IT Governance Analysis and Design of Microfinance Institution Using COBIT 5 Framework Evaluate, Direct, Monitor (EDM) and Align, Plan, and Organize (APO) Domains (Case Study: PT Sarana Jabar Ventura)

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Abstract—A microfinance institute (LKM/ Lembaga Keuangan Mikro) is a company that focuses in providing funds to small, early-stage, and emerging firms or small medium enterprises. A company that is engaged in financial sector and works under the surveillance of OJK/ FSA (Financial Service Authority) always has some questions whether this company really needs to implement IT Governance best practices or to what extent it does. The research in PT Sarana Jabar Ventura as one of the microfinance institutes using COBIT 5 framework for the domain of EDM (Evaluate-Direct-Monitor) & APO (Align-Plan-Organize) has shown that the existing practice is not adequate enough to align the business to IT and to manage its risk optimally so the IT solution will be beneficial for the business. Therefore, it is necessary to design the IT governance practice here, based on the seven enablers of COBIT 5 which are categorized into 3 aspects: process, people, and technology. The results of this research are design recommendations as follows: IT policy, procedures, organization structure, job description and the supporting tools and technology. It is expected that the company will implement the results in the near future.

Keywords—COBIT 5, IT governance, microfinance institution

I. INTRODUCTION

Nowadays, IT investments are growing so fast, the spending market currently reaches USD 3.5 Trillion according to Gartner Market Data Book 2016. But the Standish Chaos Report 2011-2015 reported that the IT project failures for moderate category were in average of 17% and challenged about 32% which were considered still high. The research from PwC & ITGI in 2011 has shown that IT Governance best practices implementation brought 27.1% increased value and 28.1% improved business competitiveness [2] which is expected to become the controls to mitigate the failure risks as stated above. The failure of implementing IT governance will affect the organizational image and reputation that will impact to organizational financial condition [2]. This problem has also an impact to microfinance institutes in Indonesia.

Microfinance institute (LKM/ Lembaga Keuangan Mikro) is an institution that provides business development services through loan and provides funds to small, early-stage, and emerging firms. The ability of such institutions to raise funds is limited because most of them still rely on traditional and manual things when they work [3]. Microfinance institutions in Indonesia work under the surveillance of OJK. OJK is an independent institute which is close related to regulate, supervise, inspect, and investigate the financial sector [4]. It is expected that OJK as the regulator will release policies that could assist the microfinances to implement IT governance so they know what to do and how to do to achieve and maintain the benefits of IT governance. This paper presents a case study about the analysis and design of IT governance good practices at PT Sarana Jabar Ventura as one of the registered microfinance institutes in Indonesia by using strategic alignment and risk management methodology in COBIT 5 frameworks. The design will become the IT governance recommendation in COBIT 5 EDM and APO domains and align with COBIT 5 seven enablers that are defined in people, process and technology categories. This paper will describe the research methodology that has been used, its findings and also recommendation. Furthermore, the conclusion of this paper will be summarized.

II. LITERATURE REVIEW

2.1. IT Governance

IT governance is defined as the processes that ensure the effective and efficient use of IT in enabling an organization to achieve its goals [5]. Definition of governance by [6] state "Governance is about systematically determining who makes each type of decision, who has input to a decision and how these people (or groups) are held accountable for their role". In this case, IT Governance is responsible for specifying the decision rights and accountability framework to encourage desirable behavior in the use of IT.

2.2. Seven Enablers in COBIT 5

COBIT 5 helps enterprises create optimal value from IT by maintaining a balance between realizing benefits and optimizing risk levels and resource use [7]. The fifth COBIT 5 principles explain that COBIT 5 have a holistic approach that influence whether something will work. That approach described by seven categories of enablers that consist of:

a. Principles, policies, framework: communication mechanism to direct the desired behavior

b. Process: set of practice and activity to achieve the goals and create an output to support all IT related goals

c. Organizational structure: key entities in organizational decision making

d. Culture, Ethics, Behavior: organizational and individual culture and behavior

e. Information: one of the main factors in business that ensure business process goes well.

f. Service, infrastructure, applications: set of components that provide IT service for the business

g. People, skill and competencies: alignment of individual abilities so they can complete their activities and make decision appropriately

COBIT considers IT Governance as being a structure of relationships and processes to direct and control the enterprise, achieve the enterprise's goals by adding value while balancing risk versus return over IT and its processes [8]. From these definitions, it can be said that IT Governance is focused on [9]:

a. Creation of business value (strategic alignment)

b. Preservation of business value (risk management)

III. RESEARCH METHODOLOGY

3.1. Conceptual Model

Conceptual model explains the structure to think, observe and direct the research to identify what to be done and how to analyze and design solutions to the problems. Fig.1 explains the conceptual model in this research. This model is generated from the COBIT 5 implementation lifecycle model step 1 until 4. The model is divided in 3 sections: input, process, and output. In the input section, researchers will identify and analyze the microfinance strategic objective, policies, driver, and the evidence that could support the implementation of IT governance in PT Sarana Jabar Ventura. In the process section, strategic alignment and risk assessment will be performed to find the prioritized process that will be the basis of this research. The data of the prioritized process in strategic alignment are gathered by adjusting the existing condition with ideal condition and try to align and find the gap in their strategic objective. And the data in risk management are gathered by performing a questionnaire with a high level management to find the risk that causes a gap in their strategic objective. Furthermore, the seven enablers in scope are analyzed based on COBIT 5 to compare the existing condition into the best practices that are suitable for the company. Then, the gaps between the ideal conditions with existing practices will be analyzed based on the seven enablers of COBIT 5 and the solution design, based on 3 aspects: people, process and technology, will also be recommended.
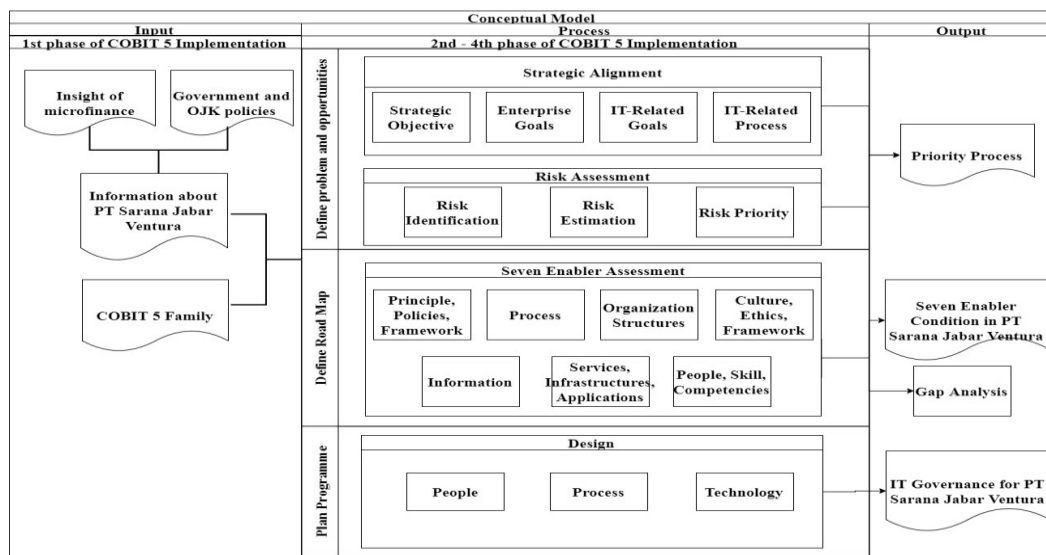

Fig. 1 Conceptual Model

IV. ANALYSIS

4.1 Strategic Alignment

Strategic alignment is a process to translate the strategic objective into the enterprise goals, IT-related goals, and IT-related process, so it allows the definition of priorities for implementation, improvement and assurance of governance of enterprise IT based on strategic objectives of the enterprise and the related risk [10]. In addition, the result of strategic alignment shows the prioritized processes which will be analyzed in seven enabler assessments. Table I shows the list of the prioritized processes form strategic alignment.

TABLE I
IT PROCESS PRIORITIZATION: STRATEGIC ALIGNMENT

No			IT Process	Score
1	EDM	1	Ensure Governance Framework Setting and Maintenance	7.71
2	APO	2	Manage Strategy	7.71
3	APO	5	Manage Portfolio	7.71
4	APO	11	Manage Quality	7.71
5	BAI	1	Manage Programs and Projects	7.71
6	BAI	2	Manage Requirements Definition	7.71
7	BAI	3	Manage Solution Identification and Build	7.71
8	BAI	8	Manage Knowledge	7.71
9	DSS	2	Manage Service Requests and Incidents	7.71
10	DSS	4	Manage Continuity	7.71
11	DSS	6	Manage Business Process Controls	8
12	MEA	1	Manage, Evaluate and Assess Performance and Conformance	7.28

4.2. Risk Management

Risk management is a set of policies and procedures in the organization to manage, monitor, and control the organizational exposure against risk [11]. In this process, we want to discover some pain points through interview and validate the result with a direct observation and confirm the evidence. The findings will be aligned with COBIT 5 related process and will be analyzed to determine the prioritized processes for this research. Table II shows the list of pain points which becomes the concern of the company and this research.

TABLE II
IT PROCESS PRIORITIZATION: RISK ASSESSMENT

No	Pain Point	Category	Related COBIT 5 Process	Process Priority
1	There are insufficient skills to cover the business requirements	IT expertise and skill	APO01, APO02, APO03, APO07	APO2
2	Database is corrupted, leading to inaccessible data	Information	APO01, BAI02, BAI04, DSS01, DSS04, DSS05, DSS06	BAI02, DSS04, DSS06
3	Intermittently, there are failures of utilities (telecom, electricity)	Infrastructure	APO02, APO04, BAI03, BAI04, BAI10, DSS05	APO02, BAI03
4	There is an inability to use the software to realize desired outcome	Software	BAI03, BAI05, BAI06, BAI07, BAI08, BAI10	BAI03, BAI08
5	Inadequate requirements lead to ineffective service level agreements (SLAs)	Business ownership	EDM01, APO01, APO02, APO05, APO09, BAI01, BAI02	EDM01, APO02 APO05, BAI01, BAI02

Notes: BAI & DSS domains are not included within this paper scope

4.3 Seven Enabler Assessments

The previous assessment is performed to find the organizational focus in IT governance. Moreover, we already determine the prioritized processes which become the basis in the design of IT governance in PT Sarana Jabar Ventura. Furthermore, this research will be proceeded by carrying out the seven-enabler assessments. They will assess the current organizational capabilities in implementing IT governance and management and then analyze the gap that must be filled in the organization to perform an ideal IT governance for this company. This assessment is performed by using the guidance that is provided in COBIT 5 for Assurance for EDM and

APO domains, especially EDM01, APO02, APO05 and APO11 as the result of prioritization mentioned before. Furthermore, the assessment begins on the principles, policies, behavior enabler until people, skill and competencies enabler to measure the existing capability of IT governance and management practices within the organization.

Before performing the assessment, we identify the needs of the capability that should be achieved. Then, we can analyze the gaps and design the appropriate recommendation for PT Sarana Jabar Ventura. Table III shows the capability existing, target and gap for each prioritized processes in this research.

TABLE III
IT PRIORITIZED PROCESS CAPABILITIES AT PT SARANA JABAR VENTURA

No	Process	Target Level	Existing Level	Gap
1	EDM01	1, Fully Achieved (85%)	1, Largely Achieved (52%)	33%
2	APO02	1, Fully Achieved (85%)	1, Largely Achieved (62%)	23%
3	APO05	1, Fully Achieved (85%)	1, Largely Achieved (53%)	32%
4	APO11	1, Fully Achieved (85%)	1, Largely Achieved (54%)	31%

The table shows that IT capabilities from each processes are still not adequate and have not demonstrated a good IT governance and management practices. Hence, PT Sarana Jabar Ventura needs to achieve level 1 fully before proceeding to the next level of implementation.

V. RESULT AND RECOMMENDATION

The analyzed gaps after the assessment will become the basis to design the solution recommendation within seven enablers distributed into 3 aspects: people, process and technology which will be used to improve the IT-business processes in the organization into good IT governance and management practices in the near future. Additionally, as a microfinance institution, the methods and the results of this analysis and design research of PT Sarana Jabar Ventura will be very useful as the references to set the standard for the future of OJK regulation for this industry.

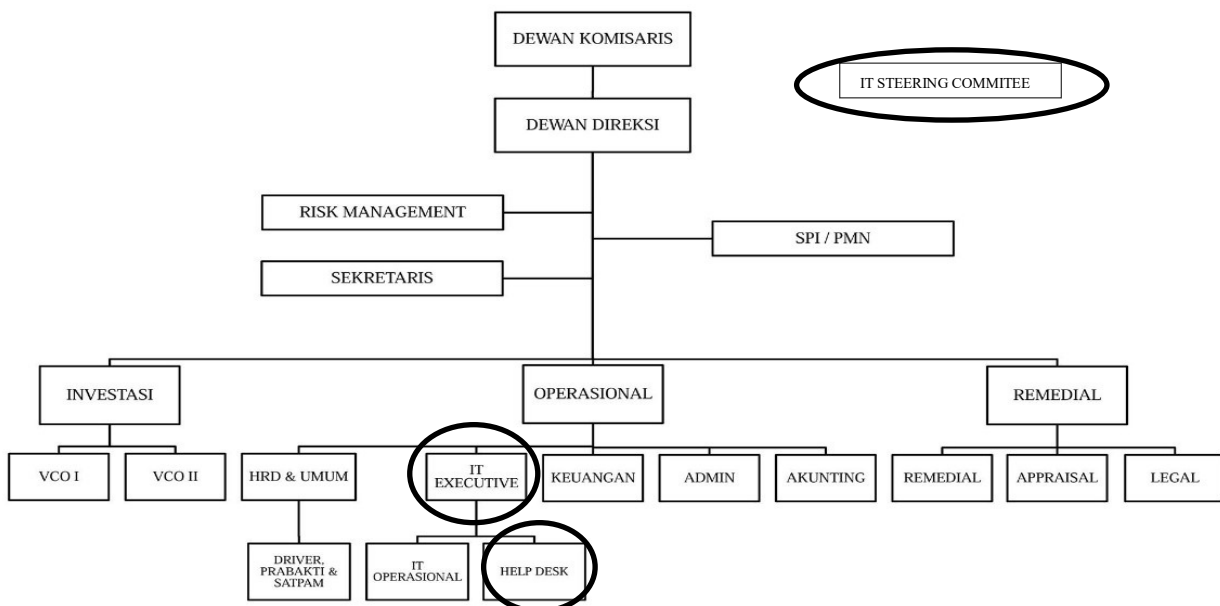The recommendations are divided into 3 aspects as follows: People, Process, and Technology.

Fig. 2 Organizational Structure of Improvement Recommendation

5.1 People

The solution in this aspect is given based on the gaps within the organizational structure and people, and also the skills and competencies of enablers. PT Sarana Jabar Ventura has not separated its governance and management processes as well as guided by any framework. Therefore, the first recommendation is about organizational structure improvement and its

competencies in every stakeholder that is involved in EDM and APO prioritized processes. The new structure of IT steering committee, the CIO function, the IT leads/ executive, and IT service desk/ helpdesk and in the organizational structure are expected to manage the organization to run the IT-business processes with adequate segregation of duties (SoD) and collaboration from the governance and

management sides. Fig 1 shows the recommended organizational structure for PT Sarana Jabar Ventura.

Skill and competencies related to the people's solution are determined according to EDM and APO ideal condition in COBIT 5 and appropriate with organization conditions. Table IV shows the recommended skill and competencies with their job description that best suited with the proposed organizational structure.

TABLE IV
PROPOSED SKILL/ COMPETENCIES AND JOB DESCRIPTION FOR PT SARANA JABAR VENTURA

No	Structure	Skills/ Competencies	Job Descriptions
1	IT Steering Committee (adhoc, positioned as a clearing house for strategic meeting, consist of some of the director representatives and all of the functional leaders)	- Strategic decision making - Business-IT strategic analysis and design - Monitoring and evaluating	- Give/ advice/ review for the IT strategic iniatiatives - Monitor and evaluate the progress of IT project and implementation according to the strategic plan
2	CIO Function (the appointed Director that coordinates the IT Function)	- Oral and written Communications - Leadership - Strategic decision making - Business-IT strategic analysis and design - Monitoring and evaluating the progress	- Decide the policy regarding to IT - Direct/ Evaluate/ Monitor the target and direct the IT governance practice - Direct/ Evaluate/ Monitor the IT governance strategic road map - Direct/ Evaluate/ Monitor the budget for IT investment - Direct/ Evaluate/ Monitor the standard for IT Quality management
4	IT Leads/ Executive	- Managerial skills - Decision making - IT prioritization - Good communication	- Manage the IT division to fulfill the business objective and maximize the benefit of IT resources - Determine the qualification of the project unit, it's its member and the leader and manage the projects - Monitor all ongoing projects and their cost benefits
5	IT Service Desk/ Helpdesk	- Responsiveness - Fast Learner - Good Communication	- Receive and take notes about the complaints about incident happened - Communicate and give a solution regarding to the incident and escalate incident if the solution cannot be solved - Close the ticket if the incident/ problems have already solved

5.2 Process

The solution in this aspect is given based on the gaps in principles, policies, and framework, process, culture, ethics and behavior and information enabler. PT Sarana Jabar Ventura does not have policy, procedure, even culture that support the IT governance practice, so the IT governance practice in the organization still depends on the board of commissioner and director initiatives as an authorized chief in charge. Therefore, the recommendation will be purposed in the form of an IT governance policy and standard operational procedure which fits the needs of EDM and APO prioritized processes. The pointers below show the recommendation of policies and procedures which are expected to assist the implementation of IT governance practice in PT Sarana Jabar Ventura.

The recommended policy is an IT Governance general policy that consists of the IT Governance and management fundamental principles, IT strategic management, portfolio management and quality management that represent EDM01.

The recommended procedures are distributed according to their prioritized and related processes that consist of the following points:

1. how to determine the strategic plan and roadmap, how to assess current environment, capabilities and performance, how to communicate the strategy and directions that represent APO02;
2. furthermore, how to determine the investment plan, how to maintain the portfolio, how to manage benefit achievements that represent APO05; and
3. finally, how to establish quality management system, including monitoring, controlling and reviewing, and maintaining improvements that represent APO11.

5.3 Technology

The solution in this aspect is given based on the gaps in information and service, infrastructure and application enablers. PT Sarana Jabar Ventura currently does not have the technology or services that support the IT governance and management practices. Technology in PT Sarana Jabar Ventura only supports operational activity; therefore, we recommend some application that provides services to assist PT Sarana Jabar Ventura in implementing IT governance and management practices. The proposed application has some specific criteria that comply with IT governance practice in EDM and APO domain. The first one is an EA tools that support the activities for designing organizational enterprise architecture. The enterprise architecture is a critical aspect in the domain of APO because it is utilized to identify the main component of an organization and how it works as a system to achieve the business goals. Additionally, we add a project management tools and an ITSM (IT Service Management) tools that support management and operational tools that can support other domains in COBIT 5. Table V shows the criteria that are needed and the comparison of some tools that can be used to support IT Governance practice in PT Sarana Jabar Ventura

TABLE V
COMPARISON OF SUGGESTED TOOLS FOR PT SARANA JABAR VENTURA

No	Tools	Description	Price	COBIT 5 Process				
				EDM	APO	BAI	DSS	MEA
1	Archi	EA tools	Free	V	V			
2	JIRA Software	Project management tools	20$ each month/ 10 user		V	V		
3	Wrike	Project management tools	24.80$ each month/ 1 user		V	V		
4	ITOP	ITSM tools	Free				V	V
5	OTRS free	ITSM tools	Free				V	V

VI. CONCLUSION

Based on the seven enabler designs within the EDM and APO domains at PT. Sarana Jabar Ventura, especially EDM01, APO02, APO05, and APO11 as the result of strategic alignment, risk assessment and the seven enabler assessments that are performed to find the IT capabilities in each prioritized processes, it can be concluded that as a microfinance institute that is supervised by OJK, PT Sarana Jabar Ventura does not have the knowledge about how important IT governance can support its business improvement. So, this paper provides the IT governance analysis and design that are recommended to be implemented by it within the category of people, process and technology. It is expected that PT Sarana Jabar Ventura will implement these design recommendations in the near future so its business processes can be operated more effective and efficient to improve the return of IT investments by creating the right value and managing its risks and resources optimally. In addition, this method and the results could also become the references for OJK to design the IT governance and management regulation for microfinance institutions in the future.

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