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Cobit Framework Implementation 5 DSS Domain (Deliver, Service and Support) ITCC ITPLN Information Technology Governance Audit

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ABSTRACT

Information Technology Certification Center (ITCC) ITPLN is a certification unit that implements IT governance with Office 365 applications. IT governance in Office 365 applications requires an audit to evaluate and assess capabilities and make recommendations on IT governance at ITCC. This is because ITCC has never evaluated its IT governance. Therefore, until now, ITCC does not know the extent of the benefits and impacts obtained from the application of IT on the progress of achieving goals related to information system management. ITCC also does not know what the weaknesses are or what the solutions might be. The audit standard used is Control Objectives for Information and Related Technology (COBIT). The chosen COBIT 5 domain is the Deliver, Service, and Support (DSS) domain, which focuses on the assessment of delivery and information technology services as well as their support for ongoing business processes, including problem management, so that the sustainability of business processes is maintained. In addition, it is also intended to control, evaluate, and plan long-term business processes. The result is the overall Capability Level on Office 365 in ITCC.

KEYWORDS *Audit of IT governance, COBIT 5, DSS, Capability Level, ITCC*

INTRODUCTION

Currently, Information Technology (IT) plays a very important role for companies or institutions that operate at an enterprise scale (Porter & Heppelmann, 2014). The company or institution acts as a supporter in achieving the company's strategic plan to fulfill the goals or vision and mission (Zhao et al., 2018). The company or institution strives to implement a system to meet all its needs so that it can achieve its goals, such as enhancing work operational activities (Chong et al., 2017). IT enables organizations to improve efficiency, reduce costs, and streamline operations, contributing to better decision-making and overall performance (Avasarala & Arora, 2018). The function of information technology

not only improves operational activities but also provides additional value, assessments, and competitive advantages (Teece, 2014). Information systems enable firms to develop innovative business models, gain insights from data analytics, and foster digital transformation (Brynjolfsson & McAfee, 2014). Furthermore, leveraging IT capabilities has been proven to create a strategic advantage, enhancing organizational flexibility and responsiveness to market changes (Liu et al., 2020).

With the various advantages and importance of Information Technology, the Competency Certification Institute implements it into its operational processes (Chien & Tsai, 2012). Certification bodies can utilize Information Technology for administrative services, support training activities, serve as a medium of communication, and assist in decision-making (Kerr, 2018). The use of Information Technology in certification systems enhances operational efficiency and supports better management of training and certification data (Mohammad & Yusoff, 2021). By implementing effective information technology at the certification body, the quality of services will improve (Kraemer-Mbula & Wunsch-Vincent, 2020). Information technology also contributes to the accuracy of decisions in certification processes by providing access to updated databases and analytics (Bhatti et al., 2015). IT integration also fosters transparency and accountability, which are essential in the certification process (Bawden & Robinson, 2019). ITCC ITPLN is one of the professional certification units (Professional Certification Center) under the auspices of the Education and Welfare Foundation of PT. PLN Persero, leveraging IT for improved service delivery (Hosseini et al., 2020).

The evaluation of Information Systems/Information Technology (SI/IT) at ITCC ITPLN has never been conducted before, especially in terms of progress in achieving the goals and values of information technology governance and management, due to the high costs required to hire a professional and certified IT auditor (Scholl, 2020). Thus, until now, ITCC ITPLN has been unable to ascertain the extent of benefits and impacts derived from the implementation of SI/IT on goal achievement and information systems management, as well as the shortcomings and solutions offered.

Several standards have been developed regarding the application of information technology, including Control Objectives for Information and Related Technology (COBIT) 5 and Information Technology Infrastructure Library (ITIL). ITIL focuses on customer services but does not provide a process for aligning corporate strategy with the IT strategy being developed. Meanwhile, COBIT 5 is a comprehensive standard that helps companies achieve goals and generate value through effective information technology governance and management. COBIT 5 provides a detailed IT Governance framework and control

objectives for management, business process owners, users, and auditors. It manages IT holistically to maximize the value provided by IT, paying attention to all aspects of information technology governance, including people, skills, competencies, services, infrastructure, and applications as enablers of information technology governance.

The Deliver, Service, and Support (DSS) domain was chosen because it aligns with the IT governance conditions at ITCC ITPLN, which is applied to the current Office 365 product that has been planned, built, and is currently operating. ITCC is highly based on workflows and business processes. Other domains such as Align, Plan, and Organize (APO) are more suitable for IT governance that has not yet been implemented or is still new. The Build, Acquire, and Implement (BAI) domain is more suitable for units specifically acting as developers or intending to improve IT governance technically. The Monitor, Evaluate, and Assess (MEA) domain suits IT governance that has been established and is monitored internally, considering monitoring is more frequent than audits, so MEA is better for monitoring rather than auditing. Given that the current IT governance at ITCC ITPLN is operational with Office 365 and needs to deliver services, serve requests, and support sustainability, the DSS domain is the appropriate choice as it covers these concerns.

A system effectiveness audit is performed after a system has been running for some time, providing management with evaluation or input to decide whether the system's performance is adequate, needs improvement, modification, or is good. Such audits are often requested by management to determine to what extent the system has achieved its goals and can be conducted periodically.

Therefore, COBIT 5 is appropriate and can assist in auditing information technology governance by focusing not only on technical technology issues but also on other resources driving IT governance toward organizational goals. The author is interested in researching IT Governance at ITCC ITPLN using the COBIT 5 Domain Deliver, Service and Support (DSS) framework. The purpose is to obtain results or recommendations for the IT Governance Audit at ITCC ITPLN, leading to improvements in the current IT Governance Audit.

RESEARCH METHOD

To maintain the focus of this research, some limitations were set: the Information System Audit at ITCC ITPLN focused only on the DSS (Deliver, Service and Support) domain contained in COBIT 5. Interviews were conducted to identify the strategic goals of the organization or company, which were then used for enterprise mapping, followed by IT-related goals mapping for the enterprise, and then RACI mapping. Subsequently, existing conditions were assessed through interviews and questionnaires using a web-based application that had been

developed. Afterward, a capability level analysis was performed, followed by an identification of the gap level and a gap analysis, which produced recommendations.

RESULTS AND DISCUSSION

A. Enterprise Mapping

The result of Enterprise mapping based on 5 strategic goals of environmental development is EG1 : Stakeholder value of business investments, EG2 : Portfolio of competitive product and services , EG3 : Managed business risk (safeguarding of assets), EG4 : Compliance with external laws and regulations, EG5 : Financial transparency, EG6 : Customer-oriented service culture, EG8 : Agile responses to a changing business environment, EG11 : Optimisation of business process functionality, EG15 : Compliance with internal policies

B. IT Mapping Related to Enterprise Goals

The results of the IT-Related mapping are IT-R1 – ITR13, then IT-R15 – IT-R17.

C. Mapping Process Control with IT Related

The result of the process control mapping is DSS01 – DSS06, which means that all DSS domains are used as the scope of the audit process.

D. Recapitulation of Capability Values

After analyzing the results of the questionnaire, the results of each activity in the DSS (Deliver, service, and Support) domain are obtained and entered into the audit work form. The next action taken is to find the average score in each process to find out how the condition of each existing process is by adding up all the selected levels and then dividing it by the number of question items in each domain.

The following are the results of the recapitulation of process values in the DSS (Deliver, Service, and Support) domain:

Table 1. Recapitulation *Capability*

Process Domain	(Average Level)	(Rounded Level)
(Manage Operations)	4,118	4
(Manage Service Requests and Incidents)	4,208	4
(Manage Problems)	4,045	4
(Manage Continuity)	3,024	3
(Manage Security Services)	4,510	4
(Manage Business Process Controls)	4,156	4

From the *Capability Level* obtained, rounding is carried out to make it easier to find the latest conditions based on the *Capability Level* criteria that have been set. In carrying out the rounding, the concept of determining a certain *process capability* is used, namely a process will reach *Level* k if all attributes before *Level*

k are *fully achieved* and all attributes at Level k have *been met largely* (>50% to 85%) or *fully achieved* (>85%). Here the author uses options that are *fully achieved* or *Level* met with a value of >85%, which is felt to be more accurate in assessing or describing existing conditions.

E. Assessment of existing conditions

1. Existing DSS01 Conditions

Based on the audit conducted on the DSS domain, the *existing* conditions from DSS01 are obtained:

a. Carrying out attendance and recap activities are done well by being carried out during certification activities. Implementing a picket system in managing *incident* tickets

b. The management of IT *assurance assessments* has been regulated through *SLAs (Service Level Agreements)*

c. Monitoring or supervision of assets and incidents using office 365 applications managed by each Information System application management division

d. Recording of activities or incidents that occur using event management tools managed by each PIC that manages the Information System application

e. Manage ticket incidents using the Office 365 application managed by each Information Systems application management division

f. Managing the IT environment is regulated in the *System Operating Procedure (SOP)*
and *System Maintenance Procedure (SMP)*

g. Managing IT Facilities is regulated in the System Operating Procedure (SOP) and System Maintenance Procedure (SMP)

h. The device follows the training center certification standards. The assistant rules follow the rules of PLN's IT HR

i. It does not use insurance on the device, but uses a maintenance contract (if damaged, it will be repaired / corrective maintenance) and preventive maintenance (per 3 months). Related parties who came to ITCC IT PLN.

j. Room security still uses ordinary keys, human security uses *passwords*, system security has used *security procedures.*

2. Existing DSS02 Conditions

Based on the audit conducted on the DSS domain, the *existing* conditions from DSS02 are obtained:

a. In carrying out incident services and service requests, a service scheme/SOP has been made regarding *incident requests.*

b. Exist rules regarding incident handling and have been documented in

the form of SLAs.

c. Service *management and incident management are managed using* office 365 *(*Tools incident service*):* Problem management *and* request management

d. The incident that occurred was experienced by the Assistant who was then forwarded to the Head of ITCC in the form of an official memorandum to the intended party, then by the intended part reported to the intended division.

e. *Office 365* manages incidents by obtaining *requests* from Participants in the form of per *ticket request* so that they can be handled individually

3. Existing DSS03 Condition

Based on the audit conducted on the DSS domain, the *existing* conditions from DSS03 are obtained:

a. The relevant divisions classify the problems that arise
b. The problems that exist are recapped and fixed directly by the relevant divisions
c. Investigate and diagnose problems that arise
d. Problems that arise are managed and immediately fixed
e. If an error occurs in Office 365, then corrective action is taken.

4. Existing DSS04 Conditions

Based on the audit conducted on the DSS domain, the *existing* conditions from DSS04 are obtained:

a. Derivation of the Institution's objectives from the coordinator (with the Decree of the Head of ITCC), then through the Head of ITCC, then delegated to the next Leader to become a business process
b. Disturbances that occur in participants will then be reported to the Information Systems Division and will then be analyzed and action taken
c. Assessment of capabilities and gaps in business processes is currently the authority of the Head of ITCC, Coordinator and Division of Finance Admin
d. The need for business processes is based on the needs of participants that have been approved by the coordinator for compliance. Furthermore, it was conveyed to the Head of ITCC
e. To maintain the sustainability of the strategy in the business process, a review of the business process is carried out on a monthly and annual basis which then results in an analysis of the influence/impact that occurs with the readiness of the Assistant and the choice of strategy that is communicated to all Divisions and approved by the Head of

ITCC. However, reviews of business process every 3 months are sometimes carried out and sometimes not carried out

f. To respond to the incident, the relevant assistant reported to the Admin Division Section using an official memorandum containing incidents and repair requests.
g. The results of the analysis of the guidance process carried out by the Coordinator and Assistant regarding the performance aspect and the impact of risk
h. The Coordinator and Head of ITCC have a 1-Year Business Plan Continuity There are targets that must be achieved.
i. The review report is reported during the meeting (performance evaluation and future plan) should be carried out every 3 months, but sometimes it is carried out and sometimes it is not.
j. The internal control sheet still uses manual, namely Microsoft Word

5. Existing DSS05 Condition

Based on the audit conducted on the DSS domain, the existing conditions from DSS05 are obtained:

a. On PCs, there is already a legal antivirus. There is a firewall before entering the data centre. Security reviews are carried out every 3 months
b. Connectivity Limited by firewall. Only certain ports are open (normally close). In the process, there must be a written permit (official note) from the authorities. Before it can be accessed using the internet, the system must pass the furiabirity test.
c. Penetration Test Ever existed (once done). Just not periodic.
d. The software uses the original license. If the software is not in the software catalog, then the program will not run.
e. User access reviews are carried out every 3 months.
f. Device inventory is available in the Technical Support Division
g. The access rights to be able to access the device have been screened since entering the room, after that to enter the device also requires the input of the ITCC account username and password
h. Log reviews are conducted every 3 months. To back up input data, it has been automatically backed up in the system
i. For system security, use firewall logs and antivirus logs, which will then be known for security, as well as log reviews every 3 months.
j. Incident management using the Office 365 app helpdesk

6. Existing DSS06 Condition

Based on the audit conducted on the DSS domain, the *existing* conditions from DSS05 are obtained:

a. The alignment of control activities in business processes with reference to ITCC targets has gone well. Equipped with an accountability report and also an analysis of the root causes that arise
b. The report from the results of the review of the effectiveness of business processing is carried out by the Head of ITCC which then reports the results and corrections at the coordination meeting between the Leadership and the Head of ITCC on a monthly and annual basis
c. Continuous monitoring, incident documentation and error reporting
d. Roles, responsibilities, access rights and Authority levels have been defined in the User Access Matrix (UAM) document
e. There are records in the information system directly in Office 365 that can be used to ensure the track of information activities and their accountability.

F. GAP *Analysis*

This gap *analysis* is carried out to find the difference between *the level of capability* obtained and the target level to be achieved. In determining the target level, it is determined by the level that is being targeted from the average level obtained. For example, for DSS01 obtained an average level of 4.029, DSS01 is in the stage of reaching Level 5 capability and still reaches 0.029 or 2.9% above Level 4 or less than 0.971 or 97% towards Level 5. So the target level is set at Level 5.

1. DSS01 *Gap* Analysis

Based on the analysis of the results and the determination of *the capability level* in DSS01, it has been obtained that the DSS01 *capability level* value is at Level 4, namely that DSS01 is in the *Predictable Process* which means that DSS01 is carried out, activities, policies and rules are documented and produce optimal services/information that have been monitored and analyzed. The target level to be achieved is Level 5, namely *Optimizing Process*.

Table 2. *DSS01 Gap Analysis*

Process Name	Level Existing	Level Target	Gap
DSS01 Manage Operations	4	5	1

To get to Level 5, what must be done is to make innovations and strategies for the development of activities according to the results of the analysis of activities that have been standardized previously as well as maximize activities that have been running quite well.

2. DSS02 *Gap* Analysis

Based on the analysis of the results and the determination of *the*

capability level in DSS02, it has been obtained that the DSS02 *capability level* value is at Level 4, namely that DSS02 is in the *Predictable Process* which means that DSS02 is carried out, activities, policies and rules are documented and produce optimal services/information that have been monitored and analyzed. The target level to be achieved is Level 5, namely *Optimizing Process*.

Table 3. *DSS02 Gap Analysis*

Process Name	Level Existing	Level Target	Gap
DSS02 Manage Service Requests and Incidents	4	5	1

To get to Level 5, what must be done is to make innovations and strategies for the development of activities according to the results of the analysis of activities that have been standardized previously as well as maximize activities that have been running quite well.

3. DSS03 *Gap* Analysis

Based on the analysis of the results and the determination of *the capability level* in DSS03, it has been obtained that the DSS03 *capability level* value is at Level 4, namely that DSS03 is in the *Predictable Process* which means that DSS03 is carried out, activities, policies and rules are documented and produce optimal services/information that have been monitored and analyzed. The target level to be achieved is Level 5, namely *Optimizing Process*.

Table 4. DSS03 Gap Analysis

Process Name	Level Existing	Level Target	Gap
DSS03 Manage problems	4	5	1

To get to Level 5, what must be done is to make innovations and strategies for the development of activities according to the results of the analysis of activities that have been standardized previously as well as maximize activities that have been running quite well.

4. DSS04 *Gap* Analysis

Based on the analysis of the results and the determination of *the capability level* in DSS04, it has been obtained that the DSS04 *capability level* value is at Level 3, namely that DSS04 is in *the Established Process* which means that DSS04 has been carried out, there is an application standard in carrying out the process, it is documented and communication is going well. The target level to be achieved is Level 4, namely *Predictable Process*.

Table 5. DSS04 Gap Analysis

Process Name	Level Existing	Level Target	Gap
DSS04 Manage continuity	3	4	1

To get to Level 4, what must be done is to determine the size of the service or information to be generated and ensure that the size of the service is achieved, then monitor and analyze it.

5. DSS05 *Gap* Analysis

Based on the analysis of the results and the determination of *the capability level* in DSS05, it has been obtained that the DSS05 *capability level* value is at Level 4, namely that DSS05 is in the *Predictable Process* which means that DSS05 is carried out, activities, policies and rules are documented and produce optimal services/information that have been monitored and analyzed. The target level to be achieved is Level 5, namely *Optimizing Process*.

Table 6. DSS05 Gap Analysis

Process Name	Level Existing	Level Target	Gap
DSS05 Manage security Services	4	5	1

To get to Level 5, what must be done is to make innovations and strategies for the development of activities according to the results of the analysis of activities that have been standardized previously as well as maximize activities that have been running quite well.

6. DSS06 *Gap* Analysis

Based on the analysis of the results and the determination of *the capability level* in DSS06, it has been obtained that the DSS06 *capability level* value is at Level 4, namely that DSS06 is in the *Predictable Process* which means that DSS06 is carried out, activities, policies and rules are documented and produce optimal services/information that have been monitored and analyzed. The target level to be achieved is Level 5, namely *Optimizing Process*.

Table 7. DSS06 Gap Analysis

Process Name	Level Existing	Level Target	Gap
DSS06 Manage Business Process Controls	4	5	1

To get to Level 5, what must be done is to make innovations and strategies for the development of activities according to the results of the analysis of activities that have been standardized previously as well as maximize activities that have been running quite well.

G. Overall Gap Analysis

The following are the results of the implementation of the audit,

the results of *the Capability Level* for the entire process are as follows:

Table 8. Overall Gap Analysis

Process Name	Level Existing	Level Target	Gap
DSS01 Manage Operations	4	5	1
DSS02 Manage Service Requests and Incidents	4	5	1
DSS03 Manage Problems	4	5	1
DSS04 Manage Continuity	3	4	1
DSS05 Manage Security Services	4	5	1
DSS06 Manage Bussiness Process Controls	4	5	1

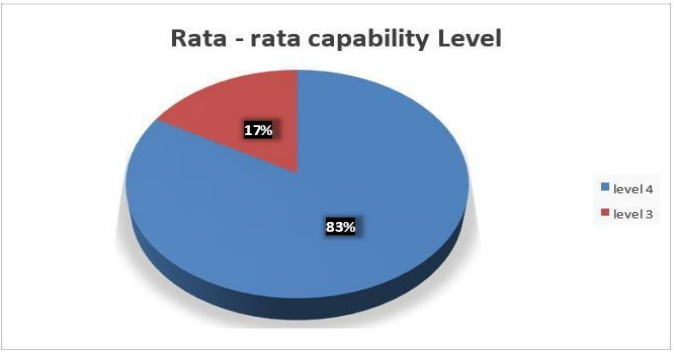

Figure 1. Average Capability Diagram

The *capability level* of each DSS COBIT 5 domain process is obtained from figure 1, it can be seen that the average *capability level* obtained is at Level 4, namely *Predictable Process*. This means that activities, policies and rules are documented and produce optimal services/information that have been monitored and analyzed. And to reach Level 5, namely *the Optimizing Process*, what must be done is to make innovations and strategies for the development of activities according to the results of the analysis of activities that have been standardized previously as well as maximize activities that have been running quite well.

CONCLUSION

The audit conducted at the *ITPLN Information Technology Certification Center (ITCC)* within the *COBIT 5 DSS (Deliver, Service and Support)* domain revealed that the pre-audit processes aligned well with the ITCC IT PLN Information System governance conditions, covering audit standards DSS01 through DSS06. Results showed one process (DSS04) at Capability Level 3 and five processes (DSS01, DSS02, DSS03, DSS05, DSS06) at Level 4. Stakeholders set improvement targets one level higher—Level 5 for most processes and Level 4

for DSS04—resulting in an average capability level of 4, indicating effective standardization, monitoring, measurement, and future planning of DSS activities. Recommendations focused on strengthening process controls, fostering business innovation, improving DSS04 performance, and maintaining consistent control and evaluation of annual plans. For future research, it is suggested to extend capability assessments to other COBIT 5 domains, incorporate scoring in evidence collection to enhance recommendation clarity, and explore alternative methods for validating and determining capability levels across activities.

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