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Evaluation of IT Governance at Credit Union XYZ Financial Institutions Using COBIT 5 Framework

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ABSTRACT

Since 2002, Credit Union XYZ has been utilizing information technology in its lending operations. However, the utilization of IT governance has not been optimal due to various weaknesses, obstacles, and issues such as server problems, downtime for maintenance, system change requests, human resources, and recurring IT-related problems. This research aims to assess the current IT governance capabilities at Credit Union XYZ. The method used is the COBIT 5 standard with a focus on the APO and DSS domains tailored to the existing issues. Data were collected through questionnaires distributed to the IT team and relevant stakeholders. The selected COBIT 5 processes include APO06 (Manage budget and costs), APO07 (Manage human resources), DSS01 (Manage operations), DSS02 (Manage service requests and incidents), and DSS03 (Manage problems). The evaluation reveals a 1-level gap in IT governance capabilities, with the current level at level 2 in Credit Union XYZ, while the target is level 3 in the future. The researcher's recommendation to Credit Union XYZ is to align IT processes with the standards and regulations established by COBIT 5.

Introduction

Credit Union XYZ is one of the growing credit cooperatives at present. Established on March 25, 1993, with an initial membership of 26 people, it has experienced rapid development until now (Martin & Roychowdhury, 2015). As of December 2023, it has had 73 branch offices serving 211,929 members. From 1993 to 2001, Credit Union XYZ provided services and recorded transactions manually. Subsequently, computerized systems were adopted from 2002 onwards. Despite the long-standing use of information technology, its utilization is still perceived as suboptimal, prompting the need for further evaluation due to various ongoing issues related to its implementation and governance at Credit Union XYZ. These issues include non-standard server backup facilities, server monitoring policy, prolonged downtime during IT asset problems, policies regarding system requests, changes, and updates, human resources in the field of information

technology, areas with poor signal coverage (blank spots), and recurring transaction recording system issues at Credit Union XYZ (Rosenthal et al., 2010).

With the advancement of technology, the role of information technology becomes increasingly crucial in supporting daily activities. (Jamesh & Prakash, 2018). Therefore, efficient IT management is essential to ensure the security, reliability, and maximum performance of Credit Union information systems. Rapid technological advancements demand that Credit Union XYZ continuously strive to optimally utilize information technology to remain relevant and competitive in the current era.

According to Nugrahanti, this competition drives every company to manage its resources as optimally as possible to produce high-quality products and services that are always available when needed. (Nugrahanti, 2015). IT Governance is a series of processes to ensure the effective and efficient use of information technology to achieve the organization's goals.

Credit Union XYZ, as a financial institution providing financial services to its members, needs to continuously evaluate and improve its IT governance. This research will explain the process of evaluating IT governance at Credit Union XYZ using COBIT 5. COBIT 5 provides a structured approach to managing and controlling IT, emphasizing critical aspects such as compliance, security, and business value (Stockdale & Standing, 2006).

DOUGHT, 2015 also states that IT is an important part of the company and consists of leadership and ensuring the organization's IT supports and expands its strategies and goals (Doughty & Grieco, 2005). IT Governance will be the answer to ensuring that investments in IT are aimed at providing maximum and beneficial results for the institution. (Adikara, 2013). This research is expected to provide an in-depth understanding of the maturity level of IT governance at Credit Union XYZ, identify areas for possible improvement, and guide to enhance the efficiency and effectiveness of IT management at Credit Union XYZ.

According to the Republic of Indonesia Law Number 10 of 1998 concerning banking, "A bank is a business entity that collects funds from the public in the form of deposits and channels them to the public in the form of loans and other forms to improve the standard of living of the people" (Indonesia, 1998).

Based on the Financial Services Authority Regulation Number 11/POJK.03/2022 regarding the implementation of information technology by banks/financial institutions, it is stated that the application of good IT governance applies to all units and functions of banks in managing IT, and IT users. (Luthfah, 2024). In implementing good IT governance, banks/financial institutions carry out at least the following activities:

1. Evaluation of strategic choices, direction of IT implementation strategies, and monitoring of strategy achievement.
2. Alignment, planning, and organization of all units, strategies, and activities that support IT implementation.
3. Definition, acquisition, and implementation of IT solutions and their integration into Bank business processes.

4. Provision of operational IT service support to stakeholders; and
5. Monitoring performance and compliance of IT implementation with internal performance targets, internal controls, and regulatory provisions.

According to the Republic of Indonesia Law Number 25 of 1992 concerning Cooperatives, "A cooperative is a business entity consisting of individuals or legal entities Cooperatives, based on cooperative principles as well as a people's economic movement based on family principles" (Susetyo et al., 2024).

According to Government Regulation Number 9 of 1995 concerning the Implementation of Savings and Loan Business Activities by Cooperatives, "Savings and loan business activities are activities carried out to collect funds and channel them through savings and loan business activities from and for the members of the respective cooperatives, prospective members of the respective cooperatives, other cooperatives, and their members" (Sembiring, 2006).

Based on the Regulation of the Minister of Cooperatives and Small and Medium Enterprises of the Republic of Indonesia Number 11 of 2017 concerning electronic service networks, "KSPPS and USPPS Cooperatives can develop electronic service networks for savings and loan and Sharia financing businesses by utilizing information technology" (KOPERASI & DAN, 2018).

Research Methods

COBIT 5 Framework

This research examines the condition of Information Technology (IT) governance implemented by Credit Union XYZ using a capability model adapted from the COBIT 5 framework. (Syuhada, 2021). The main objective is to identify existing IT processes with a particular focus on the APO and DSS domains.

Research Flowchart

In this research, the researcher collected data using a qualitative method based on a case study approach. The research flowchart, as shown in Figure 2 :

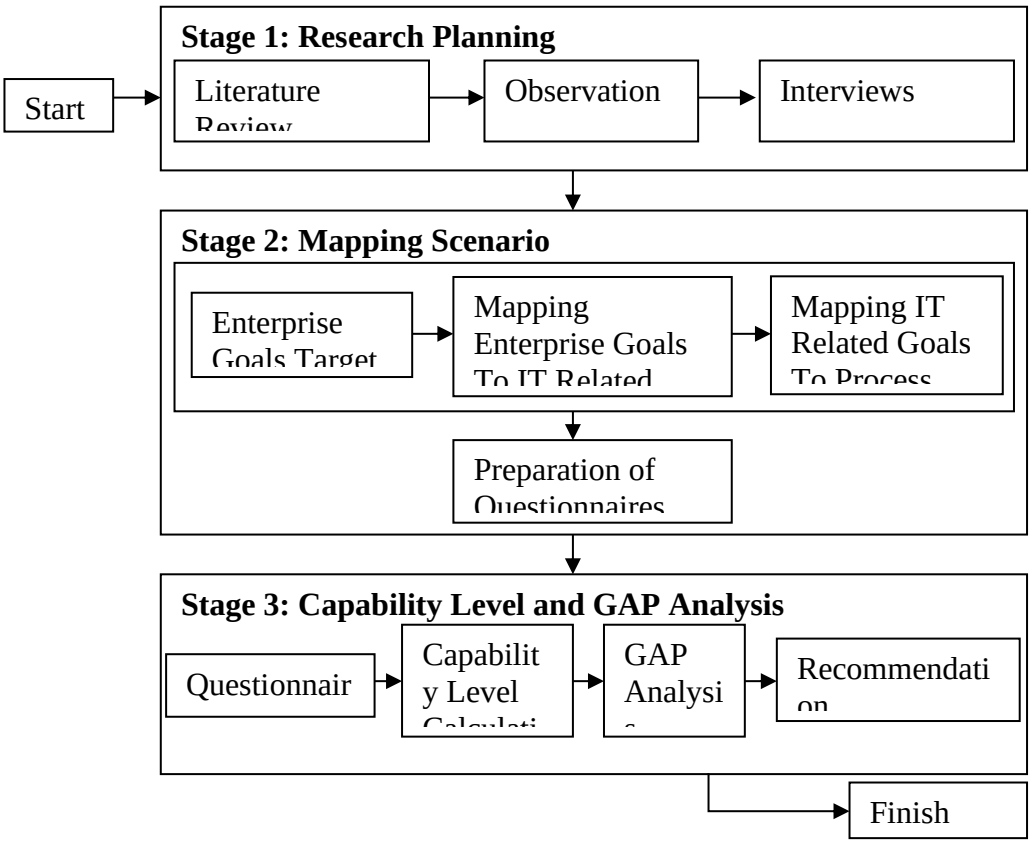


Figure 2. Research Flowchart

Based on Figure 2 above, here are the explanations for each stage of the research framework:

1. Research Planning

This stage begins with collecting data and information regarding the IT governance conditions at Credit Union XYZ through the use of primary data (observations and in-depth interviews with selected informants) as well as the use of secondary data (literature reviews and document studies) on the research object. This is done to identify the domain processes in COBIT 5 that are selected according to the scope of the research needs.

2. Mapping Scenario

In this stage, mapping is carried out to align the strategic targets of Credit Union XYZ with the goals of COBIT 5 to identify the strategic target needs. This phase aims to obtain the processes that will be used as a reference for designing evaluation questionnaires.

3. Capability Levels and GAP Analysis

In this stage, what will be done is to calculate the level of capability and perform gap analysis by compiling and elaborating evaluation findings for each process in

domains APO06, APO07, DSS01, DSS02, and DSS03. The Process Assessment Model (PAM) is a process assessment model within the COBIT 5 framework that applies a new approach based on the International Organization for Standardization (ISO)/International Electrotechnical Commission (IEC) 15504 (Almeida et al., 2018). There are 6 levels of capability that each process can achieve, namely:

1. Level 0: Incomplete

   At this level, the process is either not implemented or fails to achieve its objectives. There is little to no achievement of the process.

2. Level 1: Performed

At this level, the process exists and achieves its process objectives.

3. Level 2: Manage

   At this level, the processes have been executed and implemented in a more organized manner and establish, control, and maintain the resulting products effectively.

4. Level 3: Established

   At this level, IT implementation has utilized specific processes that have been agreed upon and achieved outputs as expected.

5. Level 4: Predictable

   At this level, processes have been executed within defined boundaries to achieve process outputs as expected.

6. Level 5: Optimizing

   At this level, there is continuous improvement of processes to ensure that current and future business objectives can be met.

After the capability level assessment stage is completed, the next stage is to conduct a gap analysis. This gap analysis is used to compare the current capability levels obtained from the evaluation with the expected capability levels. GAP analysis is applied to each selected domain process.

Results and Discussion

Enterprise Goals Target

In determining the company's objectives, reference is made to the COBIT 5 goal cascade, which includes 17 overarching company goals grouped according to the balanced scorecard dimensions. (Syuhada, 2021). To establish the company's objectives, COBIT's company goals are identified and then aligned with the objectives of Credit Union XYZ. (Deng et al., 2000). This process yields the mapping results of Credit Union XYZ's objectives, as depicted in Figure 3.

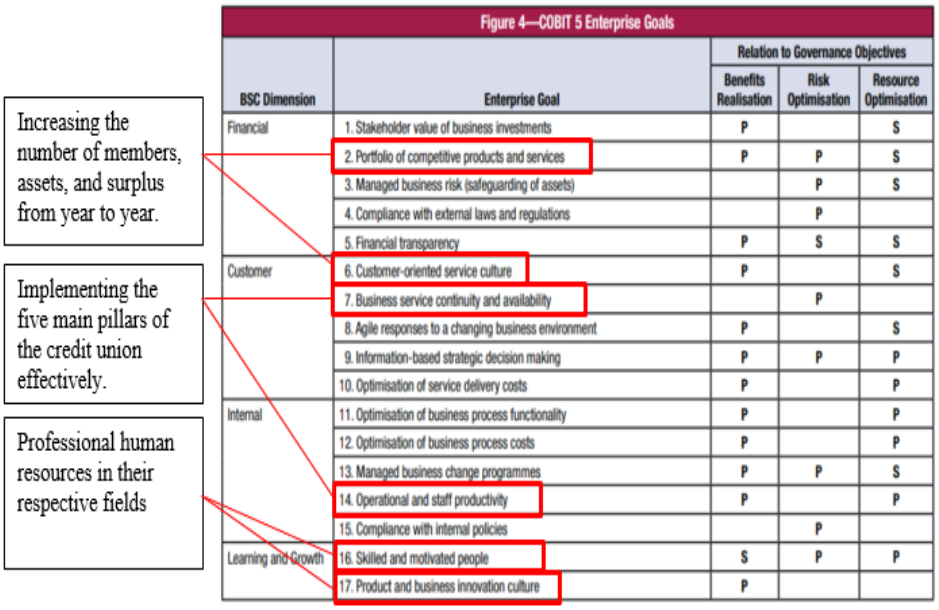


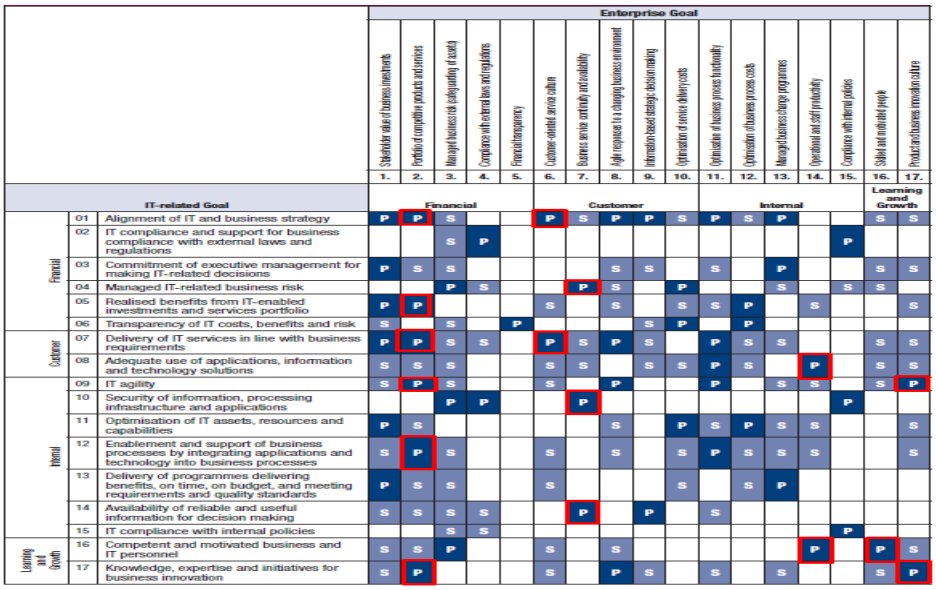
Figure 4—COBIT 5 Enterprise Goals

BSC Dimension	Enterprise Goal	Relation to Governance Objectives		
		Benefits Realisation	Risk Optimisation	Resource Optimisation
Financial	1. Stakeholder value of business investments	P		S
	2. Portfolio of competitive products and services	P	P	S
	3. Managed business risk (safeguarding of assets)		P	S
	4. Compliance with external laws and regulations		P	
	5. Financial transparency	P	S	S
Customer	6. Customer-oriented service culture	P		S
	7. Business service continuity and availability		P	
	8. Agile responses to a changing business environment	P		S
	9. Information-based strategic decision making	P	P	P
	10. Optimisation of service delivery costs	P		P
Internal	11. Optimisation of business process functionality	P		P
	12. Optimisation of business process costs	P		P
	13. Managed business change programmes	P	P	S
	14. Operational and staff productivity	P		P
	15. Compliance with internal policies		P	
Learning and Growth	16. Skilled and motivated people	S	P	P
	17. Product and business innovation culture	P		

Figure 3 Mapping results of the objectives of Credit Union XYZ

Mapping Enterprise Goals To IT-Related Goals

The mapping illustrates how each objective related to IT is supported by processes associated with COBIT 5 (Syuhada, 2021). Figure 4 shows the mapping results of company objectives for IT-related targets, where P stands for Primary, indicating a significant relationship where IT-related objectives are the main support for company objectives. Meanwhile, S stands for Secondary, indicating a strong but less critical relationship where IT-related objectives are secondary support for company objectives. Determining whether the relationship is P or S refers to COBIT 5 processes (Syuhada, 2021).



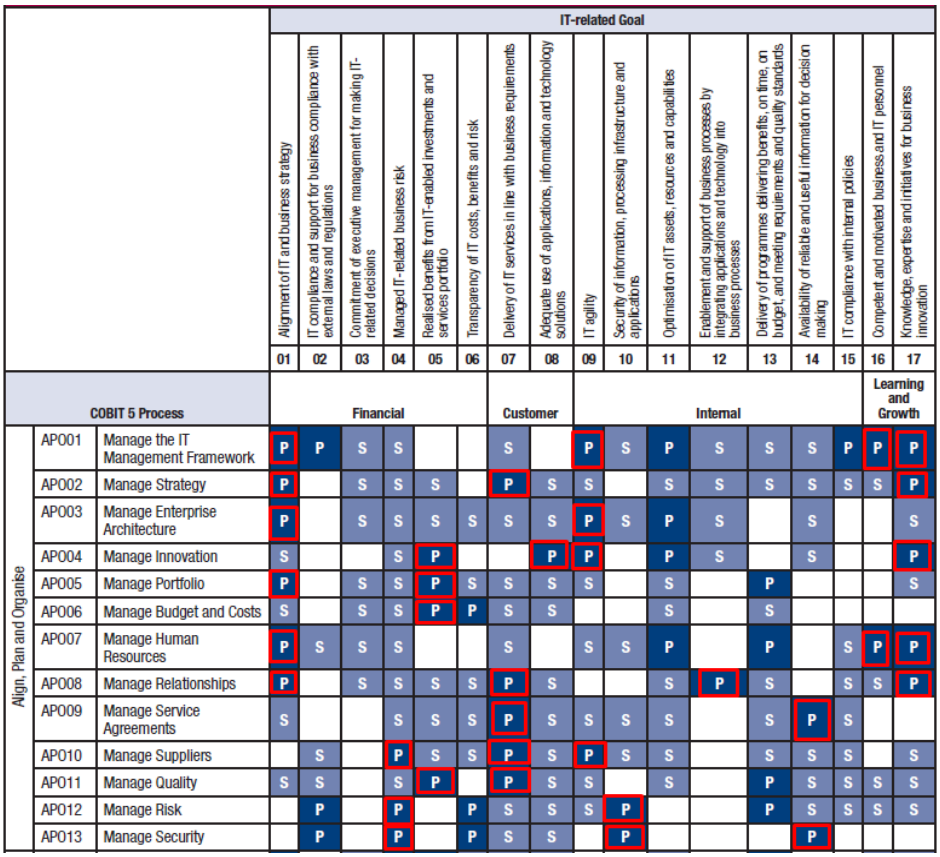
Enterprise Goal

		IT-related Goal	1. Stakeholder value of business investments	2. Portfolio of competitive products and services	3. Managed business risk (safeguarding of assets)	4. Compliance with external laws and regulations	5. Financial transparency	6. Customer-oriented service culture	7. Business service continuity and availability	8. Agile responses to a changing business environment	9. Information-based strategic decision making	10. Optimisation of service delivery costs	11. Optimisation of business process functionality	12. Optimisation of business process costs	13. Managed business change programmes	14. Operational and staff productivity	15. Compliance with internal policies	16. Skilled and motivated people	17. Product and business innovation culture
			Financial					Customer					Internal						Learning and Growth	
Financial	01	Alignment of IT and business strategy	P	P	S			P	S	P	P	S	P	S	P			S	S	
	02	IT compliance and support for business compliance with external laws and regulations			S	P											P			
	03	Commitment of executive management for making IT-related decisions	P	S	S					S	S		S		P			S	S	
	04	Managed IT-related business risk			P	S			P	S		P			S		S	S		
	05	Realised benefits from IT-enabled investments and services portfolio	P	P				S		S		S	S	P		S				S
	06	Transparency of IT costs, benefits and risk	S		S		P				S	P		P						
Customer	07	Delivery of IT services in line with business requirements	P	P	S	S		P	S	P	S		P	S	S			S	S	
	08	Adequate use of applications, information and technology solutions	S	S	S			S	S		S	S	P	S		P		S	S	
Internal	09	IT agility	S	P	S			S		P			P		S	S		S		P
	10	Security of information, processing infrastructure and applications			P	P			P								P			
	11	Optimisation of IT assets, resources and capabilities	P	S						S		P	S	P	S	S				S
	12	Enablement and support of business processes by integrating applications and technology into business processes	S	P	S			S		S		S	P	S	S	S				S
	13	Delivery of programmes delivering benefits, on time, on budget, and meeting requirements and quality standards	P	S	S			S				S		S	P					
	14	Availability of reliable and useful information for decision making	S	S	S	S			P		P		S							
	15	IT compliance with internal policies			S	S											P			
Learning and Growth	16	Competent and motivated business and IT personnel	S	S	P			S		S						P		P		S
	17	Knowledge, expertise and initiatives for business innovation	S	P				S		P	S		S		S			S		P

Figure 4. Mapping result Enterprise Goals to IT-Related goals

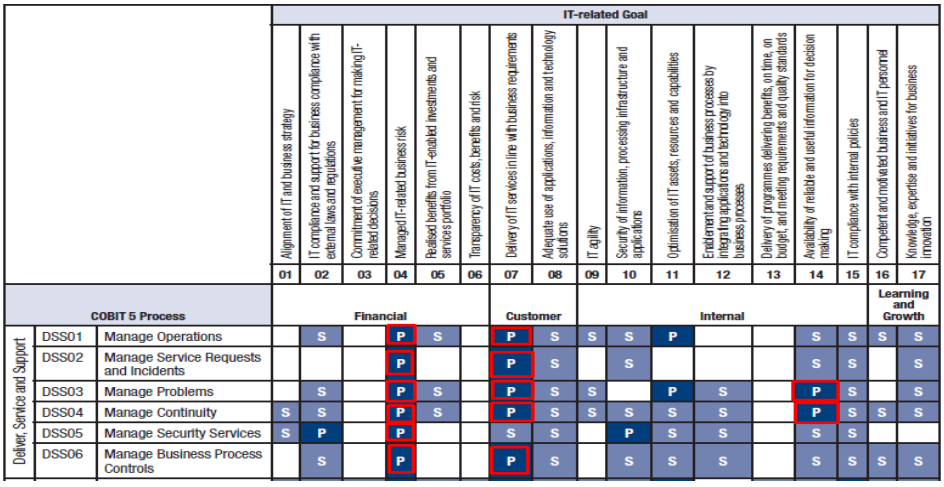
Mapping IT-Related Goals To Process

Based on the mapping results previously conducted, 5 domain processes have been identified with a primary scale where IT-related objectives are the main support for company objectives. These 5 domain processes are APO06, APO07, DSS01, DSS02, and DSS03 as shown in Figure 5 and Figure 6. When creating the questionnaire, reference is made to the COBIT 5 processes, specifically PAM from ISACA (Almeida et al., 2018).



			IT-related Goal																
			Alignment of IT and business strategy	IT compliance and support for business compliance with external laws and regulations	Commitment of executive management for making IT-related decisions	Managed IT-related business risk	Realised benefits from IT-enabled investments and services portfolio	Transparency of IT costs, benefits and risk	Delivery of IT services in line with business requirements	Adequate use of applications, information and technology solutions	IT agility	Security of information, processing infrastructure and applications	Optimisation of IT assets, resources and capabilities	Enablement and support of business processes by integrating applications and technology into business processes	Delivery of programmes delivering benefits, on time, on budget, and meeting requirements and quality standards	Availability of reliable and useful information for decision making	IT compliance with internal policies	Competent and motivated business and IT personnel	Knowledge, expertise and initiatives for business innovation
			01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17
	COBIT 5 Process		Financial						Customer		Internal							Learning and Growth	
Align, Plan and Organise	APO01	Manage the IT Management Framework	P	P	S	S			S		P	S	P	S	S	S	P	P	P
	APO02	Manage Strategy	P		S	S	S		P	S	S		S	S	S	S	S	S	P
	APO03	Manage Enterprise Architecture	P		S	S	S	S	S	S	P	S	P	S		S			S
	APO04	Manage Innovation	S			S	P			P	P		P	S		S			P
	APO05	Manage Portfolio	P		S	S	P	S	S	S	S		S		P				S
	APO06	Manage Budget and Costs	S		S	S	P	P	S	S			S		S				
	APO07	Manage Human Resources	P	S	S	S			S		S	S	P		P		S	P	P
	APO08	Manage Relationships	P		S	S	S	S	P	S			S	P	S		S	S	P
	APO09	Manage Service Agreements	S			S	S	S	P	S	S	S	S		S	P	S		
	APO10	Manage Suppliers		S		P	S	S	P	S	P	S	S		S	S	S		S
	APO11	Manage Quality	S	S		S	P		P	S	S		S		P	S	S	S	S
	APO12	Manage Risk		P		P		P	S	S	S	P			P	S	S	S	S
	APO13	Manage Security		P		P		P	S	S		P				P			

Figure 5 Mapping result IT-Related Goals to Process Domain APO.



			IT-related Goal																
			Alignment of IT and business strategy	IT compliance and support for business compliance with external laws and regulations	Commitment of executive management for making IT-related decisions	Managed IT-related business risk	Realised benefits from IT-enabled investments and services portfolio	Transparency of IT costs, benefits and risk	Delivery of IT services in line with business requirements	Adequate use of applications, information and technology solutions	IT agility	Security of information, processing infrastructure and applications	Optimisation of IT assets, resources and capabilities	Enablement and support of business processes by integrating applications and technology into business processes	Delivery of programmes delivering benefits, on time, on budget, and meeting requirements and quality standards	Availability of reliable and useful information for decision making	IT compliance with internal policies	Competent and motivated business and IT personnel	Knowledge, expertise and initiatives for business innovation
			01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17
	COBIT 5 Process		Financial						Customer		Internal							Learning and Growth	
Deliver, Service and Support	DSS01	Manage Operations		S		P	S		P	S	S	S	P			S	S	S	S
	DSS02	Manage Service Requests and Incidents				P			P	S		S				S	S		S
	DSS03	Manage Problems		S		P	S		P	S	S		P	S		P	S		S
	DSS04	Manage Continuity	S	S		P	S		P	S	S	S	S	S		P	S	S	S
	DSS05	Manage Security Services	S	P		P			S	S		P	S	S		S	S		
	DSS06	Manage Business Process Controls		S		P			P	S		S	S	S		S	S	S	S

Figure 6. Mapping Result IT-Related Goals to Process Domain DSS

Capability Level Measuring Process

This stage involves assessing the selected domain processes, where each domain process is checked gradually to determine if it meets the requirements at each level, ranging from level 1 to 5. To meet the assessment criteria, there are category requirements for each level. A process will be categorized as "Largely achieved (L)" if the score obtained is between 50-80%, and if the score achieved is between 85-100%, the category obtained is "Fully achieved (F)" (Syuhada, 2021).

The results of the capability level calculations are displayed in a graph illustrating the capability level calculations, as shown in Figure 7. Figure 7 illustrates the results of the capability level calculation for the APO and DSS domain processes as follows:
Level 2 with an attainment of 5, consisting of domains APO06, APO07, DSS01, DSS02, and DSS03.

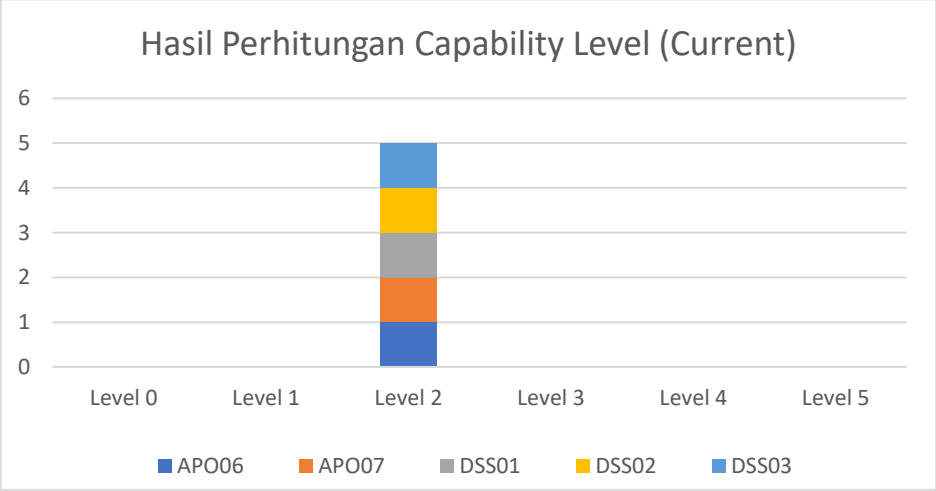


Figure 7. Capability Level Calculation Graph

From the graph of capability level calculations shown in Figure 7, a spider diagram is then created to indicate the achieved capability levels, target capability levels expected, and the gaps for each APO and DSS process assessed as depicted in Figure 8.

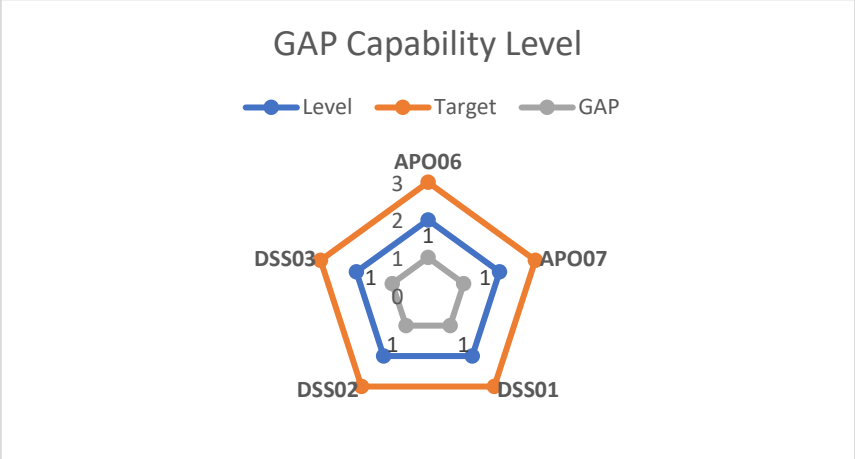


Figure 8. GAP Analysis Spider Web Diagram

Based on The calculation results of the 4 selected domain processes, they serve as a reference to determine the gap analysis by first establishing the desired targets. The results of the gap analysis are presented in Table 1.

Table 1
GAP Analysis Result

Process Code	Process Description	Current Capability Level	Target Capability Level	GAP Analysis
APO06	Manage budget and costs	2	3	1
APO07	Manage human resources	2	3	1
DSS01	Manage operation	2	3	1
DSS02	Manage service requests and incidents	2	3	1
DSS03	Manage problems	2	3	1

Based on the above GAP analysis results, calculations are carried out to determine the average Capability Level achieved in the IT function.

$$\text{Capability Level} = \frac{(0*1) + (1*0) + (2*5) + (3*0) + (4*0) + (5*0)}{5}$$

$$= \frac{10}{5}$$

Capability Level = 2

Conclusion

Based on the analysis of Information System governance at Credit Union XYZ, it can be concluded that the relevant COBIT 5 processes, including APO06, APO07, DSS01, DSS02, and DSS03, are critical to addressing governance issues. Currently, the average capability level for managing these Information Systems is at Level 2, while the desired future target is Level 3, indicating a gap of 1 level that needs to be addressed.

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