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ANALYSIS OF TECHNOLOGY GOVERNANCE INFORMATION ON ACADEMIC INFORMATION SYSTEMS (SIAKAD) USING THE COBIT 2019 FRAMEWORK

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ABSTRAK

Universitas Aisyah Pringsewu merupakan lembaga pendidikan yang berusaha mengikuti perkembangan teknologi informasi. Ada berbagai jurusan di universitas ini yang perlu meningkatkan sistem manajemen teknologi untuk memajukan institusinya. Namun, sistem manajemen teknologi yang digunakan saat ini belum mencapai tujuan yang diinginkan. Hal ini menyebabkan kurangnya prosedur untuk menggunakan dan memperbaiki teknologi, sistem operasi sering crash dan kehilangan data karena virus. Pada penelitian ini metode yang digunakan adalah metode Cobit 2019 dengan Domain Align, Plan and Organize (APO) dan Domain Deliver, Service and Support (DSS). Hasil menunjukkan bahwa maturitas DSS05 adalah 2,56, sedangkan nilai rata-rata terendah saat ini adalah APO07 yaitu 2,45. Dengan adanya hasil tersebut, tingkat kemampuan model pada tahap ini berhasil mengeksekusi proses TI dan mencapai tujuan proses TI yang diinginkan.

ABSTRACT

Aisyah Pringsewu University is an educational institution that tries to keep up with the development of information technology. There are various departments in this university that need to improve the technology management system to advance the institution. However, the technology management system used today has not achieved the desired goals. This leads to a lack of procedures for using and repairing technology, frequent operating system crashes and data loss due to viruses. In this study, the method used is the Cobit 2019 method with the Align, Plan and Organize (APO) Domain and the Deliver, Service and Support (DSS) Domain. The results show that the maturity of DSS05 is 2.56, while the lowest current average value is APO07, which is 2.45. With these results, the level of capability of the model at this stage successfully executes the IT process and achieves the desired IT process objectives.

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1 INTRODUCTION

University is a place for students to learn and develop skills according to their interests and talents, in order to have quality graduates. In the era of Information Technology, the use of technology is very important, one of which is in the University. Universities need to manage potential resources with information technology effectively and efficiently to face competition.

Improvements in effective information technology management will have a major impact on organizational operations, structures, and strategies and can contribute to efficiency, productivity, and competitiveness development. Therefore, enterprise business and risk management is required to cover not only technical or operational issues but also cover top executives to meet business needs such as IT governance. Achieving effective management of information technology and associated risks requires implementing controls over all information technology processes.

This research uses the COBIT 2019 framework which is a collection of IT governance best practice documents that can help auditors, management, and users bridge the gap between business risks, needs, control requirements, and technical issues.[1] In addition, COBIT 2019 has a proven ability to help UAP organize IT management according to standards and policies that meet optimal operational and business needs, especially on the UAP campus. Therefore, COBIT 2019 will be used to audit the operation of SIAKAD in the UAP environment.

2 RESEARCH METHODS

In collecting data for this system, using two types of data research methods as primary data and secondary data is explained as follows:

Primary Data

- Primary data is the primary or main data used in research. Data is obtained directly from a source such as respondents or research subjects through two techniques, namely:
- Interview, which is a two-way exchange of information to collect data from respondents and find problems openly through the opinions and opinions of respondents.
- Questionnaire, which is a data collection technique by providing a set of questions or written statements to respondents to answer.

Secondary data

- Secondary data is data that has been recorded in books or reports, or laboratory results. Here are some ways to get secondary data:
- Literature research, which is the activity of reviewing and reading library materials such as books, documents or similar research that has been carried out by others as well as reviewing topics related to current literature studies.

3 RESULTS AND ANALYSIS

Based on the results of interviews and analysis conducted to assess the maturity of information technology management in this period, we conducted an assessment for each activity based on the results of interviews with all stakeholders. After each activity gets a score, then all the activity scores are combined and averaged to get the current maturity in each region. The definition of perfection is carried out on each IT process, carried out at all levels, starting from level 0 or incomplete up to the fifth level or optimization level."[2]

Table 1 Measurement of the Current IT Process Capability Level

IT Process Controls	**Current IT Condition**	**Model Level**
	Average IT Process	***Capability***
Manage Security Services (DSS05)	2.56	*Performed*
Manage Human Resources (APO07)	2.45	*Performed*
Manage Operation (DSS01)	2.55	*Performed*
Total Value Level *Capability*	**2.52**	*Performed*

Table 2 Expected IT Process Capability Level Measurement Results

IT Process Control	**Current IT Condition**	**Model Level**
	Average IT Process	***Capability***
Manage Security Services (DSS05)	4.37	*Predictable*
Manage Human Resources (APO07)	4.39	*Predictable*
Manage Operation (DSS01)	4.36	*Predictable*
Total Value Level *Capability*	4.37	*Predictable*

Assessing and knowing the maturity level of IT Administration at Aisyah Pringsewu University is currently 1.52 with the actual capacity level.[3]

For Information Technology maturity expectations of 4.37 with a level of competence that can be predicted from the above results, this is equivalent to a gap analysis.[4] This analysis shows the gap between current maturity and expected maturity, presented in Table 3 below:

Table 3 Maturity Level Comparison

Domain Process	**Maturity Level**		
	Current	Expected	GAP
Manage Security Services (DSS05)	2.56	4.37	1.81
Manage Human Resources (APO07)	2.45	4.39	1.94
Manage Operation (DSS01)	2.55	4.36	1.81
Average			1.8525

The average deviation across all process areas studied is 1.85. Adjustments are required for each process area, because the value of 1.85 is the average for all process areas, the authors will make recommendations for each process studied so that targeted improvement recommendations can be made."[5]

As a result of the studies that have been carried out, the conclusions will be compared with the mature needs of each COBIT 2019 area.[6] Then the problems found will be analyzed and given recommendations recommended as follows:

1. DSS05 (Manage Security Services)
   a. Short-term Recommendation
      - Every computer used in the college needs to be protected from viruses.
      - The IT team needs to manage network connectivity in the college.
      - Each computer usage needs to have a privacy account according to the user.
      - IT-based systems need to be used for asset management in the college so that assets can be monitored.
   b. Long-term Recommendations
      - Important documents in the college need to be controlled and stored properly.
      - Infrastructure in the college needs to be monitored and coordinated intensively.

2. APO07(Manage Human Resources)
    a. Short-term Recommendations
        - Employee placement needs to be adjusted to the expertise of each employee.
        - The IT team needs to be recruited from universities.
        - Employees need to be given training to improve their competence
    b. Long-term Recommendations
        - Performance evaluation of employees and lecturers needs to be done at the end of each semester as a reference for their future development.
        - The college needs to use an integrated IT-based system for every service.

3. DSS01 (Manage Operation)
    a. Short-term Recommendations
    - Each work unit needs to establish standardized SOPs and be implemented properly and on time.
    - Every service in higher education needs to be IT-based.
    b. Long-term Recommendations
    - IT infrastructure needs to be monitored periodically (consulting services, education, and training).
    - The college needs to manage environmental factors and human factors well (job description of each work unit, safety guidelines, temperature, noise, and cleanliness).
    - Every facility in the college needs to be controlled periodically.

4 CONCLUSIONS

The results of this study conclude as follows:

1. The results showed that the current condition of higher education has the highest average value in the DSS05 region of 2.56 and the lowest average value in the APO07 domain of 2.45. With these results, it shows the competency level of the higher education model, where the college has implemented the IT process and successfully achieved the objectives of the IT process.
2. The results also show that the expected state of higher education has the highest average score in the DSS01 domain of 4.36 and the lowest average score in the APO07 domain of 4.39. With these results, the expected competency level model in higher education can be predicted, where higher education is expected to be able to perform computing procedures with certain limitations, such as time constraints.

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