

# The process capability model for governance of the Election Organizer Ethics Court system

Syopiansyah Jaya Putra

Information System Department, Faculty of Science and Technology

UIN Syarif Hidayatullah, Jakarta, Indonesia

syopian@uinjkt.ac.id

**Abstract-** The capability level assessment for governance of the Election Organizer Ethics Court Information System [SIPEPP] is necessary to ensure strategic planning alignment, value delivery, risk management, resources management, and performance measurement. SIPEPP implementation has many problems in the optimization of human resources because workload exceeds scope tasks, weak supervision management, and often data redundancy, so it is important to assess the level of ability to provide solutions to these problems. The purpose of this paper is to assess the current and expected capability level conditions, gap analysis and recommendations for SIPEPP good governance. This research method uses the Process Assessment Model (PAM) from Control Objectives for Information and Related Technology (COBIT 5) which consists of stages of initiation, planning the assessment, briefing, data collection, data validation, process attribute level, and result and recommendation. The results of this study indicate the level of optimization of resources and performance monitoring processes are level 2 (Managed Process) which means that the process has been recorded, measured and in accordance with the objectives. The process of managing human resources, assets and operations are at level 1 (Performed Process), meaning that both processes have been applied to SIPEPP governance. Recommendations related human resources are the selection of appropriate human resources by involving management, while related assets require a priority list of implementation systems, and related supervision requires detailed monitoring schedules. This study result can be used to evaluate and improve the quality of good governance in the implementation of SIPEPP.

**Keywords-** governance, maturity, capability, ethics

## I. INTRODUCTION

Information technology governance (ITG) is an integrated part of information technology transformation and organizational management that includes leadership, structure and organizational processes to ensure that information technology is utilized as optimally as possible [1]. ITG is also needed to gain value from their IT investments and create a competitive advantage [2].

IT governance changes the condition of organizations in making decisions, regulating processes and establishing organizational structures [3] and by using Function Point Analysis as a tool in improving IT governance specifically in assessment and monitoring [4].

The Election Organizer Ethics Council (DKPP) in the general election in Indonesia is an institution designed as a court of ethics to maintain integrity and professionalisme of the Election Commission (KPU) and the Election Supervisory Body (Bawaslu)[5]. Election Court Ethics Information System [SIPEPP] which is part of the DKPP, is an integrated system consisting of a complaints system (e-Complaints), an ethics court system (e-Trial), administrative and correspondence systems (e-Administration and filing system (e-Archive). The purpose of SIPEPP is to provide excellent services for justice seekers and public information services related to alleged violations of the code of conduct carried out by election organizers.

Control Objectives for Information and related Technology (COBIT 5) is a guideline for implementing IT Governance and management framework to bridge the separation (gap) between business risks, control needs and technical issues [6]. COBIT5 serves to help implement SIPEPP in meeting performance requirements, compliance, getting quality information to meet objectives [7].

Apply maturity models are an approach to improving a company's processes and business process management (BPM) capabilities [8-10]

Process Capability Model approach applied to manage risks and process improvement [11]. Capability level is a dimension of the level of ability that provides measurements of an organization's current conditions and business process alignment to be achieved and conformity to the organization's vision and mission [12]. Capability level assessment is also an integral part of IT governance in organizations that allows supporting business / Information Technology alignment and business value creation [13].

The Process Assessment Model [10, 14, 15] is the basis for assessing the capability of the SIPEPP process in COBIT 5 and supports process improvement which consists of a set of process performance indicators and process capabilities. The indicators used as a basis for gathering objective evidence to establish ratings [14].

Previous IT governance studies [1, 16, 17] identified elements of governance in achieving program development and it was very important for management to make the right decisions and responsibilities that actions align with IT business goals. Similarly [18] the study of the impact of IT Governance on sustainable organizational performance, as well as the organizational culture can affect the performance of IT governance [2].

The method in the previous study in planning and implementing IT and management governance in the public sector involved participative management [19-21].

The success of implementing SIPEPP must be measured through its governance; it is one of the reasons why IT governance is needed by an organization. Likewise, the management hopes to provide SIPEPP governance with good quality, on time and within budget. Thus, it is important for management to assess capability level so that the implementation of governance can be effective in utilizing all resources, as in the case of studies [22] the application of practical and relevant IT governance for the organization.

The problem with the SIPEPP governance implementation is the lack of monitoring and supervision in system development and the imbalance between job requirements and the number of human resources.

This study aims to determine the value of the capability of the current organizational governance (as-is) and desired (to be) conditions in implementing SIPEPP governance by using the COBIT 5 framework, gap analysis and providing recommendations for better implementation of SIPEPP governance

This study uses data collection and analysis methods consisting of observation, interviews and document analysis. The framework used is assessment process activities which consist of stages of initiation, planning the assessment, briefings, data collection, validation data, attributes rating process, and results and recommendations.

## II. RESEARCH METHOD

The data collection methods in this study consist of observation, interviews and document analysis. While evaluating IT governance method is based on the assessment process activities available on COBIT 5.

The SIPEPP governance evaluation method based on the assessment process can be shown in figure 1. The steps of evaluation are explained as follows:

### A. Initiation

The method of data collection methods in this study this initiation stage is the identification of information to determine any process on COBIT 5 which is used to measure the capability level of SIPEPP governance.

At this initiation stage, researchers define COBIT 5 business goals that are aligned with the business and SIPEPP objectives.

The mapping of IT-related Goals has the main process from COBIT 5 that will support the SIPEPP organizational goals related to resource management and Pusdatin. There are 5 COBIT processes that are a priority in the assessment carried out in this study, namely, Ensure Resource Optimization, Manage Human Resources, Manage Assets, Manage Operations, Assess Performance and Conformance.

### B. Planning the Assessment

This stage is planning the SIPEPP governance capability level assessment, which consists of compiling a list of participants, research tools, and data processing and analysis techniques in previously selected domains.

Participants in this study are the head of the bureau, the head of the complaints department, the head of the trial section, the head of the administration section along with the heads of the respective sub-departments and staff.

### C. Briefing

This stage explains to participants to understand inputs, processes, and outputs in the capability level assessment to be carried out. The briefing is also to determine the schedule for collecting documents, evaluating and reporting the results of the SIPEPP governance capability level assessment.

### D. Data Collection

At this stage of data collection, it collects output document information needed in capability level assessment. Identify this document to make it easier to find evidence of findings.

Data collection data for Ensure Resource Optimization includes evaluate, direct and monitor resource management.

Data collection for Manage Human Resources includes maintain adequate and appropriate staffing, identify the skills and competencies of key IT personnel, evaluate job performance, plan and use human resources as well as staff's contract.

Data Collection for Manage Assets includes identify and current asset records, Manage critical and life cycle assets, optimize asset costs and manage licenses.

Data Collection for Manage Operations includes performing standard operational procedures (SOP), managing IT Service Management to outsource, monitoring IT Infrastructure, managing facilities, and infrastructure.

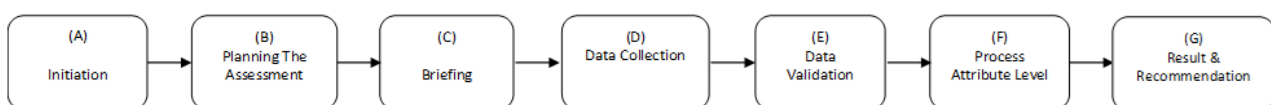


Figure 1. Evaluation Method

Data Collection for Monitor, Evaluate and Assess Performance and Conformance includes monitoring approach, performance and conformance targets, process and target performance and conformance, analyze and report performance, and ensure the implementation of corrective actions.

#### E. Data Validation

At this stage of data validation, check the document findings that have been previously defined. This stage aims to ensure that the findings of the documents submitted by participants are accurate.

#### F. Process Attribute Level

This stage calculates the entire process carried out by evaluating by gradually checking whether the process has met the requirements that must be met at each level.

The six levels of the COBIT 5 Process Capability Model [10, 22] are Level 0 (incomplete process), Level 1 (performed process), Level 2 (managed process), Level 3 (established process), Level 4 (predictable process), and Level 5 (Optimising process).

The following will explain how to calculate the average capability level assessment performed on SIPEPP as follows:

$$CL = ((y_0 * 0) + (y_1 * 1) + (y_2 * 2) + (y_3 * 3) + (y_4 * 4) + (y_5 * 5)) / z \quad (1)$$

where :

- CL is Capability Level
- $y_n$  is number of processes n-level
- z is number of processes assessed

#### G. Result and Recommendation

This final stage is reporting on the results of assessment studies of the capability level for governance of SIPEPP in Manage Human Resources; Ensure Resource Optimization; Manage Assets; Manage Operations; Monitor, Evaluate and Assess Performance and Conformance processes. This reporting is done after getting the findings, the activities of each process and the gap can be made from this study, namely the gap obtained from the condition of the current capability level (as is) and the desired (to be), and the two conditions obtained by means of interviews with related parties.

The recommendations obtained from the calculation of capability level and gap analysis as well as findings that have been collected in the previous step so that a proposal to improve governance of SIPEPP can be obtained to the level expected by the organization

### III. RESULT AND DISCUSSION

In this section, we discuss the results of an analysis of the measurement of the capability level of SIPEPP governance based on the assessment process activities obtained using the data collection method described previously. Based on the stages, it will be explained in detail as follows:

Based on the fact there is a budget that is not managed well, lack of coordination between units related to making

applications, and the imbalance between the needs of work with the number of human resources.

The mapping results of the enterprise goals have five enterprise goals related to SIPEPP resource management, namely financial transparency, optimization of service delivery costs, optimization of business process costs, operational and staff productivity, and skilled and motivated people.

After alignment with the objectives of SIPEPP, namely strengthening SIPEPP including legal basis, policies and programs, and data sources as well as building networks with stakeholders, increasing SIPEPP resource synergy includes the use of information and communication technology, human resources, financing, facilities, and infrastructure. Based on this, aligned enterprise goals are optimization of business process costs

Primary Information Technology (IT) related goal on optimization of business process cost are: (1) realized benefits from IT-enabled investments and service portfolio; (2) transparency of IT costs, benefits and risk; (3) Optimization of IT Assets, resources and capabilities.

Based on the IT-related Goals mapping, there are priority assessment processes carried out in this study, namely: (1) Manage Human Resources; (2) Ensure Resource Optimization; (3) Manage Assets (4) Manage Operations; and (5) Monitor, Evaluate and Assess Performance and Conformance.

#### A. Attribute Rating Process

In this attribute rating process, the level of the subprocess is given by checking the attributes that have been achieved by SIPEPP. This process is to show the results of the assessment of capabilities and levels that have been carried out in the previous stage.

Attribute rating process for Ensure Resource Optimization has reached level 1 in capability level. This process means that SIPEPP gets a rating of 100% or fulfilled as a whole. The subprocess of Ensure Resource Management and Monitor Resource Management gets a rating of 100% which means the process is fulfilled as a whole. While Direct Resource Management gets a rating of 67%, which means that the process is not fulfilled as a whole.

Attribute rating process for Manage Human Resources has reached level 1 in the capability level because the percentage of this process is 81%, at the level of achieved overall between > 50% -85%, meaning SIPEPP gets a rating of 100% or fulfilled as a whole. In the sub-process maintain adequate and appropriate staffing, evaluate employee job performance, plan and track the usage of IT and business human resources, and manage staff contracts, SIPEPP gets a rating of 100%, which means the process is fulfilled as a whole. Whereas the sub-process of Identify key IT personnel and the plan and track of the usage of IT and business human resources, SIPEPP received a rating of 66.67% and 33.33% respectively, meaning that the process was only partially fulfilled.

Attribute rating process for Manage Assets is at level 1 because the processing percentage is 60% where the process is at the level of achieved overall, which is

between > 50%-85%. In the sub-process for identifying and recording current assets, managing critical assets, managing the asset life cycle gets a rating of 100%, which means the process is fulfilled as a whole while optimizing asset costs and managing licenses are not fulfilled.

Based on documents finding, attribute rating process for Manage Operations process is at level 1, because the percentage of this process is 81% which means that it is at the level of achieved overall (50% -85%). In the sub-process operational procedures, IT monitor infrastructure, managing the environment and facilities received a rating of 100%, which means that the process is fulfilled as a whole while managing outsourced IT services is not applicable.

Attribute rating process for Monitor, Evaluate and Assess Performance and Conformance can meet level 1 with fully achieved status because it has exceeded the minimum limit to proceed to the next level (> 85%), which is equal to 90%. Next will be assessed to the next level or level 2 based on Performance Management and Work Product Management. Based on the attribute assessment for Performance Management and Work Product Management carried out in the process of Monitor, Evaluate and Assess Performance and Conformance, it can be concluded that the Monitor, Evaluate and Assess Performance and Conformance processes cannot meet level 3, because the average of both levels it is 79.16%, which means less than 85%, the capability of the assessment is only at level 2.

**B. Capability Level**

Based on a target of capability level is equal to 3. The following results of Capability Level can be shown in figure 2 are explained as follows:

- (1) The process of Managing Human Resources and Manage Assets and Manage Operations is at level 1, which means that the process has been applied to SIPEPP.
- (2) The process of Ensure Resource Optimization and Monitor, Evaluate and Assess Performance and Conformance are at level 2, which means that the process has been recorded, measured and in accordance with the objectives.

Based on the calculation of the capability level assessment, the average rating is 1.4. The following calculation is as follow:  $Capability\ Level = ((0*0)+(3*1)+(2*2)+(0*3)+(0*4)+(0*5))/5 = 1.4$ .

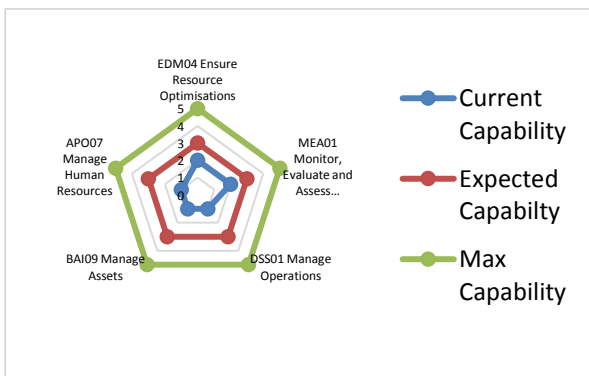


Figure 2. Rating Presentation Diagram of Capability

**C. Findings and Recommendations**

The result findings and recommendations contained in the SIPEPP governance will be explained as follows:

**(1) Manage Human Resources**

There is evidence form the preparation of needs, plans, fulfillment and proposal of employees, and skill development plans namely education and training.

Recommendations on this process are the development and competence of employees, the process of knowledge sharing, especially employees who conduct training, the need to give rewards to employees, need to monitor the use of human resources in more detail and clarity.

**(2) Ensure Resource Management**

There is evidence form the preparation of needs, plans, fulfillment and proposal of employees; Employee Work Target and Employee Work Target Assessment.

Recommendations in this process are the need to create a standard for selecting resources, a standard operation procedure (SOP) related to the maintenance of resources, training, and employee performance appraisal analysis.

**(3) Manage Assets**

The process of asset registers (server and application system) was carried out by the Data and Information Center (PUSDATIN), the communication of planned maintenance downtime process which was followed up by PUSDATIN, the process of authorized asset retirements in the server withdrawal document.

The proposed recommendation is to make audits regularly to evaluate valuable or invaluable assets and produce managing assets policies and standard operational procedures (SOP), register software licenses, set a priority list for SIPEPP sub-system implementation.

**(4) Manage Operations**

In the evidence Network Monitoring System (NMS), there is a process regarding incident tickets in the form of incident reporting forms, policies on SOP documents for network devices, and the existence of processes regarding health and safety awareness.

Recommendations in this process are necessary to make detailed monitoring schedules, outsourced IT service policies, evaluation of processes regarding event logs, evaluation of insurance policy reports, policy needs to be made on how facilities can be maintained.

**(5) Monitor, Evaluate and Assess Performance and Conformance**

There is evidence in the form of monitoring requirements in SOP system implementation documents, approved monitoring goals, monitoring target processes, performance reports in the form of system maintenance report documents, processes regarding remedial actions and assignments that will be followed up by the IT section in the form of request form change documents.

Recommendations need to be made for a monitoring time schedule; evaluation of target, the need for Key Performance Indicators (KPI) related to data collection from process performance, evaluation of performance report documents that are useful for future SIPEPP

performance improvements, what problems should be recorded which often occurs in information centers.

#### IV. CONCLUSION

This study has succeeded in assessing the capability level by using the Process Assessment Model (PAM) and providing recommendations for SIPEPP good governance.

Based on the results of capability level assessment that has been done, current capability level (as is) to ensure optimization of resources and the monitoring process is at Level 2, which means that the process has been carried out, managed and controlled appropriately. Furthermore, the process of managing human resources is at level 1, which means that the process has been carried out and some that have no output or evidence in the process.

Based on the gap analysis, the authors provide recommendations based on problems regarding the budget, which is necessary to conduct regular meetings regarding cost optimization. Recommendations are based on human resource issues, namely human resources management and policy-making in evaluating personnel preparation. Regarding monitoring key performance indicator (KPI) related to performance targets and conformity and making detailed monitoring schedules.

Some suggestions for improving the management of SIPEPP namely further research are expected to be able to proceed to the stages of IT governance design by creating documents that the author has proposed, using different methods and data collection and developing the SIPEPP governance capability level assessment.

#### V. REFERENCES

- [1] P. Aasi, L. Rusu, and S. Han, "The Influence of Culture on IT Governance: A Literature Review," in *System Sciences (HICSS), 2014 47th Hawaii International Conference on*, 2014, pp. 4436-4445.
- [2] P. Aasi, L. Rusu, and S. Han, "The Influence of Organizational Culture on IT Governance Performance: Case of The IT Department in a Large Swedish Company," in *System Sciences (HICSS), 2016 49th Hawaii International Conference on*, 2016, pp. 5157-5166.
- [3] L. A. Janssen, E. M. Luciano, and M. G. Testa, "The influence of organizational culture on IT governance: Perception of a group of IT managers from Latin American companies," in *System Sciences (HICSS), 2013 46th Hawaii International Conference on*, 2013, pp. 4485-4494.
- [4] M. V. B. De Castro and C. A. M. Hernandez, "A metric of software size as a tool for IT governance," in *Software Engineering (SBES), 2013 27th Brazilian Symposium on*, 2013, pp. 99-108.
- [5] M. L. Chakim, "Desain Institusional Dewan Kehormatan Penyelenggara Pemilu (DKPP) Sebagai Peradilan Etik," *Jurnal Konstitusi*, vol. 11, pp. 393-408, 2014.
- [6] S. De Haes, W. Van Grembergen, and R. S. Debrecey, "COBIT 5 and enterprise governance of information technology: Building blocks and research opportunities," *Journal of Information Systems*, vol. 27, pp. 307-324, 2013.
- [7] S. Radhakrishnan and C. C. Assessor, "COBIT Helps Organizations Meet Performance and Compliance Requirements," *COBIT Focus*, pp. 1-6, 2015.
- [8] M. Röglinger, J. Pöppelbuß, and J. Becker, "Maturity models in business process management," *Business process management journal*, vol. 18, pp. 328-346, 2012.
- [9] J. Becker, R. Knackstedt, and J. Pöppelbuß, "Developing maturity models for IT management," *Business & Information Systems Engineering*, vol. 1, pp. 213-222, 2009.
- [10] A. Pasquini and E. Galiè, "COBIT 5 and the Process Capability Model. Improvements Provided for IT Governance Process," *Proceedings of FIKUSZ*, vol. 13, pp. 67-76, 2013.
- [11] P. Fraser, J. Moultrie, and M. Gregory, "The use of maturity models/grids as a tool in assessing product development capability," in *Engineering Management Conference, 2002. IEMC'02. 2002 IEEE International*, 2002, pp. 244-249.
- [12] W. Van Grembergen, S. De Haes, and E. Guldentops, "Structures, processes and relational mechanisms for IT governance," in *Strategies for information technology governance*, ed: Igi Global, 2004, pp. 1-36.
- [13] S. P.-J. Wu, D. W. Straub, and T.-P. Liang, "How information technology governance mechanisms and strategic alignment influence organizational performance: Insights from a matched survey of business and IT managers," *Mis Quarterly*, vol. 39, pp. 497-518, 2015.
- [14] S. COBIT, "A Business Framework for the Governance and Management of Enterprise IT," *Rolling Meadows*, 2012.
- [15] L. Al Omari, P. H. Barnes, and G. Pitman, "Optimising COBIT 5 for IT governance: examples from the public sector," in *Proceedings of the ATISR 2012: 2nd International Conference on Applied and Theoretical Information Systems Research (2nd. ATISR2012)*, 2012.
- [16] N. Musa, D. H. A. Ibrahim, N. A. Bolhassan, J. Abdullah, N. Kulathuramaiyer, and M. N. Khairuddin, "An IT governance framework for achieving the development of academic programme in higher institutions: A case of Universiti Malaysia Sarawak (UNIMAS)," in *Information and Communication Technology for The Muslim World (ICT4M), 2014 The 5th International Conference on*, 2014, pp. 1-6.
- [17] W. S. Wiyandri, S. J. Putra, and F. Fitroh, "Usulan model tata kelola teknologi informasi pada domain plan and organise dengan menggunakan framework cobit 4.1," *STUDIA INFORMATIKA: JURNAL SISTEM INFORMASI*, vol. 7, 2014.
- [18] P. Zhang, K. Zhao, and R. L. Kumar, "Impact of IT Governance and IT Capability on Firm Performance," *Information Systems Management*, vol. 33, pp. 357-373, 2016.
- [19] P. H. de Souza Bermejo and A. O. Tonelli, "Planning and implementing IT governance in Brazilian public organizations," in *System Sciences (HICSS), 2011 44th Hawaii International Conference on*, 2011, pp. 1-10.
- [20] P. H. de Souza Bermejo, A. O. Tonelli, M. J. de Brito, and J. L. Todesco, "Implementation of information technology (IT) governance through IT strategic planning," *African Journal of Business Management*, vol. 6, pp. 11179-11189, 2012.

- [21] T. Sethibe, J. Campbell, and C. McDonald, "IT governance in public and private sector organisations: examining the differences and defining future research directions," *ACIS 2007 Proceedings*, p. 118, 2007.
- [22] M. A. H. Altemimi and M. S. Zakaria, "Developing factors for effective IT governance mechanism," in *Software Engineering Conference (MySEC), 2015 9th Malaysian*, 2015, pp. 245-251.