

IT Governance Assessment at Presidential Secretariat using COBIT 5 Framework



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Abstract: Presidential Secretariat according to State Minister Regulation No. 3 of 2015 chapter IV on position, duties and functions that are under the Presidential Secretariat and are responsible to the State Secretariat and in carrying out their duties the Head of the Presidential Secretariat can receive direct assignments from the president. The Presidential Secretariat consists of the Press, Media and Information Bureau (BPMI) which is tasked with carrying out press and media activities, reporting and analyzing news, managing information, data, and documenting the activities of the president and / or wife / husband of the president, state guests, and other important activities . inside and outside the country, as well as the management of the presidential library. IT governance is needed so that the IT process at the Presidential Secretariat can have an important impact on achieving the organization's vision, mission and strategic objectives. The purpose of this study is to evaluate IT services at the Presidential Secretariat based on COBIT 5 by assessing the level of IT process capability at COBIT 5 and Gap Analysis to determine the priority of IT processes at COBIT 5 in improving IT services. The evaluation evaluation measured from the COBIT 5 framework refers to 7 COBIT 5 processes, namely EDM01, EDM04, APO02, APO04, APO06, BAI08, and DSS03. Furthermore, the COBIT 5 process chosen in writing this research was obtained through data collection methods, namely conducting interviews, distributing questionnaires and observing at the Presidential Secretariat. Data analysis was based on the COBIT 5 framework through a questionnaire taken from 10 respondents using the Rating Scale Formula to find out the Scale of Capacity for each Activity and Output in the selected COBIT 5 process. Then from the evaluation results, it is known that 7 processes are still at Level 1 (Performed) where the results are still below the expected Ability Level, which is Level 4 (Predictable). In order for the Gap Analysis obtained to be 3, the results are used to set recommendations for improvement based on the COBIT 5 Framework.

Keywords: Presidential Secretariat, IT Governance, COBIT 5 Framework, capability level

I. INTRODUCTION

Information technology governance is an integrated part of organizational management that includes leadership, structure and organizational processes that are optimal for information technology.

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Based on the Regulation of the Minister of State Secretariat of the Republic of Indonesia number 3 of 2015 article 131 of the Secretariat of the President of the Republic of Indonesia is under and is responsible to the Minister of State Secretary and headed by the Head of the Presidential Secretariat. The Presidential Secretariat has the task of providing technical and administrative support to the household, protocol, press and media of the President's head. The Presidential Secretariat

has several bureaus including the Press, Media and Information Bureau of the Presidential Secretariat. Bureau of Press, Media and Information (BPMI) of the Presidential Secretariat. Providing technical and administrative support to the household, protocol, press and media of the President's head. The development of information technology requires the existence of good information technology governance that guarantees efficiency and achievement of good quality for the Presidential Secretariat. IT governance is needed so that the IT process at the Presidential Secretariat can have an important impact on achieving the organization's vision, mission and strategic objectives. These objectives will be achieved if the IT plans and strategies are implemented in harmony with the strategies owned. The following is a list of IT problems and impacts occurring within the Presidential Secretariat:

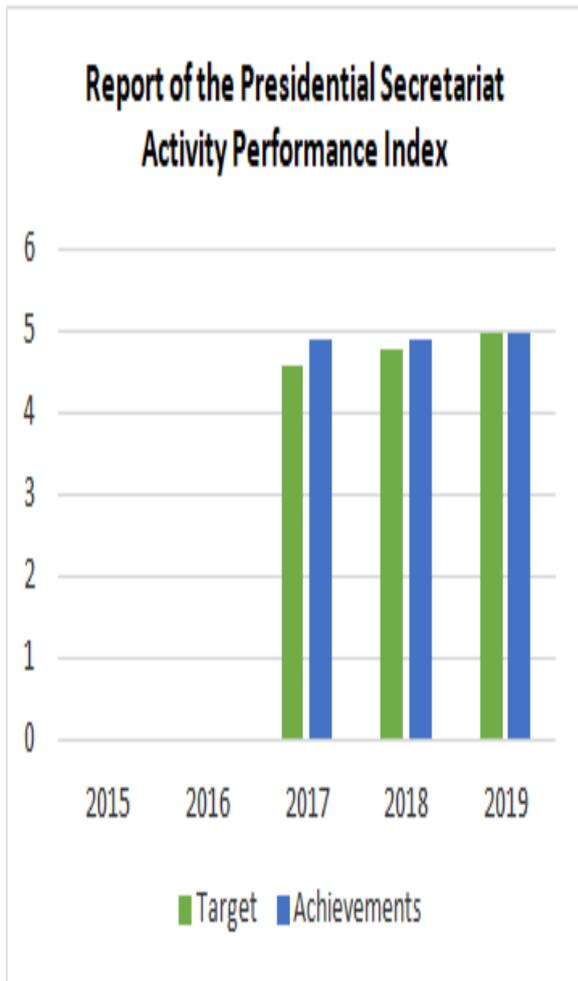
Table 1 List of Problems and Impacts that Occur at the Presidential Secretariat

No.	Problems	Impact
1.	Not to implement IT governance policies	The implementation of IT technology that is still experiencing operational obstacles in the environment of the Presidential Secretariat
2.	There is no IT Master Plan development that is in line with IT governance needs	IT management is still manual so that it impedes service operations
3.	Management and management of infrastructure is inadequate and not well managed	Effect on the quality of IT services at the Presidential Secretariat
4.	Development of applications that are not integrated where each bureau has applications developed by third parties and vendors and self-management	Development of applications that are not effective and efficient in terms of time and cost
5.	Human Resources that are not yet in line with their line of work	Influence service delivery at the Presidential Secretariat

Every year, the President's Secretariat officials make Activity Performance Indicators (IKK) for the next year. This IKK will be used by employees to determine the performance of each work unit in providing IT services.

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To be able to improve the performance of the BPMI of the Presidential Secretariat it is necessary to conduct a thorough and periodic evaluation of the services provided to employees. Control over employees weakens on established procedures, policies, processes, and changes made relating to services to the President. IT governance is expected to maximize performance at the BPMI Presidential Secretariat.



Graph 1.1. Achievement of the 2015-2019 Presidential Secretariat Targets (Source: 2019 Presidential Secretariat Performance Report)

Based on the procedures provided by the COBIT 5 framework, it will help the Presidential Secretariat manage IT with the vision, mission and objectives to be achieved, namely: "The realization of quality technical and administrative support for the household, protocol, press and media to the President". Measuring the level of capability is needed to determine the extent of managing IT processes in the Presidential Secretariat. COBIT (Control Objective for Information and related Technology) is a framework developed by the IT Governance Institute which is part of the Information Information System Audit and Control Association (ISACA).

II. LITERATUR REVIEW

In this study, the authors want to focus on the evaluation process using the COBIT 5 framework as a reference to the stages being worked on. COBIT 5 is a comprehensive framework that helps companies achieve IT governance goals and create optimal value from IT technology. On the other hand, COBIT 5 helps companies to maintain a balance

between realizing company goals with the level of risk and the use of resources. COBIT 5 allows that information technology can manage and manage company needs. COBIT 5 is used as a reference because it provides guidance on planning, scope, implementation, and follow-up of reviews using a road map based on a better approach to IT governance. This research is planned to run according to the following framework of thinking:

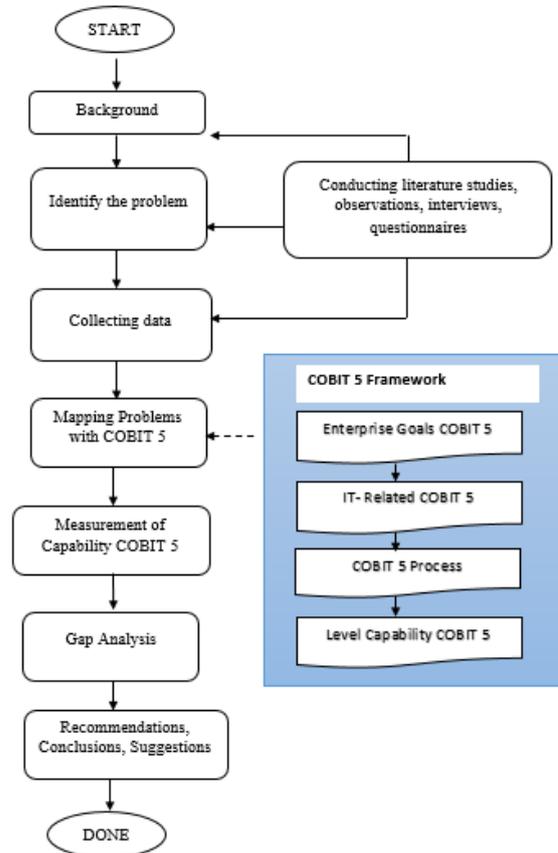


Figure 1 Framework

This study was initiated by the author looking at the constraints of the process of implementing services to agencies to determine the problems that will be used as background in this study. Next, the writer identifies the problem more fully which will generate questions related to the problems found in the Presidential Secretariat to be outlined in the research.

2.1 Method of data collection

Data collection methods in this study, the author will do 4 ways, namely by studying literature, questionnaires, interviews, and observations.

In this research the author will conduct interviews in the Press, Media and Information Section responsible for SI / IT in the Presidential Secretariat and then distribute questionnaires to respondents in each IT section who use and are directly involved in the use of information technology in the company.

Respondents fill out the questionnaire in accordance with the current situation of the Presidential Secretariat and then put a Check List on the evaluation criteria for each question. The assessment criteria listed are choices of Y and N.

If Y has a value of 1 and if N has a value of 0. There is a category stipulation of the results of the assessment at each level. As in the table:

Table 2 COBIT 5 Process Assessment Scale

N : 0% - 15%	P : 15% - 50%	L : 50% - 85%	F : 85% - 100%
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(Source: ISACA, 2012)

The explanation of the symbols in the table are:

N = Not Achieved

P = Partially Achieved

L = Largely Achieved (Meets Most)

F = Fully Achieved

The capability level of a process can be calculated if it is in the category L (fulfills most) and F (fulfills the whole). A process can be assessed at the next level if it meets the entire process with an F value (fulfills the whole).

Classifying the questionnaire, the next step gives the interval of values to the results obtained, as shown in the following table:

Table 3 Interval Value Capability

Capability Index	Capability Level	Status
0 – 0,49	0	Incomplete
0,50 – 1,49	1	Performed
1,50 – 2,49	2	Manged
2,50 – 3,49	3	Established
3,50 – 4,49	4	Predictable
4,50 – 5,00	5	Optimizing

(Source: ISACA, 2012)

The following is an overview of the RACI Chart to find out the statistical respondents involved.

Table 4 RACI Chart

No.	Respondents	Total	R	A	C	I
1.	Head of the Press, Media and Information Bureau	1		√		√
2.	Head of Data and Information	1	√	√		√
3.	Subdivision Head of Data and Information Management	1	√	√	√	√
4.	Subdivision Head of Applications and Networks	1	√	√	√	√
5.	Subdivision Head of Technology Support and Information	1	√	√	√	√
6.	Application and Network Staff	2			√	√
7.	Information and Technology Support Staff	1			√	√
8.	Computer Resources	2			√	√
Total Respondents		10				

(Source: Author)

Mapping out the existing problems with the COBIT 5 process. Begin by looking at the IT goals of the identified Presidential Secretariat. From the IT goals then mapped into COBIT Enterprise Goals with the aim of aligning the views between the goals of the company and the COBIT 5 framework. The next stage is mapping COBIT Enterprise Goals into COBIT IT-Related Goals to find out IT goals that are in line with the company's business goals. The results of the IT-Related Goals that have been identified are mapped in

the COBIT 5 process. The author compares the measurement results of the COBIT 5 process capability with the level of IT governance capability expected by the respondents. After obtaining the capability level and determining the target capability level to be achieved, this stage will analyze the gap in the capability level of the IT process. Then produce recommendations to companies in accordance with needs to improve the capabilities of IT processes.

2.2 Data Analysis Methods

Data analysis method used in this paper is to use a qualitative approach. Data collection to measure capability models is done by creating a questionnaire and distributed to all respondents containing questions that are used to measure the achievement of the process attributes at Level 1 based on the Process Capability Assessment Model (PAM) on COBIT 5.

According to Nugroho (2013), the results of the questionnaire can use a scale value, using the formula of the average value of the scale of governance / management practice and the output scale. Based on the results of the questionnaire obtained, then the capability level for each sub domain is calculated based on governance / management practice and the resulting output. If the respondent gives "Y" or "Yes" then it is worth 1 and "N" or "No" then it is 0. The scale value for governance / management practice and output uses a formula like the following:

a. Governance/Management Practice Scale

$$\frac{\sum(\text{Aktivitas Bernilai 1})}{\text{Total Aktivitas}} \times 100\% \dots (1)$$

b. Output Scale

$$\frac{\sum(\text{Output bernilai 1})}{\text{Total Output}} \times 100\% \dots (2)$$

According to ISACA (2012), to be able to reach a certain level, the achievement of the Capability Process must be rated Largely or Fully, and to be able to move to the next level all Attributes must be given a Fully value. If the Value of the Scale for each Attribute Process has reached 85% or more, then Capability Level 1 is fulfilled and goes to the process of collecting data for Level 2, and so on until Level 5. For assessments of Capability Level 2 to Level 5 is done by rating or observation of the Attribute Process carried out or not. The achievement of Capability Level 2 to Level 5 comes from the Observation assessment of the Process Attribute for each domain. Calculation of achievement value can use the following Rating Process Attribute Scale formula:

Skala Rating PA =

$$\frac{\sum(\text{Proses Atribut terlaksana})}{\text{Total Proses Atribut}} \times 100\%$$

After successfully calculating the Capability Level Achievement Rating Scale for each domain, the achievement data is summarized in the achievement table. A summary template for achieving capability levels can be seen in the table.



Table 5 Template of Capability level

Goal	(Description of the purpose of the process)					
Process (Process Name)	Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
	PA	PA	PA	PA	PA	PA
Rating based on percentage	1.1	2.1	2.2	3.1	3.2	4.1
	4.2	5.1	5.2			

Information:

PA = Performance Attribute

(Source: ISACA, 2012)

III. RESULT AND DISCUSSION

The initial stage of this research that focuses on the use of the COBIT 5 Enterprise Goals framework is the mapping between the vision and mission of the Presidential Secretariat with the COBIT 5 enterprise goals. The following is a general description of the mapping:

Table 6 the mapping between the vision and mission of the Presidential Secretariat with the COBIT 5 enterprise goals

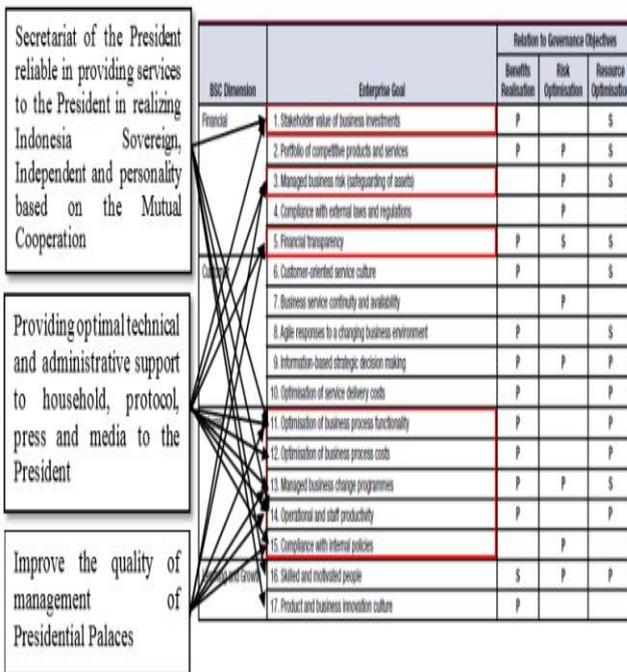


Image Mapping the vision and mission of the Presidential Secretariat with COBIT 5 enterprise goals.

The next step is mapping of Enterprise Goals which is the result of the previous stage to IT related. This stage aims to find the relationship between the goals of Enterprise Goals to IT related. The following is a general description of Enterprise Goals to IT related.

Table 7 the mapping between the goals of Enterprise Goals to IT related

(Source: Author)

The next stage that must be done is to map the IT-related Goals to become COBIT 5. ISACA through COBIT 5 has provided a mapping method as shown in the Figure below:

Table 8 the mapping the IT-related Goals to become COBIT 5

(Source: Author)

From the results of mapping IT-related Goals into COBIT 5 process, 7 (seven) focus points for measuring and evaluating capability levels are relevant to issues that occur at the Presidential Secretariat. The list of selected COBIT 5 processes is as follows:

Table 9 COBIT 5 processes

No.	COBIT Process 5		Issues
Evaluate, Direct and Monitor (EDM)			
1.	EDM01	Ensure Governance Framework Setting and Maintenance	Governance have not been applied in the Presidential Secretariat
2.	EDM04	Ensure Resource Optimization	Not optimal existing resources
Align, Plan and Organize (APO)			
3.	APO02	Manage Strategit	The absence of policies related to IT management that resulted in IT strategies are not aligned with agency strategy
4.	APO04	Management Innovation	Lack of employee awareness in motivating themselves to innovate more at work
5.	APO06	Management Budget and Cost	The budget and cost of IT is still limited
Build, Acquire and Implement (BAI)			
6.	BAI08	Manage Knowledge	Management of IT knowledge is not owned by the Secretariat of the President, has not been evenly distributed and still is individualized so many obstacles encountered
Deliver, Service and Support (DSS)			
7.	DSS03	Manage Problem	The problems that exist in the Presidential Secretariat are not centralized and still manual, so it is difficult to identify and diagnose IT problems that occur

(Source: Author)

In conducting the measurement process COBIT Process Capability Level 5, each process gradually checked whether the process has to meet the requirements that must be met at each level, ranging from Level 1 to Level 5. The following tables are a summary of the results Capability Level current achievement has been obtained:

Table 10 Capability Level Achievement Results Currently in the Selected COBIT 5 Process

No.	Domain	Level	Rating Scale	Scoring Scale
1.	EDM01	1	72%	L (Largely Achieved)
2.	EDM04	1	76%	L (Largely Achieved)
3.	APO02	1	72%	L (Largely Achieved)
4.	APO04	1	79%	L (Largely Achieved)
5.	APO06	1	84%	L (Largely Achieved)
6.	BAI08	1	75%	L (Largely Achieved)
7.	DSS03	1	75%	L (Largely Achieved)

(Source: Author)

Next to the Gap Analysis of the Capability Level 5 COBIT processes chosen and prioritizing improvement. The Gap Analysis Capability Level in 7 COBIT 5 processes selected at the Presidential Secretariat can be seen in the following table:

Table 10 Capability Level Achievement Results Currently in the Selected COBIT 5 Process

No.	COBIT 5 selected process	Gap Rate		Gap Analysis
		As-is	To-be	
1.	EDM01	1	4	3
2.	EDM04	1	4	3
3.	APO02	1	4	3
4.	APO04	1	4	3
5.	APO06	1	4	3
6.	BAI08	1	4	3
7.	DSS03	1	4	3

(Source: Author)

Gaps that occur in each process selected process. The following is the Radar Chart Image Analysis of the Gap that occurred at the Presidential Secretariat:

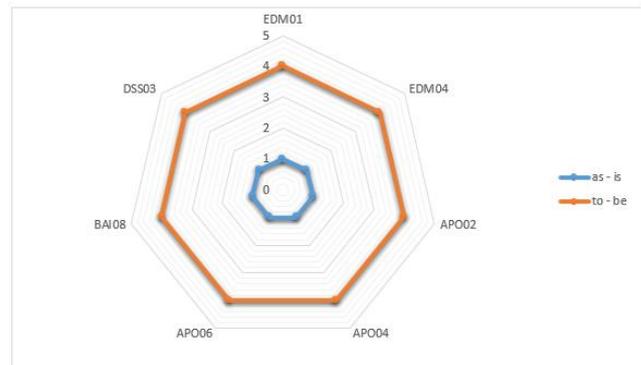


Figure 4.6 Radar Chart COBIT 5 Process Capability Gap

The results of the comparison of current achievements (as-is) and expected (to-be), it appears that 9 domains are still experiencing a gap. Where 7 domains are still at Capability Level 1, while expected to be at Capability Level 4, which means the gap of each domain is 3.

The final stage of this study is the recommendation. Recommendations are suggestions given by the author to the Presidential Secretariat BPMP as the need for improvement in IT governance at the Presidential Secretariat. The following are recommendations suggested by the authors for improvement in each of the 7 selected COBIT 5 Processes.

IV. CONCLUSION

Based on the results of the analysis and evaluation of IT governance at the Presidential Secretariat there are several conclusions, including: (1) The COBIT 5 selected process that is the focus of measurement and assessment of capability level at this writing is only 7 processes that are relevant to the problems at the Presidential Secretariat, namely : EDM01 Ensure Governance Framework Setting and Maintenance, Ensure Resource Optimization, APO02 Manage Strategies, APO04 Management Innovation, APO06 Management Budget and Cost (Manage Budget and Costs), BAI08 Manage Knowledge (Manage Knowledge), DSS03 Manage Problem (Manage Problems). (2) Based on the COBIT 5 framework of 10 respondents who are in accordance with, the current capability level for the 7 COBIT 5 processes is at capability level 1 (Performed). This result is still very far from BPMP's expectations of the Presidential Secretariat based on the results of the interview which is at capability level 4. So that the gap analysis shows that all 7 COBIT processes have a gap of 3 levels. (3) From the results of measurements from the 7 COBIT 5 processes, it shows that IT governance in the Presidential Secretariat is not available in applying the best practices steps that should be implemented in the application of IT governance that refers to the COBIT 5 framework. implemented well, this is evidenced by the still many activities and outputs of each COBIT 5 process have not been implemented. proses COBIT 5.

REFERENCES

1. Abimanyu, Z. P., & Nuraeni, R. (2015). Strategi Media Relations Untuk Membangun Good Governance (studi Kasus Di Biro Pers, Media Dan Informasi Sekretariat Presiden). eProceedings of Management, 2(3).
2. C.Laudon, Kenneth, & P. Laudon Jane. (2015), Management Information System : Managing The Digital Firm (14th Edition). USA. Prantice Hall.
3. Imache, R., Izza, S. & Ahmed-nacer, M., 2012. An Enterprice Information System Agility Assesment Model. Bab-Ezzouar. Algeria.
4. Ekanata, A., & Girsang, A. S. (2017). Assessment of capability level and IT governance improvement based on COBIT and ITIL framework at communication center ministry of foreign affairs. International Conference on ICT For Smart Society (ICISS).
5. Fitroh, Damanik, A., & Firmansyah, A. F. (2018). Strategies to Improve Human Resource Management using COBIT 5 For Data and Information Centre of Ministry of Agriculture of Indonesia of Republic. 6th International Conference on Cyber and IT Service Management (CITSM).
6. ISACA. 2012. A Business Framework for the Governance and Management of Enterprise IT. USA : ISACA.
7. ISACA. 2012. COBIT 5 : Enabling Process. USA : ISACA.
8. ISACA. 2012. COBIT 5 : Framework. USA : ISACA.
9. ISACA. 2012. COBIT 5 : Implementation. USA : ISACA.
10. Kumayas, Reynaldo Brian. 2010. Penilaian Manajemen Proyek Teknologi Informasi Dengan Menggunakan Kerangka Kerja COBIT pada PT. Super Wahana Tehno. Jakarta : Universitas Bina Nusantara.
11. Lanang, I. G., Raditya, A., Sinaga, B. L., & Wisnubhadra, I. (2015). Evaluasi Tata Kelola Sistem Informasi Akademik Berbasis COBIT 5 di Universitas Pendidikan Ganesha. Jurnal Buana Informatika, 6, 279–288.
12. Lunardi, G., Maçada, A., Becker, J., & VanGrembergen, W. (2016). Antecedents of IT governance effectiveness: An empirical examination in Brazilian firms. Journal of Information Systems, 31(1), 41–57.
13. Muhammad, R., & Matheus Edward, I. Y. (2018). Assessment of IT Governance of Bakti Internet Access Program Based on the COBIT5 Framework : Case Study: Balai Latihan Kerja Kendari. 12th International Conference on Telecommunication Systems, Services, and Applications (TSSA).
14. Sekretariat Presiden Republik Indonesia (2019). Tentang Setpres. September 2019. <https://setpres.setneg.go.id/tentang-sekretariat-presiden/>
15. Sekretariat Presiden Republik Indonesia (2019). Tentang BPML. September 2019. <https://setpres.setneg.go.id/tentang-bpml/>
16. Sitingjak, Josua Kristian. 2015. Penilaian Terhadap Proses IT Governance Menggunakan COBIT Versi 5 pada Domain BAI Untuk Pengembangan Aplikasi Studi Kasus IPOS di PT POS Indonesia. E-Proceeding of Engineering, Vol.2, No.2, pp.5334-5341
17. Ramlaoui, Said & Semma, Alami. 2014. Comparative Study of COBIT with Other IT Governance Frameworks. IJCSI International Journal of Computer Science Issues, Vol.11, No.1, pp.95-101.
18. Rianti, F.I.&Mulyana, D.I (2019). Implementasi Tata Kelola Teknologi Informasi Menggunakan Framework Cobit 5 Pada Direktorat Jenderal Bea Dan Cukai. [Electronic version]. Available: <http://jurnal.stikomcki.ac.id/index.php/cos/article/view/53> [2019, Sept 19]
19. Williams, B.K., Sawyer, & Stacey, C. (2010). Using Information Technology : A Pratical Introduction to Computers & Communications. (Nineth Edition). New York: McGraw Hill.
20. Yakub. (2012). Pengantar Sistem informasi. Yogyakarta: Graha Ilmu
21. Yolanda T., & Sérgio R., (2019). The Maturity and Efficiency of IT Governance Processes Based on Cobit 5: A Case of a Health Sector Organization in Portugal. 2019 14th Iberian Conference on Information Systems and Technologies (CISTI).