

Security Management Analysis of Security Services Using Framework COBIT 5 Domain DSS05

Case Study: Document publishing service for Indonesians at Immigration Office Denpasar

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Abstract—Immigration Denpasar Office is one of the technical service units performing task and function Directorate General of Immigration. The immigration document publishing is one of the functions of the services implemented by Immigration Office Denpasar. Data security is the most important thing in document publishing activities for Indonesian. To find out the level of capability and conditions of IT governance in document publishing service for Indonesians, an IT governance analysis activity relates to service management in security and data accuracy is required. The results of the analysis are expected to produce recommendations to improve IT management related to security services, it can better support the organization's business objectives in the future. The study used capability model as a measuring tool to respondents answers related to questionnaires based on COBIT 5 domain DSS05 (Manage Security Service) framework consisting of 8 subprocesses, with total 43 statements. The result of the recapitulation show the level 3 with the status of Largely Achieved gained 83% indicates the process of information security services have done regularly implemented.

Keywords—COBIT 5, Service IT

I. INTRODUCTION

Information and communication technology is a tools that has an important role to assist in working with information and performing tasks related to data processing. The needs of information systems for the entire organization led to the development of information systems so rapidly. Implementation of information and communication technology on the process of public service in a government institution is seen as a solution that will be able to improve the ability of service functions.

Immigration Office is a technical service unit performing task and function Directorate General of Immigration in certain area. An Immigration Office having jurisdiction covering one or more city areas. Main tasks of immigration which have the function of service, law enforcement and security, such as: carry out the task of information and means of communication of immigration, carry out tasks in the field of immigration traffic, carry out the tasks in the field of immigration status, carry out tasks in the field of supervision and action of immigration.

Denpasar immigration office is one of the government institutions which already use information technology. The role of information and communication systems must be balanced with appropriate arrangements and management so that possible losses or threats can be avoided and even preventable. Data lost or threat could appear from some issues such as the case of data loss, data leakage, the information is not accurate caused by the incorrect processing data then the integrity data can not be maintained, computer missuse, as well as the procurement of investment in information technology and high value communication but not matched with returns appropriate values. These things certainly have an impact on decision making and affect the effectiveness and efficiency in achieving the goals of the government institution's strategy.

Based on the above description, the audit of management information system control or audit of management information technology for passport service at Immigration Office Denpasar is required. The information technology audit within the Cobit 5 framework is a comprehensive standard that helps institutions achieve their goals and generate value through good governance and effective information technology management. Framework used in information technology audit is COBIT 5. COBIT 5 is a comprehensive standard that helps companies in achieving goals and generate value through good governance and effective management of information technology [9]. COBIT 5 provides a complete framework. There are five domains and 37 processes in COBIT 5 can be used to conduct the audit. Therefore COBIT 5 is considered appropriate and may assist in the process of audit of information technology as it includes all the elements of information technology that is used[1]. The author wants to do research by assessing the implementation of IT governance that has been running at the Immigration Office Denpasar which aims to know is at the level of maturity where the IT governance at the Immigration Office Denpasar.

Formulation of the problem

- What is the level of IT governance capability and condition related to information security service process at document publishing service for Indonesian citizens based on COBIT 5 framework?
- How is the improvement strategy to achieve better levels of information security services management capabilities?

Scope of problem

- IT governance analysis is only related to the performance of Denpasar Kanim related to the management of SIMKIM based on the DSS05 process COBIT framework.

II. LITERATUR RIVIEW

Audit is a systematic process of obtaining and assessing evidence objectively related to economic actions and events to determine the level of compliance with applied criteria and communicating the results to interested parties [2]. The definition contains a broad meaning and applies to all types of auditing or auditing that have different purposes. The key phrases in the definition of audit are as follows:

- Systematic process
Steps or procedures are logical, planned, and organized.
- Obtain and assess evidence objectively
That implies that the auditor checks the basics used to make a statement by management and performs an impartial judgment.
- Economic actions and events
That is a statement about the economic incidence of which is a result of the accounting process information that is made by an individual or an organization.
- Communicate the results to interested parties
That is the last activity of an auditing or auditing is to deliver findings and results to decision makers. The results of auditing are called opinion statements regarding the appropriateness between assertions or statements with the specified criteria.
- The level of conformity of predefined criteria
That is, it specifically provides the reason why the auditor is interested in the statement of supporting evidence. But in order for such communication to be efficient and understandable in the same language by the users, a mutually agreed criterion is required.

IT Governance is an effort to ensure IT management to support even aligned with the business strategy of an enterprise conducted by the board of directors, executive management, and also by IT management (Surendro 2009). IT Governance is a structure of relationships and processes to organize and control a company that aims to achieve corporate goals that have been established with value added while still balancing the risks to the value derived from the application of IT and each process (Weill & Ross 2004).

IT Governance is not a separate area of corporate management, but rather a component of overall corporate management, with the following key responsibilities:

- Ensure stakeholder interests are included with in the preparation of corporate strategy.
- Provide direction to processes that implement corporate strategy.
- Ensure that these processes produce measurable outputs.

- Ensure information about the results obtained and measure them.
- Ensure the output is generated as expected.

IT governance describes the application of organizational principles by focusing on management activities and IT usage for the achievement of organizational goals. IT Governance basically involves decision-making, accountability for the implementation of IT usage activities, who makes decisions and manages IT-making processes and IT-related decisions. (Widjajanto et al., 2012). An effective IT Governance means the use of IT in the organization is able to improve and the synergy between the use of IT with the vision, mission, goals and values of the organization concerned [3].

COBIT (Control Objectives for Informrtion and Related Technology) is a set of documentations and a guide who directs the IT Governance and Management of IT that can help auditors, management, and user (user) to bridge the GAP between business risks, control needs and Problems of technical. COBIT was developed by an institution TI Institute Governance (ITGI), which is part of the System Information and Control Association (ISACA) [6].

In COBIT 5 version there are five (5) key principles of governance and management of IT companies, the five principles requires and show in Figure 1.

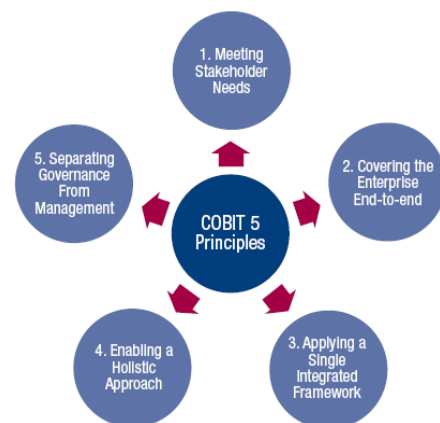


Figure 1 The five key principles of COBIT 5 (ISACA: 2012)

COBIT 5 framework makes a clear distinction between governance with management. Both of these disciplines have differences in terms of activity, the needs of the organizational structure and serve different purposes show in Figure 2.

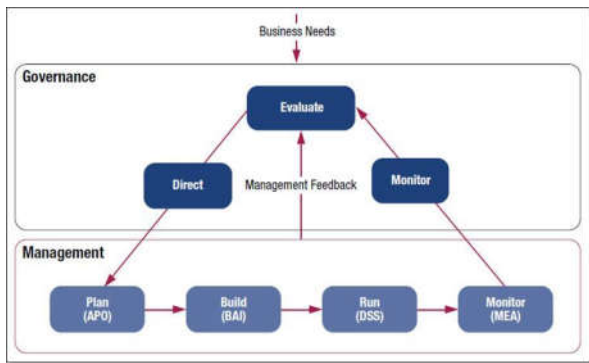


Figure 2 Governance and Management Key Areas (ISACA: 2012)

In COBIT 5 there is a process reference model that define and explain in detail about the process of governance and management. The model represents all the processes commonly found in companies that deal with IT activities, as well as a reference model provides an easily understood in IT operations and a business manager. The model given process is a model of a complete and thorough, but not the only model of the process that may be used. Each company must determine its own process circuit in accordance with the specific situation. In a reference process model is the successor of the COBIT 5 process model, by integrating the process model of Risk IT and Val IT. In total there are 37 processes of governance and management in COBIT 5.

III. RESEARCH METHOD

Steps workmanship measurement of maturity level with COBIT 5 can be seen in figure 3:

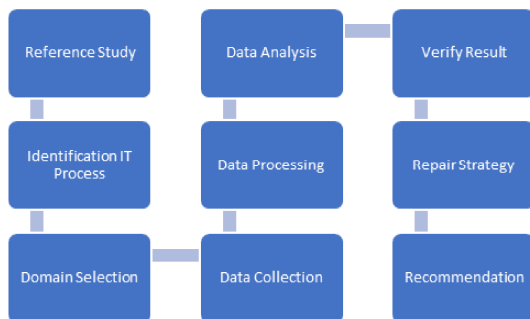


Figure 3 Research Method

The following is an explanation of the steps of the research methodology

A. Reference Study

The study was conducted at the Denpasar Immigration Office in section documents publishing service for Indonesian.

B. Identification IT Process

Identify the IT process by studying the operational standards of the procedures of the travel document publishing service (passport) and simkim application on the immigration document publishing service for Indonesian.

C. Domain Selection

E-Government maturity analysis using COBIT 5 on DSS05 domain (Manage Security Services)

D. Data Collection

The process of collecting data in the form of observations, questionnaires and interviews related to research. The observation is done by studying the operational standard of procedures from the issuance of immigration documents for Indonesian citizens. Questionnaires are used to measure the level of capability of IT governance process related to the management of information security services at immigration document publishing service for Indonesian. The interview was conducted by determining 4 staff who directly use the simkim application on the publishing document service section.

E. Data Processing

Data processing is done by observation, interview, and questionnaire to related parties using assessment tool template COBIT 5 from ISACA.

F. Data Analysis

- The process of data analysis is done with the analysis of current capability (as is)
- Analysis of the results of the calculation of the questionnaire is done on each PA achieved to determine the condition of IT governance is running
- gap analysis. Conducted to find the difference between the level of capability obtained with the intended level or expected.

G. Verify Result

The result of the capability analysis, then performed in the form of verification process against the facts that exist.

H. Repair Strategy

After the verification process, then process improvement strategy based on data..

I. Recommendation

Recommendations are given on the associated domain of COBIT 5

IV. ANALYSIS AND RESULT

The results of COBIT 5 frame work analysis of IT governance capability analysis in Deliver, Service, and Support (DSS) domains related to the management of security services on the issuance of immigration documents for Indonesian citizens by using capability model presented in figures and graphs, can make it easier to analyze and determine the needs that need in the future. Service and support is already equipped with the technology to support the procedures and information technology support services.

This study uses capability model as a measuring tool to respondents' answers from questionnaires made based on framework COBIT 5. The questionnaire contains statements derived from DSS domains in the DSS05 (Manage Security Services) process of enterprise information protection to maintain the level of information security risks at minimum points according to the security policy. In this process consists of 8 subprocesses, with a total statement of 43 questions.

Based on the recapitulation of responses from respondents, it is found that the current capability shows at level 3 with Largely Achieved status of 83% indicating that the process of managing the security services has been implemented and has regularity in its management. The results of recapitulation can be seen in table 1.

TABEL 1. CAPABILITY CALCULATION RESULT

Process Name	Level 1	Level 2	Level 3	Level 4	Level 5
DSS05	PA 1.1	PA 2.1 PA 2.2	PA 3.1 PA 3.2	PA 4.1 PA 4.2	PA 5.1 PA 5.2
Rating by Criteria	F	F	F	L	L
Capability Level Achieved	As is				

Graph of the measurement gap capability level results can be seen in Figure 4

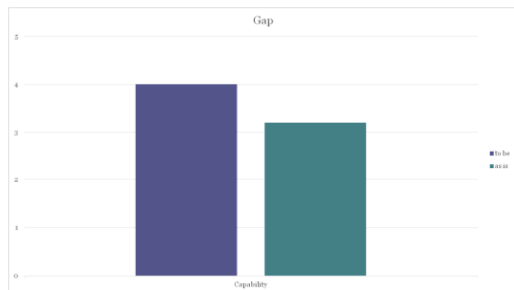


Figure 4 Graph of Capability Level

The results of each process being examined related to the level of security management of Simkim, Immigration Office Denpasar in Section documents publishing service for Indonesian has implemented services and support of information technology governance well proven from the existence of operational procedures in service, incident handling procedures and maintenance of appropriate business controls. Security management should still be improved to meet future expectations. Continuous control of each process needs to be done to achieve the desired level of capability.

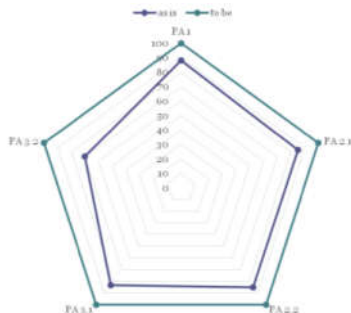


Figure 5 Graph of Maturity Level Comparison

Recommendation

- Conduct IT training related to data security
- Evaluate the policy in the implementation of the activity
- The need for additional personnel in accordance with the competencies and rules that apply

V. CONCLUSION

1. Capability for domain DSS 05 is at level 3 (established process)
2. Immigration office Denpasar has achieved the expected target
3. Immigration office Denpasar must continue to implement IT governance and continuous improvement

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