

ANALYSIS OF INTERNAL CONTROL AND READINESS OF INFORMATION TECHNOLOGY ADAPTATION IN COOPERATIVES USING COBIT 5 FRAMEWORK

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ABSTRACT

Every organization must have a strong ambition to develop the application of information technology (IT) since IT application considerably assists the business processes of a company. Obviously, prior to undertaking the development of IT implementation, it is required to evaluate the company's preparedness and maturity in implementing IT-based infrastructure, human resource management, and processes. Using the Control Objectives for Information and Related Technology (COBIT 5) framework to evaluate the maturity level of IT governance. The results indicated that the Maturity level value of the APO Domain from eight questions was 3.18, which is at level 3 (Defined), namely that in order to optimize the use of IT, the cooperative can make efforts to increase it, such as developing the quality of human resources in the company, building an organizational structure for IT management, procuring IT equipment based on company needs, and developing the use of IT on a regular basis. Administrative management that still relies on the Excel application must be enhanced by introducing a computerized system that makes data management simpler for cooperatives.

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1. INTRODUCTION

Information technology (IT) is currently employed extensively by businesses to improve the efficiency and effectiveness of their business processes. To attain this objective, information technology must be controlled systematically [1], [2]. An audit of a company's information technology governance can aid in the analysis of the company's present IT usage [3]. The company's IT infrastructure is still incapable of managing all data in an integrated manner. Due to the lack of a connection between the data management process and IT, management desires to expand the usage of IT. The development is conducted with the intention of integrating data management. In practice, the use of IT in businesses is currently incapable of integrating the management of all data. Due to the lack of a connection between the data management process and IT, management desires to expand the usage of IT. This invention was made in the hopes that the management of one data can be linked with other data [4]. Before implementing IT development, cooperatives encountered difficulties since they did not know their level of maturity or readiness for implementing IT development. Maturity is viewed in terms of finances, company resources, and internal operations. The resources in question are the human, software, and hardware components that the cooperative must build. In addition, cooperatives are still unaware of the application type necessary for each mandatory field.

One of these is the Asih cooperative, which is still unable to maximize the company's data management performance. This is due to the fact that the application of information technology in these businesses is limited to the use of Excel for creating financial reports and managing savings and loan data. In the sales department, all existing processes continue to utilize paper to manage sales data and items data. Currently, the use of existing IT in the financial industry is unable to maximize firm performance, particularly in the management of financial data. Due to the fact that the application of IT in the financial

sector[5] is still confined to the use of Excel to create financial reports, administration is in charge of the financial sector[6], [7].

The cooperative's goal is to upgrade its information technology infrastructure to better manage financial data. Along with advancing the strategic goals, vision, and mission of the company, the development of IT, including hardware and software, is a top priority. However, before developing the IT application, the organization ran into issues including the lack of a standard used as a reference in carrying out development and the limits of limited innovation in updating tools or technology. In addition, management in the financial sector has no idea of the company's maturity level or its potential to build IT to support management[8].

Information technology development, IT governance audits are necessary to evaluate the financial sector's IT implementation maturity level. IT governance audits can determine the cooperative's degree of IT implementation maturity and help pinpoint areas for improvement before any IT development is begun. The COBIT framework is one of the standards that can be used during an audit. The purpose of this study is to apply an IT Audit that seeks to evaluate and assess risks to maintain valuable assets and establish methods to minimize these risks[9], [10], with the ultimate goal of providing recommendations regarding IT improvements that can be used as a reference for the purpose of handling technical problems through control of each IT process. The IT governance audit should yield suggestions for improving IT implementation.

2. METHOD

2.1. COBIT5 Framework

COBIT 5 enables information technology to perform comprehensive governance and management for the entire enterprise, controlling the business from end to end and being accountable for all information technology functions[11]. In addition, COBIT 5 provides internal and external stakeholders with facilities. COBIT 5 is global and useful for organizations of all sizes, whether they are commercial, non-profit, or public[12]. COBIT 5 consists of five principles:



Figure 1. Principle of COBIT 5

COBIT 5 based on the five key principles in Figure 1 for IT governance and management [13]:

- Principle 1: Finding stakeholder needs
- Principle 2: Cover end to end enterprise
- Principle 3: Apply a single, integrated framework
- Principle 4: Enable a holistic approach
- Principle 5: Separating governance from management (source)

2.2. Research Stages

Research is conducted in stages, as depicted in Figure 2.

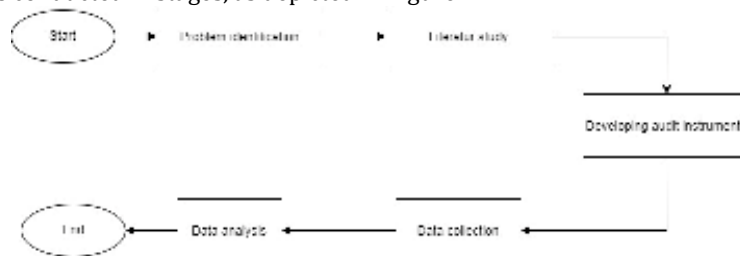


Figure 2. Research Stage

In the early stages of the research, a literature evaluation pertaining to IT audits inside cooperatives was conducted. The subsequent phase will consist of a case study or problem identification in order to identify difficulties within the organization. By drafting questions based on the difficulties, audit instruments and domain determination are developed. The subsequent phase is data collecting. The data gathering procedure will be conducted in three ways: through distributing questionnaires, conducting interviews, and documenting the data collection process. If the data gathering step is complete, the Gap analysis stage for current and predicted maturity will follow. The findings of data collection on respondents in accordance with the chosen COBIT 5 audit domains will be used to create graphs of each audit domain in the future. In order to determine the level of maturity of the research object, maturity and expected maturity[14] calculations will be performed in the analysis phase so that recommendations for cooperatives can be derived from the results of the IT audit.

3. RESULT AND DISCUSSION

3.1 GAP Analysis

Following are the results of the analysis of the current maturity gap and the expected maturity domain of APO, the results of the Gap Analysis calculations can be seen in Table 1 below:

Table 1. GAP Analysis Calculation

No	Current Maturity	Expected Maturity	GAP Analysis
1	2,75	5,00	2,25
2	3,75	5,00	1,25
4	3,25	5,00	1,75
6	5,00	5,00	0
7	3,75	5,00	1,25
8	2,25	5,00	2,75
9	2,25	5,00	2,75
10	2,50	5,00	2,50
Average	3,18	5,00	

The results of measuring the maturity level established by management for the APO domain are at the 5.00 (Optimized) level for each of its subbands, as shown in Table 1. Of the eight questions that characterize the APO Domain at the Asih Cooperative, the APO06 Domain question contains the loan deposit field with the highest level of 5.00. While the lowest Current Maturity level is 2.25, which can be found in Domain questions APO08 and APO09, management in this subchapter is a great distance from management's desires. The average of the sub-chapters of the eight questions above indicates that the APO Domain is at level 3.18, which is at the Defined level, indicating that Koperasi Asih's procedures, particularly in the sphere of savings and loans, must be improved. To learn more about the weaknesses of the Excel application in data management business operations, additional evaluation is required.

Table 2. Maturity and Expected Maturity GAP Analysis

Domain	Process	Current Maturity	Expected Maturity	GAP	Adjustment and Repaired Status
APO01	Manage the IT Framework for Management	2,75	5	5,0-2,75= 2,25	Repeatable
APO02	Managing IT Strategy Aligned with Business	3,25	5	5,0-3,25= 1,75	Defined
APO04	Evaluating IT Innovation	3,75	5	5,0-3,75= 1,75	Defined
APO06	Managing incoming and outgoing funds costs	5	5	5,0-5,0= 0	Optimized
APO07	Managing Human Resources	3,75	5	5,0-3,75= 1,75	Defined
APO08	Understanding the Relationship	2,25	5	5,0-2,25= 2,75	Repeatable

	between IT and Business				
AP009	Aligning IT Services Related to Business Needs	2,25	5	$5,0-2,25= 2,75$	Repeatable
AP010	Manage System Roles	2,50	5	$5,0-2,50= 2,50$	Repeatable

In Figure 1, we can see a visual representation of the aggregate data from the Gap Analysis, Current Maturity, and Expected Maturity.

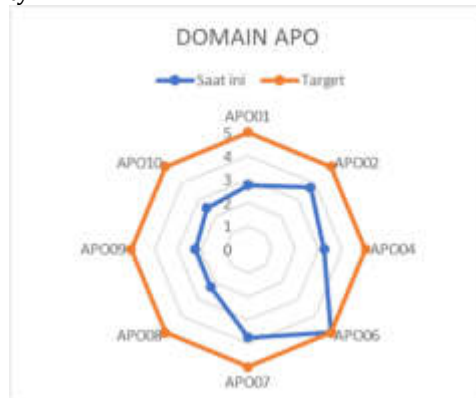


Figure 3. Graphic Display of Current and Target Maturity Level Domain APO

3.2 Improvement Recommendations

1. Subdomain APO01 – Manage the IT Framework for Management

The Expected Maturity for this Domain is set at a level of 5.00, however the Current Maturity acquired from data collection is 2.75. So that the Gap Analysis determined that the lack of value was equivalent to an expected maturity of 2.25 years. Recommendations for enhancements in this domain must establish an organizational structure for IT-savvy employees, allowing them to be assigned the role of IT controller, so that if a problem arises in the system[15], it can be addressed immediately without having to wait for the system designer to arrive. System designers must also devise a long-term plan to replace the use of management with the Excel application.

2. Subdomain APO02 – Managing IT Strategy Aligned With Business

The value of Expected Maturity in the APO domain is 5. The value derived from the Current Maturity interview results is 3.75. The conclusion of the Gap Analysis is a difference of 1.25, which represents a lack of cooperative party systems corresponding to Expected Maturity. Recommendations for enhancements to this domain include the addition of hardware such as computers and printers to facilitate the execution of cooperative transactions.

3. Subdomain APO04 – Evaluating IT Innovation

The expected Maturity value for this domain is 5. In addition, the value acquired from data collecting is 3.25. So that the resulting Gap Analysis results are 1.75, in order for the cooperative to reach its desired goal, the value must be 1.75. Recommendations for enhancements to this domain generate an evaluation timetable so that system designers better comprehend user preferences. And system developers can create a system that is tailored to the needs of the user, such as a system that automatically processes data supplied by the user during calculations so that the user no longer needs a calculator.

4. Subdomain APO06 – Managing incoming and outgoing funds costs

The level of Expected Maturity assigned to this domain is 5. When data collection was conducted, the degree of Current Maturity measured was 5. As a result, the Gap Analysis yields a result of 0 because the data collected correspond to the expected values. As demonstrated by the results of the Gap Analysis, the cooperative's present accomplishments are outstanding. For the handling of finances by the

cooperative, it is exceptional. No recommendations for improvement can be made because the actual value matches the predicted value.

5. Subdomain APO07 – Managing Human Resources

The Expected Maturity level assigned to the APO07 domain is 5. In the meantime, the value gained from Current maturity is 3.75. So that the findings of the Gap Analysis yield a value of 1.25. Therefore, there are several system flaws that must be addressed before the cooperative's transactions can operate efficiently. Recommendations for human resource enhancements necessitate training so that cooperative staff are able to run the system effectively.

6. Subdomain APO08 – Understanding the Relationship between IT and Business

The level of Expected Maturity assigned to the expected domain in this domain is 5. The result of the calculation for Current maturity is 2.25. Thus, the findings of the gap analysis based on the obtained data are 2.75. Therefore, the cooperative must be capable of enhancing and developing a computerized system in order to reach the desired objective. Recommendations for system enhancements given in this domain must be implemented so that the system functions properly and is user-friendly. Therefore, we require a system that is straightforward and capable of managing transaction data.

7. Subdomain APO09 – Aligning IT Services Related to Business Needs

The value of Expected Maturity requested by management is 5. Currently, the result derived from the Current Maturity computation is 2.25. So that the difference or Gap Analysis result for this domain is 2.75. Recommendations for enhancements that can be made to this area include the creation of a service user manual that describes the functionalities of the computerized system's present features and the methods for utilizing the information system[16].

8. Subdomain APO010 – Mengelola Peranan Sistem

The level of Expected Maturity expected from this domain is 5. Currently, the value derived from the Current Maturity level is 2.50. Therefore, the results of the Gap Analysis are 2.50. The cooperative must make modifications to the system so that it can achieve the anticipated value. Recommendations are made to replace the Excel program with an information system in order to offer system management features and facilitate the data management process for cooperative employees.

4. CONCLUSION

This indicates that the maturity level of information technology governance in Asih Cooperatives as a whole is at level 3 (Designed) with an average overall index score of 3.18, while the desired aim is level 5. (Optimized). To optimize the use of IT, businesses can work to improve the quality of their human resources, establish an IT management organizational structure, acquire IT equipment based on business requirements, and develop the use of IT on a regular basis. Administrative management that still relies on the Excel application must be enhanced by introducing a computerized system that makes data management simpler for cooperatives.

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