

# Analysis of Risk Assessment on Attendance Information Systems using COBIT 5 Framework

Siddiq Fajar Bhaskoro  
Department of Information System  
Universitas Ahmad Dahlan  
Yogyakarta of Indonesia

Imam Riadi  
Department of Information System  
Universitas Ahmad Dahlan  
Yogyakarta of Indonesia

## ABSTRACT

TVRI Yogyakarta has implemented digitalized information technology in achieving its organizational goals. To support its business processes, TVRI Yogyakarta uses an E-Presence Work Service Application which is used to manage the recording of employee attendance data so that employee attendance data can be identified automatically through the system and stored in the system database, but several risks occur such as data storage that is not recorded, properly so that it causes data loss and disrupted internet connections that affect the running of ongoing system processes. This research was conducted according to the COBIT 5 risk assessment guideline which focuses on two domains APO12 (Managing Risk) consisting of APO12.01 to APO12.06 and EDM03 (Ensuring Risk Optimization) consisting of EDM03.01 to EDM03.02. The assessment of the capability level used in the process assessment is done by collecting observation data, interviews, and questionnaires and then analyzing it with the Process Assessment Model so that it can find out the current capability value, expected capability value, *gap* and determine recommendations for each risk. Based on the results of testing the *Capability Level* in the APO12 (Managing Risk) domain, it is obtained a value of 3.67 which indicates the implementation of the process is at level 4 (Predictable Process) and EDM03 (Ensuring Risk Optimization) obtained a value of 3 which indicates the implementation of the process is at level 3 (Established). Process). The results of the *gap* based on calculations carried out by the APO12 process (Managing Risk) found a gap of 0.33 and EDM03 (Ensuring Risk Optimization) it was found that a gap of 1 ha was used as a recommendation. This research has been carried out well following the expected research objectives.

## Keywords

COBIT 5, Risk Assessment, Capability Level, GAP

## 1. INTRODUCTION

Currently, the development of information systems is becoming a very important part in almost all circles, especially in a company or agency. TVRI Yogyakarta as the first regional television station agency in Indonesia cannot be separated from the role of technology in information management which makes it crucial to provide quality services and can optimize every business process. It will be very easy to run any business idea by utilizing information technology, but in practice, an information technology service system has problems that can affect performance both in terms of service and in terms of users. There will be many problems that can occur starting from a system that is difficult to understand, the system has bugs that can affect the performance of the system or there are problems with the

users themselves who do not understand how to use the system effectively in a system that supports information technology-based services. If this can happen in an agency or organization, it will certainly be very detrimental to the parties concerned. Therefore, an information technology system requires an analysis, where the analysis will later provide solutions for improving information technology services to reduce or minimize the risk of losses that can occur. An agency needs a risk assessment to be able to map the quality of positive and negative risks that will be generated so that later they can provide solutions related to potential risks that will arise. To support the analysis process that will be carried out COBIT 5 becomes a means to assist in measuring and assessing the potential risks that can be generated so that later a solution will be given regarding the potentials that will arise, of course, with the evaluation of risk management, it can be assessed using the domains COBIT 5 standard.

## 1.1 Study Literature

### 1.1.1 Understanding Risk

Risk is uncertainty about the occurrence of an event. Risk in general is always associated with negative consequences, but on the other hand, taking risks can also produce positive impacts. Another possibility of risk is that it can lead to unpredictable consequences [1].

### 1.1.2 Risk Assessment

Risk assessment is part of risk management, which is a process to assess how often a risk occurs or how big the impact of a risk is. The main purpose of conducting a risk analysis is to measure the impact of potential threats, determine how much loss is suffered due to the loss of potential business [2].

### 1.1.3 Presence

An attendance System is a personal attendance management system or an institution or agency that automatically records attendance data and can be used as a source of reports for personal management [3].

### 1.1.4 Understanding Information System

An information system is an organized combination of people (people), hardware (hardware), software (software), computer networks and data communication (communication networks), and databases (databases) that collect, transform and disseminate information across an organizational form [4].

### 1.1.5 COBIT 5

COBIT 5 provides a comprehensive framework that assists companies in achieving their goals for Corporate IT

Governance and management. In simple terms, it helps companies create optimal value from IT by maintaining a balance between realizing benefits and optimizing risk levels and resource use. There are 5 basic principles in COBIT. The following RACI Chart can be seen in Figure 1. [5]

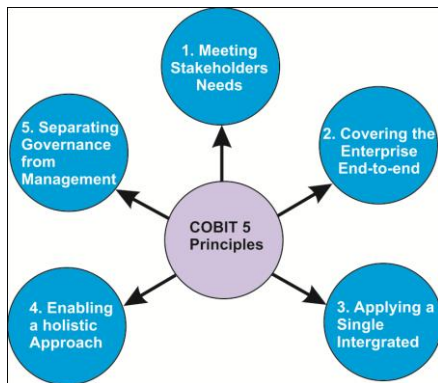


Figure 1. Principle COBIT 5

There are 5 basic principles in COBIT 5 :

1. Meet the needs of stakeholders where the company can provide value to its stakeholders. By maintaining a balance between the relationship of profit and risk that occurs.
2. Covering the entire company a system that can provide an overview of the governance and management of a company based on the number of enablers that exist around the company.
3. Implement an integrated framework. COBIT 5 is an integrated framework that can be equated with other IT-related work standards in providing direction in IT activities within an enterprise.
4. Use a comprehensive and supportive approach to define enablers in an effective and efficient enterprise IT governance and management.
5. The separation of governance from management explains the difference between governance and management [6].

### 1.1.6 COBIT 5 Implementation

COBIT 5 has seven stages in the COBIT implementation life cycle [7].

1. **Stage 1-What's the Driver?**  
Stage 1 identifies who will be the controller to support change and create a desire to achieve goals at the executive level which are then made into a new process.
2. **Stage 2-Where Are We Now?**  
Ensure that IT goals are matched with company strategy and risk and prioritize the company's goals, IT goals, and most important IT processes.
3. **Stage 3-Where Do We Want To Be?**  
Set targets to create improvements, which are then followed by a gap to identify relevant alternative solutions quickly and profitably.
4. **Stage 4-What To Do?**  
Planning the right solution for immediate execution, monitoring, and ensuring continuous business risk.
5. **Stage 5-How Do We Get There?**  
Menghitung dan memantau sistem untuk memastikan bisnis tidak berubah arah tujuan yang kemudian dilakukan dengan kegiatan hari per hari.

Calculate and monitor the system to ensure the business does not change the direction of the goal which is then carried out with day-to-day activities.

6. **Stage 6-Are We There?**  
Focus on the continuous shift revolution from improved management and management practices to business and monitoring the achievement of improvements using performance schemes.
7. **Stage 7-How to Maintain Momentum?**  
Evaluate achievement of objectives to identify governance needs and continually improve needs [8].

### 1.1.7 RACI Chart

Serves to map decision making and as a supporter in managing the identification of employee roles and responsibilities. With the RACI Chart, it will be easier to map and distinguish the main tasks according to each position, such as the executive field, which must exist in an organization to help run existing business processes. The following RACI Chart can be seen in Table 1. [9]

Table 1. RACI Chart

Name	Staff A	Staff B	Staff C	Staff D
R1	R	I	A	I
R2	I	C	A	R

1. Responsible is the person who acts as the executor of the task.
2. Accountable is a person who acts as a person in charge of a task and has the authority as a decision-maker.
3. A consultant is a person whose role is to provide direction, advice, and contribution when needed.
4. Informed is a person whose role is to find out the results of a decision taken.

### 1.1.8 Capability Level

Measurement of the value of capabilities using the interview method to several experts in the scope of work at TVRI Yogyakarta related to IT services. In the capability assessment, there are six levels that must be considered, as follows [10] :

- a) **Level 0 - Incomplete Process.**  
At this level, the process is not implemented or fails to achieve its process objectives. at this level, there is little or no evidence of any systematic achievement of the process objectives.
- b) **Level 1- Performed Process.**  
At this level, the process is executed by one attribute. At this stage, the company has implemented but has not yet achieved the goal. There is a process of planning, evaluating, and adjusting to get better results.
- c) **Level 2 - Manage Process**  
The process has been implemented and managed (planned, monitored, and adjusted) following the work product, controlled, and maintained.
- d) **Level 3 - Established Process**  
These level processes are implemented and managed by defining processes capable of achieving these results.

- e) **Level 4 - Predictable Process**  
At this level, the process that has been implemented is now operating within the limits that have been determined to achieve the process results.
- f) **Level 5 - Optimizing Process**  
At this level, the predictable processes described previously are continuously improved to meet current relevant and projected business objectives.

### 1.1.9 Questionnaire Data Processing

Data processing is done by calculating the percentage (P) obtained by dividing the frequency of answers (f) by the number of questions (n) [11], then multiplied by 100%.

$$\text{Percentage (P)} = \frac{\text{Frequency of answers}}{\text{The number of question}} \times 100$$

$$P \text{ the average} = \frac{(p_1 + p_2 + p_3 + \dots + p_n)}{\text{Number of bestpractice}}$$

## 2. METHODOLOGY

### 2.1 Data Collection Method

1. **Observation**  
Observation is one of the data collection techniques by studying and observing and measuring the attitudes of respondents to obtain evidence that can support and complete research data.
2. **Interview**  
An interview is a data collection technique that is carried out through face-to-face and direct questions and answers to related parties who have authority at TVRI Yogyakarta, especially on the IT side as the manager who has the authority to handle information technology infrastructure.
3. **Questionnaire**  
The author submits a questionnaire to the respondents who have been determined through the RACI diagram. The questions are based on the COBIT 5 standard with the APO12 domain, which has six sub-processes consisting of several questions representing each sub-process.

### 2.2 Requirement Specification

This research requires tools and materials used to support the research process. The tools needed are a set of computers with software and hardware, as well as a framework document or COBIT 5 framework as a reference. The research material is in the form of documents and data from questionnaires and interviews which will then be processed to conduct an assessment.

### 2.3 Research Stages

This chapter will explain the methodology of the research to be carried out. The stages of this research are carried out so that the work steps become more systematic and directed. This research was conducted using the COBIT 5 framework in the APO12 (Managing Risk) and EDM03 (Ensuring Risk Optimization) domains. This section will explain the methodology for carrying out research work so that the work steps become more systematic and organized. The stages of

research include 7 steps which are broad as follows. The following are the stages of the research work that will be carried out as shown in Figure 2. [12]

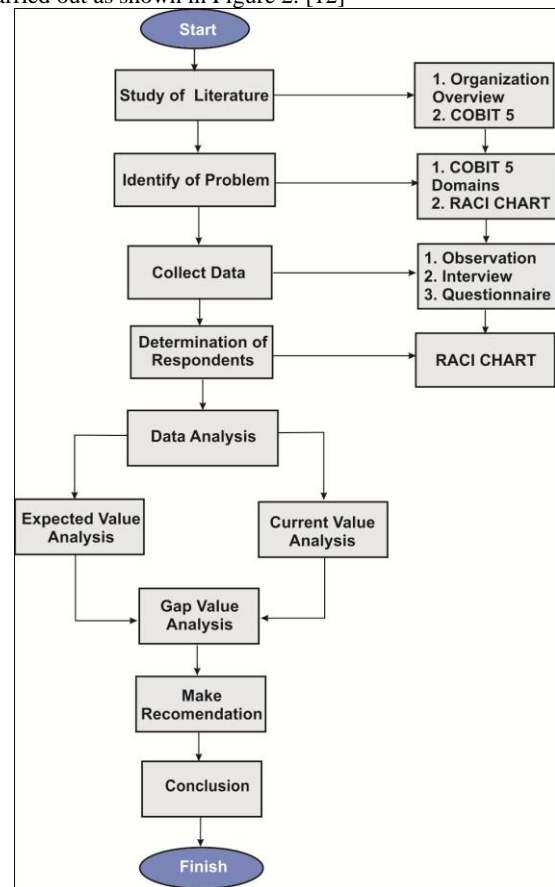


Figure 2. Stages of Research

1. A literature study is carried out by collecting various information and references on research topics. This is done to support knowledge to manage risk in the TVRI Yogyakarta Presence Information System. The literature used is in the form of academic books, papers, theses, and journals related to risk management, as well as the COBIT 5 framework guidebook
2. Define a problem by determining the process domain used to determine the RACI chart.
3. Collecting the data needed for the evaluation of information technology by means of observation, interviews, and distributing questionnaires.
4. Determination of respondents who have a role with responsibility for the company that will fill out the questionnaire in accordance with the provisions of the RACI Chart APO12 and EDM03 by compiling a questionnaire in the form of several questions that have been adapted to framework COBIT 5
5. Assessment analysis Capability Level based on the COBIT 5 framework, especially the APO12 (manage risk) and EDM03 (Ensure Risk Optimisation) process domains so as to determine the expected maturity value, current maturity value, and gap value.
6. Evaluate the results of the analysis to develop a recommendation to determine potential solutions based on the results of the Capability Level.

7. Compile conclusions from all activities carried out in research which contain a summary of all the steps that have been passed in conducting research and suggestions for further research.

## 2.4 Implementation

### 2.4.1 Data Collection

In the Capability Level of APO12 (Manage Risk) and EDM03 (Risk Optimizing) processes, the author in compiling the questionnaire was following COBIT 5 standards with domains APO12.01 to APO12.06 and EDM03.1 to EDM02. The results of the preparation of this questionnaire are used to measure the extent to which business risk management is carried out.

### 2.4.2 Determination of Respondent APO12

Identification of RACI is obtained based on people who are directly involved with the running of the business process, basically, the parties in the TVRI Yogyakarta company individually have been involved as actors in the coverage of RACI [4]. The following is the result of mapping the RACI Chart on APO12 can be seen in Table 2.

**Table 2. Result of Mapping Respondents RACI Chart APO12**

No	Unit COBIT 5	ID
1	Business Process Owner	R1
2	Project Management Office	R2
3	Chief Risk Officer	R4
4	Chief Information Security Officer	R3
5	Head Architect	R4
6	Head Development	R5
7	Head IT Operations	R3
8	Head IT Administration	R3
9	Service Manager	R2
10	Information Security Manager	R3
11	Business Continuity Manager	R1
12	Privacy Officer	R1
13	Compliance	R1
14	Audit	R3
15	Chief Information Officer	R3

Based on Table 2 above, the results of mapping the RACI Chart domain APO12 (manage risk) on the TVRI Yogyakarta E-Presence Work service are 15 work units that have been matched with work units on the e-presence work credit service and produced five respondents who will fill out the questionnaire. research because there are several work units carried out by the same person. The following are the results of mapping respondents from RACI Chart on domain EDM03. Table of results from mapping respondents to EDM03 can be seen in Table 3.

**Table 3. Result of Mapping Respondents RACI Chart EDM03**

No	Unit COBIT 5	ID
1	Chief Executive Officer	R1
2	Business Executives	R1

3	Strategy Executive Committee	R2
4	Chief Risk Officer	R3
5	Chief Information Officer	R3

Based on Table 3 above, the results of mapping the RACI Chart domain EDM03 (*ensure risk optimization*) on e-presence work services TVRI Yogyakarta are 5 work units that have been matched with work units on student credit services and resulted in five respondents who will fill out the research questionnaire because several work units are carried out by the same person.

### 2.4.3 Interviews and Observations

The observation and interview stages were conducted to obtain relevant data related to the research topic. Interviews aim to obtain valid data so that the research results can be maintained to completion. The following are the results of interviews conducted by researchers.

1. The expected Capability Level value is 4 (Predictable Process).
2. Company overview and e-presence services are used for employee attendance data attendance through the system or online.
3. Risks that interfere with the assets and activities of e-presence work services that have been implemented at the TVRI Yogyakarta Profil perusahaan, layanan kerja TVRI yang terdiri dari 3 sektor, visi dan misi, struktur organisasi perusahaan.
4. Company profile, TVRI work services consisting of 3 sectors, vision and mission, company organizational structure.
5. The goals and objectives of TVRI Yogyakarta are related to current business processes and information technology as well as risk management assessments carried out using the COBIT 5 framework process capability level.

### 2.4.4 Data Analysis

#### 2.4.4.1 Determination of the Capability Level

At this stage, the researcher uses a Likert scale calculation to calculate the Current Level Capability. The calculation results can be seen in Table 4.

**Table 4. Determination Capability Level APO12**

Domain	Process	Current Level	Expected Level
APO12.01	Collecting Data	4.14	4
APO12.02	Analyzing risk	4.23	4
APO12.03	Maintaining risk profile	3.20	4
APO12.04	Articulation of risk	3.80	4
APO12.05	Determining risk management portfolio	3.00	4
APO12.06	Responding to risk	3.80	4
<b>Average</b>		<b>3,70</b>	<b>4</b>

Based on Table 4, it is known that APO12 (Managed Process) is at level 4 with a capability value of 3.70. The APO12 value is 3.70, which means that at this level it can be said that the E-

Presence Work Service has implemented the planning, monitoring, and adjustment processes and the work results have been determined, supervised, and maintained properly (Predictable Process).

**Table 5. Determination Capability Level EDM03**

Domain	Process	Current Level	Expected Level
EDM03.01	Evaluating risk management	2.67	4
EDM03.02	Directing risk management	3.12	4
<b>Average</b>		<b>2.90</b>	<b>4</b>

Based on Table 5, it is known that EDM03 (Ensuring Risk Optimization) is at level 3 with a capability value of 2.90. At this level, the E-Presence Work Service has standardized IT processes within the company as a whole and has been implemented throughout the company (Established Process).

#### 2.4.4.2 GAP Analysis and Recommendations

In this study, the results from the calculation of the APO12 process gap value (Managing Risk) that have been obtained from the results of the questionnaire were analyzed based on each question in the sub-process and then compared with the results of observations and interviews. The following Value GAP domain APO12 can be seen in Table 6.

**Table 6. Value of GAP domain APO12**

Domain	Process	Current	Expected	Max	GAP
APO12.01	Collecting Data	4	4	5	0
APO12.02	Analyzing risk	4	4	5	0
APO12.03	Maintaining risk profile	3	4	5	1
APO12.04	Articulate risk	4	4	5	0
APO12.05	Determine risk management portfolio	3	4	5	1
APO12.06	Respond to risk	4	4	5	0
<b>Average Current Level</b>		<b>3.67</b>	<b>4</b>	<b>5</b>	<b>0.33</b>

Based on Table 6 above, it can be concluded that the e-presence work service is at level 4 and the value of the expected capability level is 3.67 so the gap resulting from the APO12 process is 0.33. This means that the company in implementing IT processes has achieved its goals and has been managed properly so that there is more assessment because the implementation and achievements are carried out with good management. The following GAP domain value EDM03 can be seen in Table 7.

**Table 7. GAP domain value EDM03**

Domain	Process	Current	Expected	Max	GAP
EDM03.01	Evaluating risk management	3	4	5	1
EDM03.02	Directing risk management	3	4	5	1
<b>Average Current Level</b>		<b>3</b>	<b>4</b>	<b>5</b>	<b>1</b>

Based on Table 7 above, it can be concluded that the e-presence work service has reached the expected level and has a GAP value of 1.00 for all existing domains.

Process examination in the APO12 (Managing Risk) and EDM03 (Ensuring Risk Optimization) domains aims to determine whether the requirements that must be met at each level have been met with the category provisions from the assessment results at each level. The process attribute process performance level can be seen in Table 8.

**Table 8. APO12 PA 1.1 Process Performance**

PA 1.1 (Process Performed)		
Domain	Goal	Description
APO12.01 (Collecting Data)	Collecting data to analyze risk	✓
APO12.02 (Analyzing Risk)	Analyzing risk data.	✓
APO12.03 (Maintaining Risk Profile)	Maintaining risk attributes.	✓
APO12.04 (Articulate Risk)	Provides information on IT risk opportunities.	✓
APO12.05 (Defining a Portfolio of Risk Management Actions)	Managing opportunities to minimize risks	✓
APO12.06 (Responding to Risks)	Responding appropriately to IT risks.	✓

Based on Table 8 above, it can be seen that the completeness of the data requirements at level 1 in each APO12 process domain has been met and can be interpreted with a PA (Process Attribute) scale with attribute values > 85% - 100% F (Full Achieved). The following is the completeness of the data requirements owned by the e-presence work service in the APO12 domain. The following process attribute level 2 (performance management) can be seen in Table 9.

**Table 9. APO12 2.1 Performance Management**

No.	PA 2.1 (Performed Management)	Evidence	Description	
			Yes	No
1	Objectives for process performance identified in risk management.	IT Knowledge Base	✓	
2	Process performance planned and monitored in risk	Risk Profile	✓	

	management.			
3	Process performance adjusted to meet plans in risk management	-		✓
4	Responsibilities and authorities for performing processes defined, assigned, and communicated in risk management	Risk Profile	✓	
5	Resources and information required to perform processes identified, available, allocated, and used in risk management	Risk Profile	✓	
6	Interfaces between the parties involved are managed to ensure effective communication and clear assignment of responsibilities in risk management	Risk Profile	✓	

Based on Table 8 above, it can be seen that the completeness of data requirements at level 2 domain APO12 some supporting documents are not owned by the TVRI Yogyakarta e-presence work service to meet the completeness at level 2 (manage the process) so that at this level calculated using the PA scale it has an attribute value of >50%-85% L (Largely Achieved).

The following is a complete list of level 2 data in the APO12 Work Product Management (manage risk) domain at TVRI Yogyakarta's e-presence work service. The following list of complete data requirements can be seen in Table 9.

**Table 9. APO12 2.2 Work Product Management**

No.	PA 2.2 (Work Product Management)	Evidence	Description	
			Yes	No
1	The requirements for the work product of the process are defined.	IT Performance Report	✓	
2	Requirements for documentation and control of work products are defined and controls for work products are defined.	Risk Profile	✓	
3	Work products are identified, documented, and controlled appropriately for risk optimization.	Annual Evaluation Report	✓	

4	Work products are reviewed according to the planned arrangement and adjusted as necessary to meet risk optimization requirements.	Annual Evaluation Report	✓	
---	---	--------------------------	---	--

Based on Table 9 above, the complete list of requirements in the APO12 domain to achieve level 2 in Work Product Management has been fully achieved. This, if calculated using the PA scale, has an attribute value of >85 – 100% F (Full Achieved). The following process attribute level 2 (Process Performance) can be seen in Table 10.

**Table 10. EDM03 PA 1.1 Process Performance**

PA 1.1 (Process Performed)			
Domain	Goal	Description	
		Y	N
EDM03.01 (Evaluate Risk Management)	Evaluate and assess the use of IT	✓	
EDM03.02 (Risk Management)	Directing the implementation of IT risk management	✓	

Based on Table 10 above, it can be seen that the completeness of data requirements at level 1 in each EDM03 process domain has been met and can be interpreted with a PA (Process Attribute) scale with attribute values > 85% - 100% F (Full Achieved). The following is the completeness of the data requirements owned by the e-presence work service in the EDM03 domain. The following process attribute level 2 (Performance Management) can be seen in Table 11.

**Table 11. EDM03 PA 2.1 Performance Management**

No.	PA 2.1 (Performed Management)	Evidence	Description	
			Yes	No
1	Identify the scope and objectives of the risk optimization process	IT Knowledge Base	✓	
2	Plan and monitor the risk optimization process	Risk Profile	✓	
3	Adjust the performance of the risk optimization process	Annual Evaluation Report	✓	
4	Identify the risk optimization process responsibilities	Risk Profile	✓	
5	Identify and provide risk optimization process resources	Risk Profile	✓	
6	Manage the risk optimization process interface	Risk Profile	✓	

Based on Table 11 above process attribute 2.1 Performance Management, it is known that 6 criteria must be met by the E-Presence Work Service at TVRI Yogyakarta aimed at ensuring the optimization process of risk management, it can

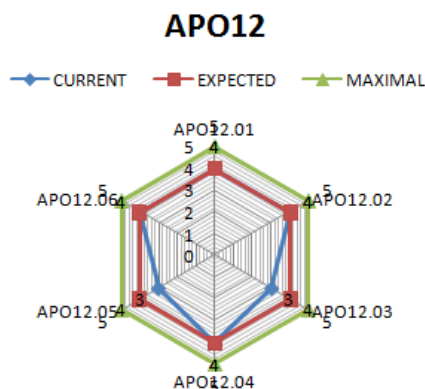
be seen that the completeness of the data requirements at level 2 in each EDM03 process domain has been met and can ensure the risk management optimization process with a PA (Process Attribute) scale with attribute values > 85% - 100% F (Full Achieved). The following is the completeness of the data requirements owned by the e-presence work service in the EDM03 domain. The following process attribute level 2 (Work Product Management) can be seen in Table 12.

**Table 12. EDM03 PA 2.2 Work Product Management**

No.	PA 2.2 (Work Product Management)	Evidence	Description	
			Yes	No
1	Quality criteria and work results	IT Performance Report	✓	
2	Determine the needs of the work	Risk Profile	✓	
3	Documentation of work Results	Annual Evaluation Report	✓	
4	Evaluation of work	Annual Evaluation Report	✓	

Based on Table 12 above, the complete list of requirements in the APO12 domain to achieve level 2 in Work Product Management has been fully achieved and has succeeded in determining the quality and results of risk optimization work. This, if calculated using the PA scale, has an attribute value of >85 – 100% F (Full Achieved). Examination of the APO12 (Managing Risk) and EDM03 (Ensuring Risk Optimization) processes aims to determine the requirements that must be met for each level according to the criteria based on the results of the assessment. The results of the calculation of the capability level that have been carried out show that the APO12 process capability level is at level 4 (Predictable Process) describing that the company must meet the attribute process requirements from level 1 to level 4.

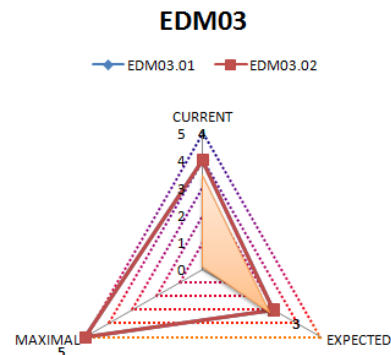
The following is a graph of the Gap and Current Level values for each APO12 and EDM03 domain. The graph of the difference in value and the Current Level can be seen in Figure 4.



**Figure 4. Graph APO12**

Based on Figure 4 it is known that the APO12 (Risk Management) process is at level 4 seen from the capability

value of 3.67. At this level, the E-Presence Service at TVRI Yogyakarta has implemented a Predictable Process. The graph of the difference in value and the Current Level can be seen in Figure 5.



**Figure 5. Graph EDM03**

Based on Figure 5, it is known that the EDM03 process (Ensuring Risk Optimization) is at level 3 seen from the value of capability 3. At this level, the E-Presence Work Service at TVRI Yogyakarta has implemented the Established Process.

**2.4.5 APO12 Attribute Process Recapitulation**

Current capability level is at level 4 and the expected capability level is 4 so the resulting gap from the APO12 process is 0.33 which will be advised following what is described in the process attribute according to the current state of the company. The results of the APO12 Attribute Process Recapitulation can be seen in Table 13.

**Table 13. Result of APO12 Attribute Process Recapitulation**

Process Name	Process Capability Level					
	0	1	2	3	4	5
APO12		F 100%	F 91,66%	L 71,66%	L 80%	

**Ket:** N(Not Achieved, 0-15%) P(Partially Achieved, >15-50%) L(Largely Achieved, >50-85%) F(Fully Achieved, >85-100%)

Based on Table 13 indicators that capability at level 1 reaches 93.33% in the Fully Achieved category. At level 2 it reached 91.66% in the Fully Achieved category. At level 3 it reached 71.66% in the Largely Achieved category. At level 4 it reaches 80% in the Largely Achieved category.

**2.4.6 EDM03 Attribute Process Recapitulation**

The recommendation results from comparing these findings with the finding of a gap that does not have a match between the two and making recommendations that can help the e-presence service running at TVRI Yogyakarta achieve the company's goals. Current capability level is at level 3 and the expected capability level is 4 so that the resulting gap from the EDM03 process is 1 which will be recommended following what is described in the process attribute according to the current state of the company. findings Gap was obtained from the comparison between the findings of the

questionnaire with the results of observations and interviews. The recommendation results are obtained from comparing the findings of the questionnaire with the finding of the *gap* that does not match the two and making recommendations. The results of the EDM03 Attribute Process Recapitulation can be seen in Table 14.

**Table 14. Result of EDM03 Attribute Process Recapitulation**

Process Name	Process Capability Level					
	0	1	2	3	4	5
EDM03		F 100%	F 100%	L 73,33%		
<b>Ket:</b> N(Not Achieved, 0-15%) P(Partially Achieved, >15-50%) L(Largely Achieved, >50-85%) F(Fully Achieved, >85-100%)						

Based on Table 14 indicators on capability at level 1 reach 100% in the Fully Achieved category. At level 2 it reaches 100% in the Fully Achieved category. At level 3 it reaches 73.33% in the Largely Achieved category.

#### 2.4.7 Reporting Recommendations

In this subchapter, the researcher will describe the recommendations and suggestions that have been obtained from the results of the value gap analysis obtained and will be implemented by the TVRI Yogyakarta e-presence work service. The table of recommendations and suggestions can be seen in Table 10.

**Table 15. Recommended domains APO12**

Domains	Recommended
APO12.01 (Gathering Data)	The collection, classification, and analysis of data must continue to be improved to make it easier to manage the existing data in the e-presence system.
APO12.02 (Analyzing Risk)	Renewal, control, and ability to detect risks by carrying out risk mitigation which is always monitored.
APO12.03 (Maintaining Risk Profile)	Rapid identification and monitoring of risks for data backup, as well as the development of server systems for access use in 3 different time zones for each branch area.
APO12.04 (Articulate Risk)	Reporting the results of risk analysis to Stakeholders as a record in finding problems that have occurred so that the results of the measurements taken can be applied so that there are developments and positive impacts for the company.
APO12.05 (Defining a Portfolio of risk Management Actions)	Control of risk management through a collection of quantitative measurement results used by the company to measure performance to meet objectives.
APO12.06 (Responding to Risk)	E-presence work services must have input and output groupings that cover the entire business process.

Based on Table 15 the results of recommendations and suggestions related to E-Presence Work Services at TVRI Yogyakarta so that they can be implemented by companies that aim to improve e-presence work services that are already running and can prevent risks that will occur so that the resulting impact is not too large and the company can reach the expected level. The following) Recommended domains EDM03 can be seen in Table 16.

**Table 16. Recommended domains EDM03**

Domain	Recommended
EDM03.01 (Evaluate Risk Management)	Make decision reports and risk management evaluation reports to deal with IT risk limits that will occur to anticipate future risks.
EDM03.02 (Direct Risk Management)	Directing the integration between strategy and risk operations with routine cloud data collection so that they can know the right time to resize and not interfere with operational activities and make reports to assess risk optimization performance to anticipate future risks.

Based on Table 16 the results of recommendations and suggestions related to E-Presence Work Services at TVRI Yogyakarta so that they can be implemented by companies that aim to improve e-presence work services that are already running and can prevent risks that will occur so that the resulting impact is not too large and the company can reach the expected level.

### 3. CONCLUSION

Based on the results of research related to risk management, the current capability level of the APO12 (Managing Risk) domain is at level 4 (Predictable Process) with a capability value of 3.67, and EDM03 (Ensuring Risk Optimization) obtained the capability level is at level 3 (Established Process) with capability value 3. Gap (gaps) based on calculations performed using the APO12 (Risk Management) process found a gap of 0.33 and EDM03 (Ensuring Risk Optimization) found a gap of 1. The results of the recommendations given for the E-Presence Work Service are to identify and monitor related risks quickly and periodically for *backup*, as well as the development of a server system for access use in 3 different time zones for each branch area. Determining the level of risk by documenting risk history, and adding *staff* on risk management so that they can improve and improve the processes that are already running at TVRI Yogyakarta in achieving company goals.

### 4. REFERENCES

- [1] MP Wibawa and AD Manuputty. (2020). "Information Technology Risk Management Analysis Policy Service PT. Sinar Mas Insurance Using COBIT Framework 5," *JATISI (Journal of Information Technology and Information System)*, vol. 7, no. 3, pp. 466–479.
- [2] N. Dwi Setyaningrum, Suprpto, and A. Kusyanti. (2018). "Evaluation of Information Technology Risk Management Using COBIT 5 Framework (Case Study: PT. Kimia Farma (Persero) Tbk-Plant Watudakon)," *J Pengemb. Teknol. Inf. and Computer Science.*, vol. 2, no. 1, pp. 143–152.
- [3] NL Khoiriyah, F. Marisa, and ID Wijaya. (2018). "Designing an Online Presence System Based on



- Granted Data Validity,” *JIMP - J. Inform. Merdeka Pasuruan*, vol. 3, no. 1, pp. 53–61.
- [4] AF Tamara and I. Riadi. (2021). “Analysis of Risk Assessment on Student Credit Services using COBIT 5 Framework,” *Int. J. Comput. Appl.*, vol. 183, no. 42, pp. 50–58.
- [5] M. Megawati and A. Syntia. (2018). “Evaluation of Information Technology Risk Management Using Cobit 5.0 Framework,” *J. Ilm. Engineering and Management. Sist. Inf.*, vol. 4, no. 2, p. 118.
- [6] RDA Putra, A. Ambarwati, and E. Setiawan. (2019). “Evaluation of Information Technology Risk Management Based on COBIT 5 Framework at PT.BTM,” *JSI J. Sist. Inf.*, vol. 11, no. 2, pp. 1754–1762.
- [7] CU Putri. (2017). “Information Technology Process Risk Assessment Based on Cobit 5 Framework at the Helpdesk of the Subdirectory of Information Technology Services and Systems Directorate of Information Technology and Systems Development (DPTSI) Institute of Technology Sepuluh Nopember,” *Thesis*, p. 241.
- [8] HM Astuti, FA Muqtadiroh, EWT Darmaningrat, and CU Putri. (2017). “Risks Assessment of Information Technology Processes Based on COBIT 5 Framework: A Case Study of ITS Service Desk,” *Procedia Comput. Sci.*, vol. 124, pp. 569–576.
- [9] AK Darmawan and A. Dwiharto. (2019). “Measuring the Capability Level of E-Government Service Quality of Pamekasan Regency Using COBIT 5.0 Framework,” *INTENSIFY J. Ilm. Panelist. and Application of Technology. Sist. Inf.*, vol. 3, no. 2, p. 93.
- [10] RA Aziz, Kusrini, and Sudarmawan. (2018). “Evaluation of Information Technology Risk Management in State-Owned Enterprises Using COBIT Standard 5 (Case Study: PT TASPEN PERSERO),” *J. IT CIDA*, vol. 4, no. 2, pp. 1–11.
- [11] NZ Firdaus and Suprpto. (2018) “Evaluation of Information Technology Risk Management Using COBIT 5 IT Risk (Case Study: PT. Petrokimia Gresik),” *J. Pengemb. Teknol. Inf. and Computer Science.*, vol. 2, no. 1, pp. 1–10.
- [12] YP Andriani and I. Riadi. (2021). “Risk Assessment of Monitoring Services using COBIT 5 Framework,” *Int. J. Comput. Appl.*, vol. 183, no. 37, pp. 8–16.
- [13] H. Fryonanda, H. Sokoco, and Y. Nurhadryani. (2019 ). “Evaluation of Information Technology Infrastructure with Cobit 5 and Itil V3,” *JUTI J. Ilm. Teknol. Inf.*, vol. 17, no. 1, p. 1.
- [14] TS Agoan, HF Wowor, and S. Karouw. (2017). “Analysis of Information Technology Maturity Level in Manado City Communication and Informatics Department Using COBIT Framework 5 Domain Evaluate, Direct, Monitor (EDM) and Deliver, Service, and Support (DSS),” *J. Tech. Inform.*, vol. 10, no. 1, pp. 1–9.
- [15] T. Kristanto, L. Andri Lestari, J. Informatics Engineering, I. Technology Adhi Tama Surabaya, and J. Arief Rachman Hakim. (2016). “Analysis of E-government Maturity Level Using COBIT Framework 5 (Study Case of the Department of Trade and Industry of the City of Surabaya),” *Semin. Nas. Sist. Inf. Indonesia.*, vol. 5, no. November 2016.
- [16] M. Asqia and P. Prihandoko. (2018). “Analysis of the Maturity Level of Ti Governance in Academic Information Systems Using Cobit 5,” *J. Teknol. Integrated*, vol. 4, no. 1, pp. 101–116.
- [17] P. Studi, S. Systems, FT Information, JON No, and K. Salatiga. (2018). “Analysis of Office Information Technology Governance,” no. November, pp. 3–8.
- [18] A. Pasquini and E. Galiè. (2013). “COBIT 5 and the Process Capability Model. Improvements Provided for IT Governance Process,” *Fikusz 13*, pp. 1–10.
- [19] US Attendance, UC Diagram, S. Diagram, and C. Diagram. (2014). “Application of Employee Attendance System Using Barcode Method in PT. XYZ,” *J. Sist. Inf. Univ. Suryadarma*, vol. 5, no. 1, pp. 55–77.
- [20] N. Farikhah, R. Fauzi, and F. Dewi. (2021). “ANALYSIS OF RISK MANAGEMENT FROM USING SEVEN ENABLERS BASED ON COBIT 5 FOR RISK (Case Study: PT. ABC),” *J. Sci. Soc. Res.*, vol. 4, no. 3, p. 236.
- [21] A. Wiraniagara and AF Wijaya. (2019). “Information Technology Governance Analysis Using Cobit Framework 5 Domain Deliver Support and Service (Case Study: Eka Tjipta Foundation),” *Sebatik*, vol. 23, no. 2, pp. 663–671.
- [22] S. Zhang and H. Le Fever. (2013). “An Examination of the Practicability of COBIT Framework and the Proposal of a COBIT-BSC Model,” *J. Econ. Bus. Manag.*, vol. 1, no. 4, pp. 391–395.
- [23] HM Kurnia, RN Shofa, and R. Rianto. (2019). “Information Technology Governance Audit Using COBIT 5 Framework Based on APO12 Domain,” *J. SITECH Sist. Inf. and Teknol.*, vol. 1, no. 2, pp. 99–106.
- [24] J. Media and I. Budidarma. (2021). “Information Technology Risk Analysis Using FMEA and SAW Methods with COBIT 5,” vol. 5, pp. 1688–1697.
- [25] M. Garsoux. (2021). “COBIT 5 ISACA’s new framework for IT Governance, Risk, Security and Auditing An overview,” *ISACA Whitepapers*, p. 39.