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Evaluation of Information Technology Governance with COBIT 5 in XYZ for ISO 27001:2013 Readiness

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Abstract:

This journal aims to know the process of COBIT 5, the capability, and mapping those processes with ISO Structure. The need for identification processes are due to the change of corporate objective which in turn triger the development of new work program. Using goal cascade method and survey resulting processes such as five domain processes of EDM with three of the EDM's capability are level 2 and level 1 for others. With GAP analysis identified a gap between the current capability and the target level of the company's capability.

Keywords — **COBIT 5, IT Governance, ISO 27001:2013.**

I. INTRODUCTION

XYZ Company is a State-Owned Enterprise that provides protection for workers to address socio-economic risks by using social insurance mechanisms. Implementation of social security program is one of the responsibility and obligation of the state which is to provide social economic protection to the community in accordance with state financial capacity conditions.

Adjusting the company's position as a state-owned enterprise and with the expectation of the government, the company's vision and mission are aligned. The company has vision and mission as used in the period 2014-2018. During the period, various events occurred such as the change of board of commissioners and board of directors. With those change the company decided that, it is necessary to change the company vision and missions by adjusting the current government state.

Changing the vision and mission of the company brings changes to the enterprise goals. Following the company's history of using the COBIT 4 framework, the enterprise goal plays an important role for determining the COBIT process. The improvement framework of COBIT 4 to COBIT 5 helps companies gain the role in controlling IT related matters such as the development and management of IT governance. Improvement of the corporate framework into COBIT 5 with a certain capability value is mentioned in the work program based on the newest enterprise goal. The following is the company's work program in 2018 based on the Strategic Plan 2017-2021.

TABLE I
MATRIC OF STRATEGIC GOAL BY CORPORATE LEVEL

THEME	OPERATIONAL EXCELLENCE 2018
Improving IT Governance	Full Certified ISO 20000: IT Service Management
	Initiate ISO 27000: IT Security Management
	Data consolidate for quality information
	IT Readiness Index Assessment level 2
	SOA Maturity Index Assessment level 2
	Data Center Infrastructure Improvement
	Digital Ecosystem Improvement

To be able to know whether the IT Readiness Index of companies reaching level 2 we needs to know what processes are there in accordance with the latest COBIT framework that is COBIT 5. Identification of the process is done using goal cascading based on the latest enterprise goal. Improvisation on COBIT 5 is designed to be more easily aligned with other frameworks such as ISO. It can be identified based on the COBIT 5 capability assessment method using the level method adapted

to ISO / IEC 15504. In addition COBIT 5 for Information Security provides mapping guidance with other frameworks such as ISO, ISF, and NIST. In accordance with the work program framework mapping company will be focused on ISO 27001. Based on those interests this research is implemented.

A. Current Problem.

The problem known in XYZ Company based on journal theme :

1) What domain processes do companies have based on the current Enterprise Goal after the recent change?

The changes of company vision and mission bring the changes of the target company (enterprise goal). Those new goal brought changes in the process domain based on COBIT 5.

2) Will the IT Readiness Index of the company be fulfilled?

With a known domain of processes based on the latest enterprise goal, assessment activities are needed to determine the value of capability. Assessment activities can answer the work program of the company.

3) How does the COBIT 5 process domain position in the ISO 27001: 2013 requirement structure?

Improvisation COBIT 5 provides a mapping guide between COBIT 5 with other frameworks such as ISO 27000. This mapping can provide an overview to implement the company's work program.

B. Scope.

The research undertaken in this case study is limited by the scope of the discussion as follows:

1) Data collection is focused on the Strategic Planning Division as the responsible party in the COBIT 5 assessment activity.

2) Assessment conducted in this research is an assessment on IT governance process COBIT 5 which is EDM domain. Assessment was conducted on three related divisions namely Strategic Planning Division, IT Development Division, and Operational Division.

3) The capability value other than the EDM domain is the result of the assessment of the COBIT process that has been done before and used as a secondary data.

4) Assessment of ISO 27001: 2013 based on PAM COBIT 5 and not accompanied by physical evidence checks.

II. IT GOVERNANCE

Information Technology Governance under the Regulation of the Minister of State-Owned Enterprises is an authority and responsibility of the commissioners, directors and IT managers concerned with IT'sendeavors to support the organization's strategy and objectives, utilizing structural mechanisms, communication mechanisms and specific processes. It is mentioned that IT Governance is one of the main pillars of GCG (Good Corporate Governance), so the implementation of IT Governance is required the IT governance standards with reference to international IT governance standards that have been widely accepted and tested its implementation.

III. COBIT 5.

COBIT 5 provides a comprehensive framework that helps companies achieve their goals in corporate governance and IT governance. The framework helps companies create optimum value from IT by maintaining a balance between realizing benefits and optimizing risk and resource usage levels. The COBIT Framework 5 makes a clear distinction between governance and management. These two disciplines cover different types of activities, require different organizational structures and serve different purposes.

A. Governance Domain Process.

In the Governance there is one Domain consisting of 5 processes ie EDM. EDM stands for Evaluate, Direct, and Monitor which fall within the scope of corporate governance. Here's a list of processes that are included in the EDM domain.

TABLE II GOVERNANCE DOMAIN PROCESSES [12]

Domain Code	Domain Process

EDM01	Ensure governance framework setting and maintenance
EDM02	Ensure benefit delivery
EDM03	Ensure risk optimization
EDM04	Ensure resource optimization
EDM05	Ensure stakeholder transparency

B. *Management Domain Process*.

In the Management there are 4 Domains in accordance with the task area or management responsibilities of Plan, Build, Run, and Monitor (PBRM) .The following processes in each type of domain in the process Management:

TABLE III
MANAGEMENT DOMAIN PROCESSES [12]

Domain Code	Domain Process
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 relationship
APO09	Manage service agreements
APO10	Manage suppliers
APO11	Manage quality
APO12	Manage risk
APO13	Manage security
BAI01	Manage programmes and projects
BAI02	Manage requirement definition
BAI03	Manage solutions identification and build
BAI04	Manage availability and capacity
BAI05	Manage organizational change enablement
BAI06	Manage changes
BAI07	Manage change acceptance and transitioning
BAI08	Manage knowledge
BAI09	Manage assets
BAI10	Manage configuration
DSS01	Manage operations
DSS02	Manage service requests and incidents

DSS03	Manage problem
DSS04	Manage continuity
DSS05	Manage security services
DSS06	Manage business process controls
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

IV. COBIT 5 PAM.

The COBIT Assessment Process is used to assess whether the process attribute has been reached. In the assessment process COBIT provides 9 attributes that are grouped according to process level.

There are six levels of ability that a process can achieve, including the 'incomplete' process if it does not achieve the desired process objectives. Here's a description of the process level[13] :

1)   0 Incomplete Process: The process is not implemented or does not achieve the desired process objectives.

2)   1 Performed Process: Implemented processes have reached the goal of the process. At level 1 (Level 1) there is one attribute that is Process Performance.

3)   2 Managed Process: The previously described process was finally carried out in a way that is well managed (planned, monitored and adjusted). Work Products is set, controlled and maintained appropriately. At level 2 (Level 2) there are two attributes:
   a) Performance Management.
   b) Work Product Management.

4)   3 Establish Process: The previously described process is finally implemented using a defined process and able to achieve process results. At level 3 (Level 3) there are two attributes:
   a) Process Definition
   b) Process Deployment

5)   4 Predictable Process: Previously described processes end up operating within the set

boundaries to achieve process results. At level 4 (Level 4) there are two attributes:

  a) Process Measurement
  b) Process Control

6)   5 Optimizing Process: The previously predicted process continues to increase to meet current business objectives and subsequently projected business goals. At level 5 (Level 5) there are two attributes:

  a) Process Innovation
  b) Process Optimization

A. Scoring Scale.

  Each attribute is assessed using assessment standards specified by ISO / IEC 15504 standards. The assessment consists of[13]:

a)   N (Not achieved) : Available evidence of attribute attainment is minimal or absent in the assessed process (achievement: 0 - 15%).

b)   P (Partially achieved) : There is some close proof and some attainment of certain attributes in the assessed process. Some aspects of attribute attainment may be unpredictable (achievement: 15% - 50%).

c)   L (Largely achieved) : There is evidence that systematically approximates and significant achievement of certain attributes in the assessed process. Some disadvantages associated with these attributes may appear in the assessed process (achievement: 50% - 85%).

  F (Fully achieved) : There is complete and systematic evidence of approaching and certain attributes in the process that are considered to have been achieved entirely. There are no significant disadvantages associated with attributes in the assessed process (achievement: 85% - 100%).

V. COBIT 5 FOR INFORMATION SECURITY AND ISO 27001.

  COBIT 5 for information security is providing a mapping guide between the COBIT 5 and ISO 27001 domains. The mapping aims to assist the implement to know the domain area of the COBIT process with controls in the ISO. Here is the COBIT 5 domain mapping for information security with ISO 27001.

TABLE IV
MAPPING OF COBIT 5 DOMAIN WITH ISO/IEC 27001

COBIT 5 for Information Security	ISO/IEC 27001
EDM01	5.1 Management commitment
	A.5 Security Policy
EDM02	7. Management review of the ISMS
	8. ISMS Improvement
EDM03	4.2.1 Establish the ISMS
	4.2.2 Implement and operate the ISMS
	4.2.3 Monitor and review the ISMS
	4.3 Documentation requirement
EDM04	5.2 Resource Management
	A.6 Organization of Information Security
EDM05	8. ISMS Improvement
APO01	5.1 Management commitment
	A.5 Security Policy
	A.6 Organization of Information Security
APO02	4.2.1 Establish the ISMS
APO07	5.2.2 Training, awareness and competence
	A.8 Human Resource Security
APO08	A.6.1 Internal Oganization
APO10	A.6.2 External Parties
APO11	7. Management review of the ISMS
	8. ISMS Improvement
APO12	4.2.1 Establish the ISMS
	4.2.2 Implement and operate the ISMS
	4.2.3 Monitor and review the ISMS
	4.3 Documentation requirement
APO13	Deal throughout this standard
BAI03	A.12 Information systems acquisition, development and maintenance
BAI08	4.3 Documentation requirement
BAI09	A.7 Asset Management
DSS01	4.2.2 Implement and operate the ISMS
DSS02	A.13 Information security incident management
DSS04	4.2.4 Maintain and improve the ISMS

	4.3 Documentation requirement
	8. ISMS Improvement
	A.14 Business continuity management
DSS05	Deal throughout this standard
DSS06	4.2.3 Monitor and review the ISMS
MEA01	4.2.3 Monitor and review the ISMS
	4.2.4 Maintain and improve the ISMS
	7. Management review of the ISMS
MEA02	4.2.3 Monitor and review the ISMS
	6. Internal ISMS audit
	A.15.2 Complience with security policies and standars, and technical compliance
MEA03	6. Internal ISMS audit
	A.15.1. Compliance with legal requirement
	A.15.3. Information system audit considerations

VI. ANALYSIS.

In this method of data settlement, the author will by interview and survey. The data collected in these ways are expected to be sufficient as the input material is compiled and then analyzed.

Data analysis method is done after the data collection is completed. Given the value of the questionnaire the next step is to calculate the COBIT process capability. The calculation will be performed with the following average formulas.

A. Data Gathering

In this method of data settlement, the author will by interview and survey. The data collected in these ways are expected to be sufficient as the input material is compiled and then analyzed.

Data analysis method is done after the data collection is completed. Given the value of the questionnaire the next step is to calculate the COBIT process capability. The calculation will be performed with the following average formulas.

$$\overline{X} = \frac{\sum Xi}{n} \qquad (1)$$

B. Result of the latest assessment.

The XYZ Company uses COBIT 4 as a framework starting in year 2012. Currently COBIT 4 migration to COBIT 5 has not been done. However, the latest assessment was conducted in March 2017 using the PAM (Process Assessment Model) COBIT 5. The assessment was conducted using the control objective of COBIT 4 and then aligned with the process domain of COBIT 5 based on the results of critical process analysis and company target in the period of 2014 -2018. The resulting value of the valuation is as follows.

TABLE V
RESULT OF IT PROCESS ASSESSMENT COMPANY XYZ2017

COBIT *Process*	Capability
APO01	2
APO03	2
APO05	2
APO06	2
APO07	3
APO08	2
APO09	2
APO10	3
APO12	2
APO13	2
BAI01	2
BAI02	2
BAI03	2
BAI04	2
BAI06	3
BAI07	3
BAI10	3
DSS01	3
DSS02	3
DSS03	3
DSS04	2
DSS06	3
MEA01	2
MEA02	2

C. COBIT 5 Process in Company.

As it mention in the Introduction section, the company recently change their vision and mission which the resulting the new goal for enterprise. Based on thosegoals and with goal cascading method as COBIT suggested, it is found that the Company using 38 process domainto achieve

enterprise goal. The resulting processes are as follows.

TABLE VI
OVERVIEW OF COBIT 5 PROCESS DOMAIN IN XYZ COMPANY

COBIT 5 PROCESS	
EDM01	BAI02
EDM02	BAI03
EDM03	BAI04
EDM04	BAI05
EDM05	BAI06
APO01	BAI07
APO02	BAI08
APO03	BAI09
APO04	BAI10
APO05	DSS01
APO07	DSS02
APO08	DSS03
APO09	DSS04
APO10	DSS05
APO11	DSS06
APO12	MEA01
APO13	MEA02
BAI01	MEA03

D. RACI CHART.

Based on the scope of this study case, the process which will be assess are the governance domain, the EDM domain. Following the result of the previous section, it is known that the company using all five domain of EDM. To proceed, it's important to know who will be involve, what role and job that should be done for the governance process.

Using an Illustration Organization Structure from COBIT 5 instruction as a base, we align the role of the targeted divisions in the XYZ Company and choose which rolesare involved in most of the governance process. Those roles will be clustered using RACI chart and with it we found the respondents we will use for assessment. Here's the name of the job titlein the company from the targeted division.

a) Strategic Planning Division :

   a. Deputy Director : 1 Person
   b. Deputy Assistant : 3 People

b) IT Development Division :
   a. Deputy Director : 1 Person
   b. Deputy Assistant : 3 People

c) Operational IT Division :
   a. Deputy Director : 1 Person
   b. Deputy Assistant : 3 People

Aligning with Organizational Structure from COBIT 5 resulting RACI Chart as follow :

TABLE VII
RACI CHART IN XYZ COMPANY

Governance Practice	Deputy Director	Deputy Assistant
EDM01	R	I
EDM02	R	I
EDM03	R	C
EDM04	R	I
EDM05	C	I

E. Capability Assessment of EDM Process.

Measurement of capability level in this case study used survey given to 12 respondents with job position as deputy and deputy assistant. Here's the result of the EDM process.

1) **EDM01- Ensure Governance Framework Setting and Maintenance.**
   The process to analyze and articulate requirements for corporate IT governance, and implement and maintain effective structures, principles, processes and practices, with clarity of responsibilities and powers to achieve the company's mission, goals and objectives.[13]
   By calculating the answer from respondent resulting the rate and scale of EDM01 as follow :

TABLE VIII
CAPABILITY LEVEL OF PROCESS EDM01

EDM 01	Level 0	Level 1	Level 2		Level 3	Level 4	Level 5
		PA 1.1	PA 2.1	PA 2.2	PA 3	PA 4	PA 5
Rate	100%	88,89%	62,86%	52,78%			

Scale	F	F	L	L						

Those result indicating that the capability of EDM01 process currently at level 2 in the XYZ Company.

2) **EDM02 - Ensure Benefit Delivery.**
The process to optimize value contribution to business from business processes, IT services and IT assets due to investments made by IT at an acceptable cost. [13]
By calculating the answer from respondent resulting the rate and scale of EDM02 as follow :

TABLE IX
CAPABILITY LEVEL OF PROCESS EDM02

EDM 02	Level 0	Level 1	Level 2		Level 3	Level 4	Level 5
		PA 1.1	PA 2.1	PA 2.2	PA 3	PA 4	PA 5
Rate	100%	58,33%					
Scale	F	L					

Those result indicating that the capability of EDM02 process currently at level 1 in the XYZ Company.

3) **EDM03- Ensure risk optimization.**
The process to ensure that risk tolerance and risk appetite are understood, articulated and communicated.[13]
By calculating the answer from respondent resulting the rate and scale of EDM03 as follow :

TABLE X
CAPABILITY LEVEL OF PROCESS EDM03

EDM 03	Level 0	Level 1	Level 2		Level 3	Level 4	Level 5
		PA 1.1	PA 2.1	PA 2.2	PA 3	PA 4	PA 5
Rate	100%	89,81%	75,59%	59,03%			
Scale	F	F	L	L			

Those result indicating that the capability of EDM03 process currently at level 2 in the XYZ Company.

4) **EDM04 - Ensure resource optimization.**

The process to ensuring sufficient and sufficient IT-related capability (people, processes and technology) is available to support the company's goals effectively at optimum cost.[13]
By calculating the answer from respondent resulting the rate and scale of EDM04 as follow :

TABLE XI
CAPABILITY LEVEL OF PROCESS EDM04

EDM 04	Level 0	Level 1	Level 2		Level 3	Level 4	Level 5
		PA 1.1	PA 2.1	PA 2.2	PA 3	PA 4	PA 5
Rate	100%	73,15%					
Scale	F	L					

Those result indicating that the capability of EDM04 process currently at level 1 in the XYZ Company.

5) **EDM05 - Ensure stakeholder transparency.**
The process to ensure that corporate IT performance, conformance measurement, and reporting are transparent, with stakeholders agreeing on the required targets, metrics, and remedial actions.[13]
By calculating the answer from respondent resulting the rate and scale of EDM05 as follow :

TABLE XII
CAPABILITY LEVEL OF PROCESS EDM05

EDM 03	Level 0	Level 1	Level 2		Level 3	Level 4	Level 5
		PA 1.1	PA 2.1	PA 2.2	PA 3	PA 4	PA 5
Rate	100%	87,50%	47,74%	43,06%			
Scale	F	F	P	P			

Those result indicating that the capability of EDM05 process currently at level 2 in the XYZ Company.

F. GAP Analysis.

With the EDM result next step is doing the Gap Analysis by comparing between assessment result with enterprise goal as it state in work program. Here's the result of the gap analysis.
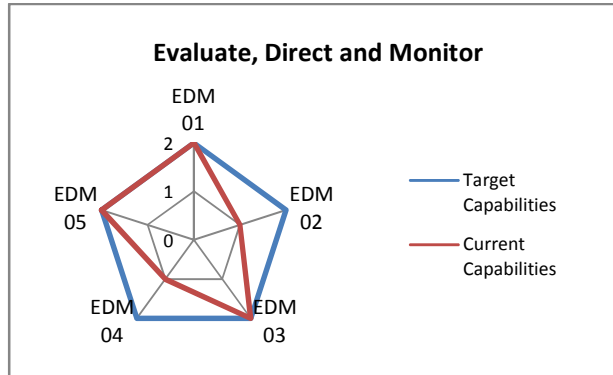

Fig 1 Gap of IT Readiness Capability

Here's the detail of the gap capabilities that exist in the company based of this study case assessment result.

TABLE XIII
REVIEW OF GAP CAPABILITY

Proses COBIT 5	Current Capability	Target Capability	GAP Capability
EDM01	2	2	0
EDM02	1	2	1
EDM03	2	2	0
EDM04	1	2	1
EDM05	2	2	0

G. Mapping TheCapability Level.

In COBIT 5 for Information Security a mapping between the COBIT 5 process and the requirement structure of ISO 27001 are given. In accordance with the COBIT 5 process and the capability value obtained from the result in this case study and from the results of the company's capability assessment in the last year as follows.

TABLE XIV
MAPPING OF ISO 27001:2013 STRUCTURE REQUIREMENT WITH COBIT 5 DOMAIN PROCESSES

No. Clausa	Management System Requirements	COBIT 5 Process	Capabilities
4	Context of the organization	EMD03	2
	4.1 Understanding the organization and its context 4.2 Understanding the needs and expectations of interested parties 4.3 Determining the scope of the information security and service management systems 4.4 Information Security Management System	APO02	None
		APO12	2
		DSS01	3
		DSS04	2
		DSS06	3
		MEA01	2
		MEA02	2
5	Leadership 5.1 Leadership and commitment	APO01	2
	5.2 Policy 5.3 Organization roles, responsibilities and authorities	EDM01	2
6	Planning. 6.1 Actions to address risk and opportunities	APO13	2
	6.2 Information security objectives and planning to achieve them	DSS05	None
7	Support	EMD03	2
	7.1 Resources	EDM04	1
	7.2 Competence 7.3 Awareness	APO07	3
	7.4 Communication 7.5 Documented information	APO12	2
		BAI08	None
		DSS04	2
8	Operation 8.1 Operational planning and control 8.2 Information security risk assessment 8.3 Information security risk treatment	BAI05	None
9	Performance evaluation	EDM02	1
		APO11	None
	9.1 Monitoring, measurement, analysis and evaluation	MEA01	2
	9.2 Internal audit 9.3 Management review	MEA02	2
		MEA03	2
10	Improvement 10.1 Nonconformity and	EDM02	1

corrective action 10.2 Continual improvement		
	APO11	None
	DSS04	2

Based on the mapping between ISO 27001: 2013 requirement structure and COBIT process, some processes have no capability value. Those COBIT processes previously aren't available in the previous year's assessment and is not used as an object of assessment in this case study.

VII. SUGGEST FOR IMPROVEMENT.

To provide improvements based on the results obtained from this case study provided suggestions or inputs that can be done company. Based on the framework developed, improvement suggestions are intended for improving the COBIT 5 governance process and recommendations for the needs of ISO 27001: 2013. The suggestions will be related to each other.

A. For EDM Process.

Based on the results of the survey obtained the capabilities the EDM process which two of the processes are at level 1 (Performed Process) and with Rating Scale L (Largely Achieved). To increase the level process, it needs to reach at least 85% -100% Rating Scale F (Fully Achieved). To achieve those, the company needs to ensure the specific artifacts. The shape of artifacts doesn't necessarily form as a certain named document, but at least functioning as a record of proses whatever the shape it is. Here's what artifacts are needed:

- EDM02 Ensures Submission of Benefits
  1) EDM02-WP1: Document evaluation of strategy alignment.
  2) EDM02-WP2: Document Evaluation of investment portfolios and services.
  3) EDM02-WP3: Documentation Types and investment criteria.
  4) EDM02-WP4: Documentation Requirements for stage-gate reviews.
  5) EDM02-WP5: Feedback documentation on portfolio and program performance.
  6) EDM02-WP6 Documentation Measures to improve the delivery of value (value delivery).
- EDM04 Ensures Resource Optimization
  1) EDM04-WP1: Guiding principle for resource allocation and capability.
  2) EDM04-WP2: Guiding principle for corporate architecture.
  3) EDM04-WP3: Resource plan approved.
  4) EDM04-WP4: Communication resource strategy.
  5) EDM04-WP5: Assignment of responsibility for resource management.
  6) EDM04-WP6: Principle to protect resources.
  7) EDM04-WP: Feedback on resource allocation and effectiveness and capability.
  8) EDM04-WP8: Remedial action to overcome deviation of resource management.

B. For ISO 27001:2013 Requirement.

One of the important things in ISO certification is the fulfillment of the requirements of the standard and accompanied by physical evidence, such as documentation or archives. For companies that use the COBIT framework and implemented seriously then the fulfillment of the requirements of the ISO standard, one of which is ISO 27001, will be done smoothly. In COBIT 5, if the company meets the 1st level with a minimum scale of 85% -100% (Largely Archive), then meeting the need for evidence for certification will shorten the time. This is because the output or work product produced in each process COBIT 5 is required to do archiving process, so that work product can serve as ISO evidence. Based on the mapping of COBIT capability value in XYZ Company with ISO 27001: 2013 requirement is known that two EDM process as the research object has been described as improvement suggestion to reach level 2. Besides EDM, there are some COBIT processes which aren't available in the previous assessment thus they capability are still unknown.

The XYZ Company need to perform a COBIT assessment using the Process Assessment Model COBIT 5. To obtain an appropriate value in order to meet ISO 27001: 2013 requirements, the COBIT process must have at least a F-grade (Fully Archive)

value of 85% -100%. Here is the COBIT process that needs assessment:

- APO 02 Managing Strategy
- APO 11 Managing Quality
- BAI 05 Managing the Empowerment of Organizational Change.
- BAI 08 Managing Knowledge
- DSS 05 Managing Security Services

VIII. CONCLUSION.

Based on the results of governance evaluation on XYZ Company, the following conclusions are obtained:

1.   Domain processes between the three divisions of the Strategic Planning Division, IT Development Division, and IT Operations Division have many similarities. This is because the goals of each division are derived from the same target of the same directorate. New domains identified under the three division goals are APO 02 (Managing Strategy), APO 04 (Managing Innovation), APO 11 (Managing Quality), BAI 03 (Managing & Building Identification Solutions). The new process domains contained in the IT Strategy and Operational Planning division are BAI 09 (Managing Assets) and DSS 05 (Managing Security Services). While the domain of the process that is only found in the Division of Strategic Planning is BAI 08 (Managing Knowledge)

2.   The result of the assessment of IT governance process in XYZ Company are the process of EDM 01, EDM 03, and EDM 05 is valued as 2. The other processes, EDM02 and EMD04 are valued as 1. There is a gap with the value of 1 comparing with the target capability of the company that is 2.

3.   Mapping between capability value and Management System Requirement ISO 27011: 2013 resulted in identification of COBIT process with unknown capability value. The unknown COBIT 5 process capabilities are APO 02 (Managing Strategy), APO 11 (Managing Quality), BAI 03 (Managing & Building Identification Solutions) and BAI 08 (Managing Knowledge). The process of COBIT is included in the new domain of division goal cascading results as mentioned in point 1.

IX.   SUGGESTION.

Here are suggestions for further research development:

1.   The mapping between the COBIT 5 process and ISO 27001: 2013 can be complement by mapping with ISO 27001: 2013 Control Objectives and Controls.

2.   Measurement of capability level using questionnaire with basic archive name or documentation from Work Product COBIT 5. For more accurate assessment can be done with direct interview method but with more accurate and limited resource, such as Responsible (R) and Accountable (A).

3.   The migration process to COBIT 5 requires a very accurate understanding of corporate goals. It would be better if the company developed its own goal cascading in accordance with the circumstances and needs of the company.

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