domain, this shows that it has not been maximized in managing existing resources, causing a gap between the expected conditions and the conditions that occur. The recommendation that can be given is to optimize the utilization of human resources to meet company goals.

The difference is 1.43 in the DSS01 domain which shows that operational management has not been maximized which causes a gap between the expected conditions and the conditions that occur. Recommendations that can be given are coordinating the implementation and procedures for operational activities.

The difference is 0.75 in the MEA01 domain, this shows that the internal control has not been

maximized so that it causes a gap between the expected conditions and the conditions that occur. The recommendation that can be given is to set clear performance targets for each section so that it will be easy to evaluate each section.

CONCLUSION

Based on the audit process that has been carried out at PT. Global Satria Aji, it can be concluded that the information system audit process in the goods procurement system uses six domains with eight sub-domains selected through the implementation of COBIT 5. The results of calculating the maturity level of each domain are at level F or Fully Achieved, Calculation of the average level the maturity of the six domains used is 1.58 in decimal numbers or 158% in percent. If on the rating scale the audit results are at level F or Fully Achieved, which means that there is already a complete and systematic scheme and full realization during the assessment. Whereas at the level of ability at level 2 or Managed Process where this process has been implemented regularly and the products produced have been determined, controlled and maintained properly, there is an imbalance between the current maturity level and the expected maturity level. The biggest discrepancy is in the APO01 domain which reaches a difference of 2.04. Judging from the audit results obtained, it is known that each domain has not reached the desired target level, therefore an evaluation should be carried out as soon as possible after the audit report is made so that management can quickly find out whether the recommendations submitted are as expected or not.

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