

Analysis on Enterprise Risk Management Implementation on the Process of E-Procurement of Goods and Services (Case Study at PT PLN (PERSERO) P2B APB of East Java)

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Abstract:- PT PLN (Persero) a corporation engaging in electricity with the quite big investment to meet electricity power in Indonesia has implemented e-Procurement to facilitate the process of procuring goods and services. During the process of procuring goods and services potential risks may arise and obstruct the Company's business process, therefore PT PLN (Persero) also adopts Enterprise Risk Management System. This study is applied to every stage of process of procurement, namely from the process of request for order of goods and services procurement, process of procuring of the goods and services up to receiving the goods in the warehouse together with the process of payment. In the framework of Risk and Insurance Management Society (RIMS) for Enterprise Risk Management, risk management constitutes a continual process by involving every unit of organization both of functional or technological aspect so that strategic opportunities can be identified and any risk that may happen in the Company in future can be minimized. Measuring maturity level in this study is conducted to see the realization and the expectation of the Risk Management Implementation in PT PLN APB East Java and to design the graphic of risk management implementation assessment by integrating Key Risk Indicators of the expected score. Based on the result of measurement it is found out that the risk management implementation in PT PLN APB of East Java is on level 3 or "repeatable", whereas the expected score of risk management implementation is on the highest level (leadership). Therefore the percentage of maturity level performance is 64%. From the 35 risk indicators it is expected to reach the highest level score, that is level of leadership.

Keywords:- ERM (Enterprise Risk Management), RIMS for ERM (Risk and Insurance Management Society (RIMS) for Enterprise Risk Management, Enterprise Risk Management Implementation, Maturity Level.

I. INTRODUCTION

PT. PLN (Persero) / Indonesian State Electricity Cooperation is a corporation engaging in electricity to meet the need of electricity energy throughout Indonesia starting from electricity generation, transmission up to distribution. Tackling so vast sectors, PLN has many units to manage. Therefore PT. PLN in Indonesia is a company that manages many important aspects, and the problem of procurement of goods and services for such broad scope is a very vital that must be fully considered by PT PLN. PT. PLN (Persero) in the course of its business so far and seeing a very big investment in the need of electricity power, and that is why to support the facility and need for the process of procurement of goods and services an e-Procurement system has been implemented, meaning the process of procurement is conducted Online. Through the process of e-Procurement PT. PLN/ (Persero) is expected to be able to execute Good Corporate Governance.

However, the implementation of e procurement of goods and services may have the potential of having some risks that may obstruct the company's business process. Therefore PT. PLN (Persero) also applies Enterprise Risk Management besides the e-Procurement implementation to meet the Company's objective of efficiency, effectiveness, openness, transparency, fair and accountable action to get the best suppliers of goods and services, to obtain the best quality of goods and services as needed, and to get the best competitive price and also to get accountability or trust from the stakeholders (Government, society, employees, supplier and customer). All such things are clearly set forth in the Guideline for Procurement of Goods and Services of PT. PLN (Persero).

Enterprise Risk Management (ERM) is one of the very systematic methods in viewing any risk and then properly will determine the risk management. It can also be a means to identify the source of risks and uncertainty and also to estimate the effect that may arise and then to develop what to be conducted for such risk. Seeing the fact that the need of investment in the sector of electricity is very huge, whereas the procurement of goods and services is quite special that may result a big risk.

Risk management as a function of controlling internal compliance is very important, however to implement the risk management to the process of e-Procurement still has no special assessment for reviewing the capability and organization of such procurement, such as assessing the risk control of indicators :

- *Efficiency and process of competition*
- *Cost reduction and improvement*
- *Supplier management (List of Selected Suppliers, number of projects)*
- *System efficiency and internal process*
- *Procurement management*

By applying risk management system to the process of e-Procurement of goods and services, we have to conduct an analysis to the maturity of risk management implementation by projecting it to the level of maturity by using the framework of Risk and Insurance Management Society for the Enterprise Risk Management. The result of measurement and analysis of the level of maturity for the risk management implementation will be expected to be the early warning system and can be used for the basic consideration for any practitioner of risk management of PT PLN (Persero) P2B APB East Java in making a proper decision.

Measuring the maturity level of risk management implementation to the e- Procurement of goods and services can identify how far the level of compliance to the risk management and how the risk relating procurement of goods and services can be minimized. Besides, after knowing the maturity level of risk management implementation, it can be followed up with the controlling action after e -Procurement of goods and services implementation. Controlling activity means a mechanism or activity that may monitor every stage of e procurement of goods/ services.

II. LITERARY STUDY

A. Definition of Risk and Risk Management

Definition of Risk based on Oxford English dictionary is defined as a chance or possibility of danger, loss, injury or other adverse consequences. According to the Institute Risk Management, a risk is the combination of probability of an event and its consequences from positive consequence up to the negative consequence.

On a journal written by Ampri (2006) the definition of a risk is described by Vaughan (1978) is as hereunder :

1. Risk is the possibility of loss
2. Risk is uncertainty
3. Risk is dispersion of actual from expected results
4. Risk is the probability of any outcome different from the one expected.

Risk management is a culture, process and structure that is led to an effective management for potential opportunities and adverse influence, including risk analysis and prudent steps that is started from better understanding

and awareness upon the consequences of business environment that is full with uncertainties.

According to COSO, risk management can be defined as “[A] process, effected by an entity’s board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives”

Such definition can be further described as hereunder:

- a. Ongoing process, when the risk management is conducted continuously and can be periodically monitor. Risk management is not a onetime event.
- b. Effected by people means that risk management is determined by the parties that are available in the company’s environment. Risk management will be formulated the director/ manager and employees of related department/ sector.
- c. Applied in strategy setting means that risk management must have been prepared from formulating the organization’s strategies by the toporganization management. The strategies to be planned must be in line with the risk that may be faced by each part/ unit of the organization.
- d. Applied across the enterprise means the strategy that is set based on risk management is applied in the operational activities and including all units of the organization. Seeing the risk of each unit may be different, the risk management implementation must be based on the risk identification of each unit/ section.
- e. Designed to identify potential events, means the risk management is designed to identify event or condition that potentially obstructs the achievement of the company/ organization’s objective.
- f. Provide reasonable assurance, means any risk that is managed properly and reasonably will guarantee that the activities and services conducted by the company will run optimally.
- g. Geared to achieved objectives, means the risk management is expected to be the guideline for the organization to achieve its specified objectives.

B. Degree of Maturity Level

Degree of Maturity Level of risk management implementation will be different from one organization to another. The process of grouping is based on different levels. Maturity model approach is a method that is proven very useful in various industries. A maturity model is a structured method of observing the aspect of Company’s risk management effectively. One of the maturity models is a Risk and Insurance Management Society (RIMS) for Enterprise Risk Management.

Maturity Model level is used as a tool to benchmarking and self-assessment by the management in a more efficient way. Maturity model for the management and control to the process of e-Procurement of goods and services relating to the company’s or organization’s evaluation method that the company/ organization may

have a self assessment, with result starting from the level 0 (non-existent) up to the level 5 (leadership).The framework of Risk and Insurance Management Society proposes the following :

1. Level 0 – Nonexistent
2. Level 1 – Ad Hoc
3. Level 2 – Initial
4. Level 3 – Repeatable
5. Level 4 – Managed
6. Level 5 – Leadership

The development of stages of maturity level is complimentary from the lowest level up the highest level. So every level development has included the key criteria and identity on the prior level.

C. Enterprise Risk Management

On September 2004, a Committee of Organization Sponsoring Treadway (COSO) issued a Framework of Company's Risk Management, to provide the framework model for Enterprise Risk Management. Such framework defines Enterprise Risk Management as follows "[A] process, effected by an entity's board of directors, management and other personnel, applied in strategy settings and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives (COSO, 2004)"

D. Risk and Insurance Management Society (RIMS)

Risk and Insurance Management Society is a culture, process and measuring tool to identify the strategic opportunities and to minimize uncertainties. This framework may determine the method and consultation relating to the important risk in achieving the objective of business / organization. The process of Enterprise Risk Management is a tested basis in planning methodology of this risk management framework,that is pioneered by the discipline of risk management and adopted and improved by the standard framework of other risk managements.

The 7 attributes of measurement of Risk and Insurance Management Society are:

1. ERM-based approach
2. ERM-process management
3. Risk Appetite Management
4. Root Cause Discipline
5. Uncovering Risk
6. Performance Management
7. Business Resiliency and Sustainability

E. Key Risk Indicators

Key Risk Indicators are metrics used by organizations to provide early signal of increasing risk exposure in various areas of enterprise/ organization. Key Risk Indicators will give indicator for the management to identify or to give signal that action of correction and mitigation must be taken. Key Risk Indicators can be concluded from the score of multi- dimensional risk to be the potential risk.

In practice, in order to be measurable and easy monitored indicators that can take the role as an early warning system, key risk indicators can be classified based on their parameters as follows:

- a) Medium Threshold, shows an early threshold that is indicated that the risk event that may happen with small probability.
- b) High Threshold constitutes the maximal threshold indicating that a risk may happen with bigger probability.
- c) Value unit is a value unit of threshold.

F. Definition of Procurement and e-Procurement

Procurement is actions of obtaining needed goods and services based on logic, systematic, normative and ethical thoughts according to the standard process of procuring goods and services.

Procurement of goods and services must be implemented under the principles of procurement , namely principles of efficiency, effectiveness, transparency, openness, competitiveness, fair/ non-discriminative and accountable action that will increase the public trust toward the process of procurement of goods and services because the result can be accounted to the people from administrative, technical and financial aspect . These principles are in line with the article 5 of Presidential Regulation number 70 year of 2012 follows:

1. Efficiency, means the procurement of goods and services must be conducted with the limited funding to achieve the defined target within the shortest time and it is accountable.
2. Effectiveness means the procurement of goods and services must be according to the specified needs and can provide a quite big benefit in line with the defined objective.
3. Openness and competitiveness mean the procurement of goods and services must be open for suppliers of goods and services that have fulfilled the requirements and will be conducted through healthy competition including similar suppliers of goods and services and meeting the special requirement and criteria based on the clear and transparent regulations and procedures.
4. Transparency means all the regulations and information concerning the procurement of goods and services including administrative and technical requirements of procurement, procedures of evaluation, result of evaluation in defining the candidate of the supplier of goods and services is opened to all participants/ suppliers of goods and services who are interested and also for public in general.
5. Fair/Non - discriminative means giving the same treatment to all candidates of supplier of goods and services and not directing to give profit to any special party with any method and or reason.
6. Accountable means that it must achieve the objective in physical, financial or beneficial way for the smooth implementation of government duties and public service based on the principles and regulation prevailing in the procurement in goods and services.

According to the Decree of President of Republic of Indonesia Number 54/2010 concerning the Guideline of Procurement of goods and services, the government states that:

“E-Procurement is procuring goods or services that is implemented by the use of information technology and electronic transaction based on the prevailing laws and regulations.

➤ *E-procurement as mentioned by Sutedi (2012: 254) is:*

“E-procurement as a website that constitutes a system in procuring goods and services by the government by means of using the facility of technology, information and internet based communication. Adopting e-procurement , the process of auction can be conducted effectively, efficiently, competitively, fairly/non-discriminatively and accountably, so that it is expected it may reflect an openness / transparency and also may avoid e the practice of fraud / Corruption, Collusion and Nepotism in the auction of goods procurement that will cause losses to the state finance”

III. METHODOLOGY

This study is conducted using case study approach to measure the maturity level relating to the implementation of risk management to the process of procuring goods and services,. Using the case study design (Bryman, 2012), the study will relate to the complex and special characteristics of the case. Case study approach is chosen in this study because the objective of this thesis is to identify the implementation of risk management toward the process of procurement of goods and services in PT PLN and to measure the maturity level of the risk management process.

The method used in this study is a qualitative approach (Bryman, 2012), more specific is the Explorative Descriptive Method. The data is collected by doing introductory survey using questionnaires and literature study, and further continued with qualitative data collection in the form of interview, observations and document analysis. The interview is conducted with semi structure method of interview with the managers, supervisors and also the related staff.

In this study measuring and analyzing the development of risk management implementation on PT PLN (Persero) P2B is started from the introductory survey and literature study, problem identification, problem formulation , defining the objective of the study, data collecting and processing and analyzing, and the finding of the study, up to the making of conclusion and suggestion. The steps of the study can be illustrated in the following flowchart on fig 1:

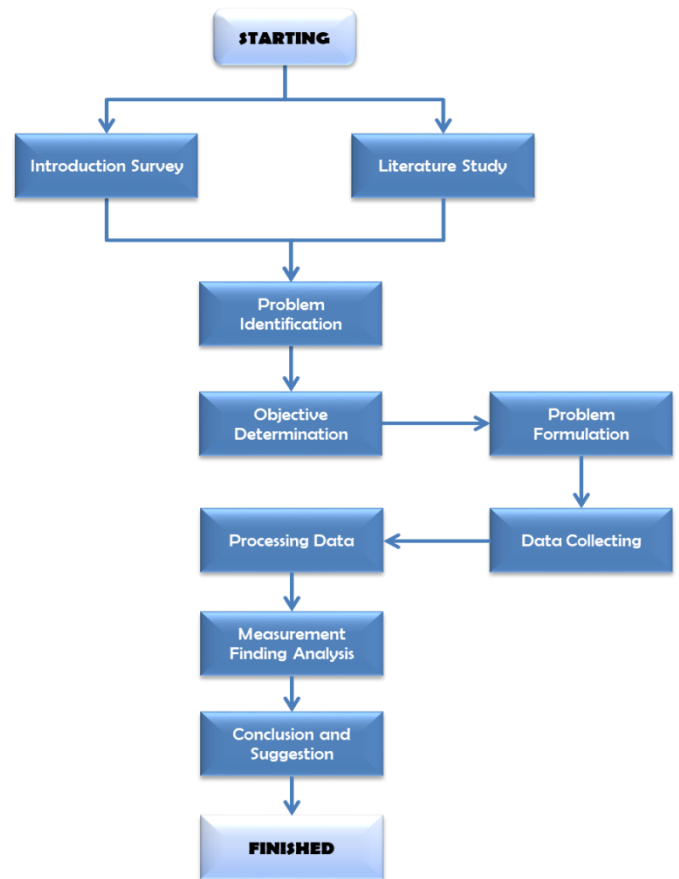


Fig 1:- Flowchart of Method of Study

IV. FINDING AND DISCUSSION

The following respondents are those who are directly involved in the implementation of e-Procurement that consist of:

1. Structural officials consisting of Manager and Structural officials relating to the activity of applying risk management to the process of e-procurement of goods and services.
2. Functional officials consisting of the Expert Staff and Functional Staff of the section handling the process of Risk Management and E-procurement of Goods and Services.

The characteristics of respondents is also differentiated with general characteristics based on the level of education and age and special characteristics that represent specification of work section of each respondent.

Special characteristic of each respondent such as having special competence or skill of a practitioner of e – procurement of goods and services that is acquired by training and tests that is specially conducted relating to the procurement of goods and services. The official’s competence in understanding the process of e-procurement of goods and services can be proven with certificate of expert in e-procurement of goods and services. This will be one of the requirements for an official with special certification for e -procurement of goods and services practitioner subject to President Regulation No 54 year of 2010.

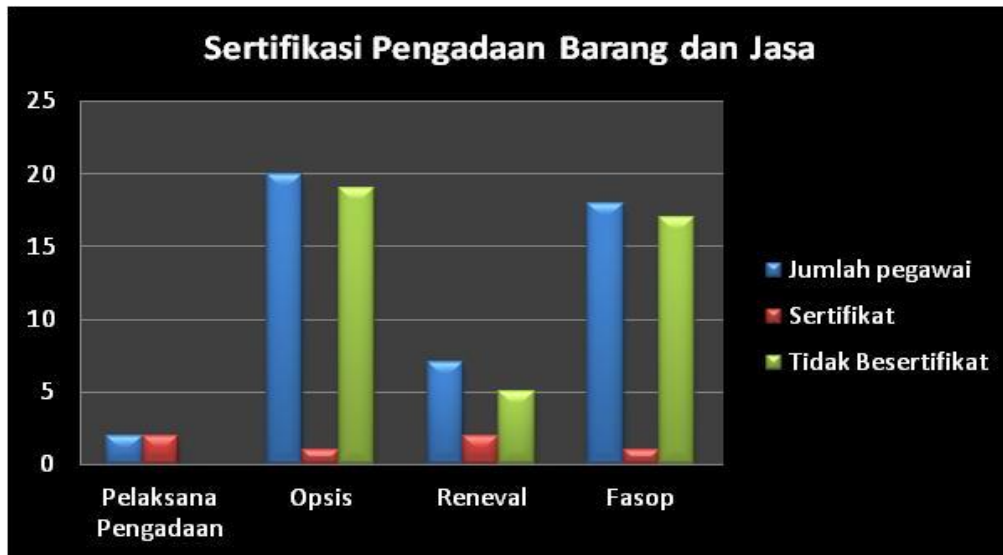


Fig 2:- Respondent having certificate of e- Procurement of Goods and Services (Source : the Processed Data)

From the respondent responses on the introductory survey it can be illustrated by the percentage subject to the

respondents' scores in the skill of level, namely from level 1 up to level 5.

Aspects	Expected Level	Realized Level	Difference	Percentage
ERM-based approach	4	2.40	1.60	60%
ERM Process Management	4	2.20	1.80	55%
Risk-Appetite Management	4	2.20	1.80	55%
Root Cause Discipline	4	2.20	1.80	55%
Uncovering Risks	4	2.20	1.80	55%
Performance Management	4	2.60	1.40	65%
Business Resiliency and Sustainability	4	2.20	1.80	55%
Total	4	2.54	1.71	57%

Table 1:- Percentage of realized Risk Management Performance against the Expected Target on the Introductory Survey. (Source: the processed data)

Risk management at PT. PLN (Persero) Area Electrical Load of East Java has been started in the year of 2012 and it is gradually implemented up to the area of the smallest unit of Centre of Electrical Power Load/*Pusat Pengatur Beban*. However there is no special section of Risk management in this area and the implementation is conducted by a special team namely Risk Management Team. It can be said that that the risk management implementation is not quite good because there is no special unit that handles and is responsible for the risk management, consequently the risk management implementation in this Centre of Electrical Power Load is still weak.

It is assumed that the risk management team in such area can be responsible for the risk management process, in fact at the same the team also joins in several other functions of the section available in the Centre of Electrical Power Load of East Java, in coordination with the related function in such section. Seemingly this is not supporting the success of risk management implementation, especially if it is related to the e-Procurement of goods and services. Seeing the team consists of various functions it will lead to

work duplication of each section so that the assessment will be biased and the level of work maturity and effectiveness become weak.

This study has conducted two methods of data collecting, namely interview and questionnaires concerning maturity. Based on the result of the questionnaire it indicates that there is a gap between the process of risk management and the process of e – Procurement of Goods and Services. Seeing that the process of e-Procurement of Goods and Services is related to various sections, it is necessary to identify the potential risks and their causes and then to make a list based on the highest level of causes.

This study is applied to every stage of process of procurement, namely from the process of request for order of goods and services procurement, process of procuring of goods and services (vendor selection, making tender, incoming tender from suppliers, negotiation and defining the tender winner) and the process of procurement of goods and services contract and also the process of purchase order and receiving the goods in the warehouse together with the process of payment.

In the framework of Risk and Insurance Management Society for Enterprise Risk Management, Risk Management must be a continuous process by involving every unit of organization, from the functional or technological aspect to identify the strategic opportunities and to mitigate future risks in the company. This continuous process should involve every unit of the company under the coordination and management Risk Management Section. However, currently the Company only has Team of Risk Management in the related unit, because there is no special section or department for Risk Management.

All the process of scoring the level of maturity is started with implementing the framework of Risk and Insurance management Society for Enterprise Risk Management or more known as Risk Maturity Model (RMM). Applying this model to all aspects and various types and risks relating to the process of e – Procurement goods and services we can see how far the company has adopted the process of e – Procurement goods and services. The following are the attributes to measure the maturity level of ERM on the e-Procurement of goods and services.

Risk maturity model for management and control of e-Procurement of goods and services is based on the evaluation method of the company or organization, so that the organization or company can conduct selfassessment,

with scores starting from level 0 (non-existent) up to level 5 (leadership) as defined by the framework of Risk Insurance Management Society as hereunder :

1. Level 0 – Nonexistent (0.00 – 0.50)
2. Level 1 – Ad Hoc (0.51 – 1.50)
3. Level 2 – Initial (1.51 – 2.50)
4. Level 3 – Repeatable (2.51 – 3.50)
5. Level 4 - Managed (3.51 – 4.50)
6. Level 5 – Leadership (4.51 – 5.00)

In the realization the score of risk management implementation is on “repeatable” level (2.51 – 3.50) whereas the expected score is “leadership” level (4.51 - 5.00). Beside, measuring the maturity level of risk management implementation per aspect, the maturity level of the total effect is also scored. And the score of the total effect is also on the “repeatable” level, whereas the expected score is “leadership” level.

Based on the resulting score of each aspect of evaluation using the framework of risk and Insurance Management Society for Enterprise Risk Management, it is indicated that the percentage of the company’s current risk management implementation compared to the expected score of risk management implementation, either per aspect or in total effect is as shown at the following table :

Aspects	Expected Level	Realized Level	Difference	Percentage
ERM-based approach	4	2.80	1.20	70%
ERM Process Management	4	2.60	1.40	65%
Risk-Appetite Management	4	2.20	1.30	55%
Root Cause Discipline	4	2.40	1.60	60%
Uncovering Risks	4	2.60	1.40	65%
Performance Management	4	2.60	1.40	65%
Business Resiliency and Sustainability	4	2.60	1.40	65%
Total	4	2.54	1.46	64%

Table 2:- Percentage of Performance of Risk Management Implementation Source: The processed data

The above table indicates that the score of risk management implementation at PT PLN (Persero) Area Pengatur Beban of East Java for each indicator is on level 3, “repeatable”, whereas the expected level of all indicators is on level 4, “managed”.

Measuring the maturity level of the total quality of risk management in PT PLN (Persero) Area Pengatur Beban of East Java in total is to identify each aspect that has been scored after identifying each risk of activity of the process of e–Procurement within at PT. PLN (Persero) Pengatur Beban of East Java and the level of maturity achieved is on level three, “repeatable” with total percentage of 64%. However, the e-Procurement implementation shows an increase compared from the first survey total achievement that is only 57% .It is reasonable

seeing that this process implementation is relatively not long.

Table 2 indicates the average of aspect level that is measured based on the response of respondents and the supporting data to meet the expected material. Based on the level of importance it can be said the most important aspect supporting the process of e-Procurement is the support and commitment from the senior management and seeing Indonesian people are still adopt east culture, that the encouragement of management constitutes a very important factor that may have a great impact to the risk management implementation. Such commitment can be in the form of guidance, encouragement and also can be determinating factor by the time of company assessment. This is can be seen from the following diagram:

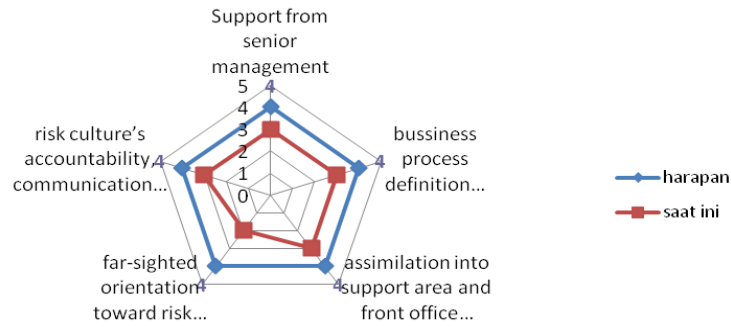


Fig 3:- Diagram of Comparison between the Expected Result and Realized result of ERM based Approach. Source : the processed data

The lowest score of importance is related to the risk appetite of management whether the management wants and able to take risk or the management has no courage to take risk in relation to e-Procurement process will be a very important because it will affect to the change of company's

performance relating lowering work program compliance and also work program using investment fund.

The result can be seen in the diagram hereunder:

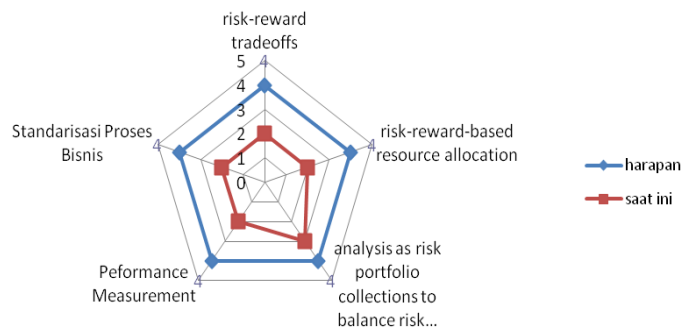


Fig 4:- Diagram of Comparison between the Expected Result and Realized Result of Risk Appetite Management aspect Source: the processed data

There are total instruments of 35 statements of detailed description of the 7 (seven) supporting aspects in the scoring of maturity level of risk management implementation. By calculating the correlation of each statement, the average score can be identified. It is known that the expected score on the table is the score that is targeted on the contract of performance of the related unit that indicates that risk management is one of the very important aspects and supported by the senior management.

Every work program that is proposed before the process of procurement must have been subject to process of risk identification and mitigation of each aspect of the program. Despite the fact that the implementation of ERM has not achieved maximal score as illustrated on Fig 5 the relatively new process of ERM has run quite well and the monitoring and progress report for the mitigation of each work program has been conducted in stages.

V. CONCLUSION

Relating to the analysis of the level of maturity of risk management implementation to the e-procurement of goods and services, it can be concluded as follows:

1. Risk identification has been analyzed and risk mitigation is already prepared and periodically reported.
2. Risk Management has become the company's culture and included in the target of unit management performance contract.
3. Any risk found in the process of e – procurement has been subject to mitigation and followed up with proposed preventative activity and also with process of reviewing and monitoring.
4. Implementation of internal and external risk management has been conducted periodically and systematically.

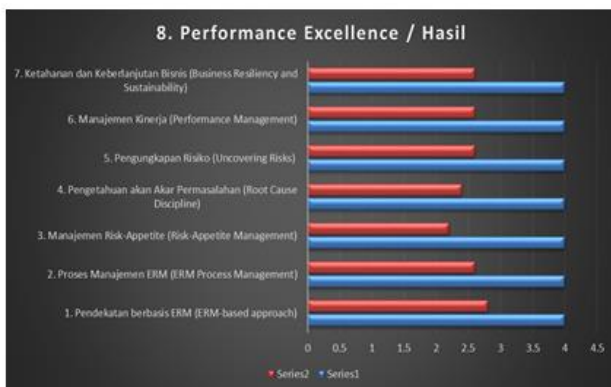


Fig 5:- Performance Excellence of level of maturity Source: the processed data

5. Plan of work program of each section has been realized based on the allocated priority and accompanied with risk management review.
6. The realized score of maturity level of the implementation is on level three, “repeatable”, whereas the targeted expected score is level 4 or “managed”
7. The percentage of the total quality achieved is 64% of the expected score of risk management implementation.
8. The officials handling e –procurement of goods and services are not fully certified

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