

Organizational Agility Maturity Level of State Electricity Company

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Abstract— The turbulent environment and increasingly sophisticated technology force organizations to have the capability to overcome problems and opportunities both in the internal and external environments in a responsive, competent, flexible, fast, and agile manner called agility to increase the organization's competitive advantage. This study aims to determine the maturity level of the state power plant organization's agility. The subjects of this study were 106 employees of PT PLN Persero UIW North Sumatra using simple random sampling. The measuring instrument used in this research is the organizational maturity model. The data obtained were then processed using One-Way Anova analysis. The results show that the maturity level of the country's power generation belongs to level 2: agility transition. At the second level of maturity, the organization is successful in deploying agile values and establishing a suitable technology base in most areas of the organization. This study can be used as a guide for state power plants to see organizational agility maturity level and invest in improving organizational agility in each organizational work area.

Keywords—organizational agility, state electricity company, PLN UIW North Sumatra

I. INTRODUCTION

As more organizations are in today's competitive and fast-changing environment, organizational agility is an important and relevant concept [9]. Organizations can survive by identifying organizational practices that are important determinants of organizational agility, such as how an organization can scale its staff, retain and expand its knowledge and ability to balance control and autonomy through its organizational structure [2]. During the Covid-19 pandemic, as an effort to improve the welfare of the people, the Indonesian government carried out a program to reduce and liberate electricity costs [7]. Regarding this government policy, PLN is also ready to carry out the government's decision to provide services for small communities, industry, business, and society [4].

However, PT. PLN Persero also has a problem where during the Covid-19 pandemic, PT. PLN Persero experienced heavy pressure on its financial condition and suffered losses due to changes in the exchange rate of the rupiah against the United States dollar [6], related to the financial problems of PT. PLN Persero, the government intends to limit the granting of electricity supply permits and the use of captive power in order to overcome the problem of oversupply of electricity faced by PT. PLN Persero which can have an impact on the performance of PT. PLN Persero [1], increasing capacity factors and capacity payments, so it is necessary to renegotiate with IPP PLTU (Independent Power Producers of Steam Power Plants) to reduce them and power plants that are considered old must be replaced with newer energy generators that are more efficient. effective use [1], to deal with these problems the organization must be agile.

Tallon & Pinsonneault [8] state that agility is the ability to reveal and respond to opportunities along with threats in an environment with ease, speed, and organizational prowess. Organizational agility is an organizational process that continuously

adapts to a changing environment to achieve organizational agility and goals in the most efficient and effective way where the organization begins to utilize, develop, or find various supporting factors and capabilities needed. for organizational agility, including organizational structure and services [11]. Organizational agility, which is the ability to quickly respond to environmental changes through modifying the products and services provided, is gradually becoming an important issue to achieve and maintain a sustainable competitive advantage in a rapidly changing market [11]. Above all, agility will be the strategy that will allow organizations to survive on the battlefield indefinitely [5].

Wendler [9][10] mentions that the factors that affect organizational agility consist of six factors which after being analyzed finally become three dimensions, namely: (1) Dimension 1: Agility Prerequisites, dimension 1 combines two factors, each of which represents a certain type of prerequisite. for an organization to be agile. The first and perhaps the most important aspect of being agile is building an organizational culture that shares agile values. The second aspect is the availability of an appropriate technology base that enables and supports the necessary communication and collaboration processes (technology); (2) Dimension 2: Agility of People. Agility of people includes the ability of organizational members to achieve organizational agility and apply it to action or an action. These capabilities are divided into employee capabilities and management of change; (3) Dimension 3: Structures Enhancing Agility. Structures enhancing agility is the ability of an organization with structural conditions and processes that affect the way the organization works, especially regarding collaboration and cooperation between employees and stakeholders in the organization, namely collaboration and cooperation, and flexible structures. These factors are expected to make the organization agile.

State electricity company still dominate electricity in the country, but now many companies have their own power plants, so that organizational partners are reduced, and there are other alternatives in producing electrical energy to be distributed, and there are still power plants that are considered old, damaged, and need improvement. Based on the explanation above, researchers are interested in knowing the maturity level of organizational agility at state power plants in Indonesia, especially in North Sumatra.

II. PURPOSE AND METHODS

This study aims to determine the maturity level of organizational agility at the power plant of the North Sumatra region in Indonesia. The subjects in this study were 106 subjects using simple random sampling. Organizational agility is measured using the organizational agility model from Wendler [9], which includes: (1) agility prerequisites, consisting of agile values and technology, (2) people agility, consisting of workforce and change management, and (3) agility enhancement structures, consists of collaboration and cooperation and a flexible structure. The scale method used is Likert [2]. Each item contains five answer choices consisting of Strongly Agree (SS), Agree (S), Neutral (N), Disagree (TS), and Strongly Disagree (STS) with a score of 1 to 5. The score obtained from the scale will increase the level of organizational maturity, which is divided into four parts:

Table 1. Organizational Agility Maturity Stage

Average score	Maturity stage
1, 2.5	0: Non-Agile
2.5, 3.5	1: Agility Basics
3.5, 4.5	2: Agility Transition
4.5, 5	3: Organizational Agility

To determine the organizational maturity stage, an average score was calculated for each sub-dimension, then the organization was categorized into one maturity stage (table 1.) per sub-dimension according to the average score obtained.

The measuring instrument used is an adaptation-modification measure of the organizational agility maturity model with a total of 45 items. Furthermore, the validity test is carried out, namely content validity and construct validity (Confirmatory Factor Analysis), then performs an item discrimination power test, and finally tests the reliability of the measuring instrument. From the results of the tests carried out, 24 items were dropped and 21 items were used. Data analysis was performed with descriptive statistics and One-Way ANOVA.

III. RESULTS AND DISCUSSION

An explanation of the categorization of organizational agility can be seen based on the mean, standard deviation, maximum and minimum values of research subjects. This is based on a variance scale consisting of 21 items with a value range of 1 – 5 assuming a minimum score of 21 and an assumption of a maximum score of 105. To determine the level of organizational agility in the study, the following categorization was carried out:

Table 2. Categorization of Organizational Agility

Formula	Category	Frequency	Percentage (%)
$X < 49$	Low	0	0
$49 \leq X \leq 77$	Moderate	13	12.3
$X > 77$	High	93	87.7
Total		106	100

Based on the categorization of organizational agility variables, it can be concluded that the subject's assessment of organizational agility in organizations is high, namely as many as 93 subjects with a percentage of 87.7%, who gave a moderate assessment of organizational agility in organizations as many as 13 subjects with a percentage of 12.3%, while those who gave a low assessment on organizational agility in the organization does not exist.

To determine the organizational agility maturity stage, what is done is the data obtained from filling the scale, then the average value is determined. It is then entered into a Microsoft Excel spreadsheet, and the variances are grouped per dimension. The resulting output is used to show the level of organizational agility maturity model in the organization.



Fig. 1 Indicator Average

From the picture above, it is known that the results of the values per indicator are as follows; agile values with an average value of 4.42, technology with an average value of 4.33, workforce with an average value of 4.23, management of change with an average value of 4.33, collaboration and cooperation with an average value of 4.28, flexible structures with an average value - average 4.17. From the results obtained per indicator that the organizational maturity stage is at level 2: Agility Transition with a value range of 3.5 - 4.5, it is also known that agile values have the highest value and flexible structures have the lowest value.

Next, the maturity stage is carried out based on the average value that has been obtained for each sub-dimension or per indicator, the result is 4.29. Then the results are categorized into one of the maturity stages based on the score obtained, which is in the range of 3.5 – 4.5 at maturity stage 2, namely the agility transition. More details can be seen in table 4.20 below.

Tabel 3. Maturity Stage of State Electricity Company

<i>Average score</i>	<i>Maturity stage</i>	<i>Mean</i>
1, 2.5	0: Non-Agile	
2.5, 3.5	1: Agility Basics	
3.5, 4.5	2: Agility Transition	4.29
4.5, 5	3: Organizational Agility	

Based on this explanation, it can be concluded that the organizational agility maturity stage in the organization is in stage 2, namely the agility transition. At level 2, namely the agility transition, the organization is successful in spreading the values of agile and building the appropriate technology base in most organizations. Many employees and managers share ideas about agility and have appropriate abilities. Changes are mostly welcomed and handled accordingly. In many cases, organizations undertake activities to support and promote teamwork and establish an organizational structure that is flexible enough to cope with impending change. However, organizations at this stage of maturity are characterized by weakness in one or two sub-dimensions of the model while others are already at a relatively high level of agility. Therefore, they are still in the transition phase towards complete organizational agility [9].

It is known that during the research, the organization is in the process of improving its organizational structure or is undergoing restructuring, this can support the results of the study, where the value of flexible structures is the lowest among other indicators, which indicates the organization needs improvement in the organizational structure.

IV. CONCLUSIONS

This study describes the organizational agility maturity stage in the state power plant organization in the North Sumatra region. Based on the results obtained indicate that the organization is at maturity level 2, namely the agility transition. A total of 93 subjects gave a high score with a percentage of 87.7%, and none gave a low rating. The results of this study can be used as a guide for organizations to determine the organizational agility maturity stage of the organization, make improvements in every part of the organization, and invest to make the organization achieve the level of organizational agility.

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