

Evaluation of Information Technology Governance Order to Cash Based on Cobit 5.0 with Domain Monitor, Evaluate and Assess (Mea 01)

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ABSTRAK

The application of technology that has become the needs and demands of the company of PT Semen Tonasa, to overcome the problem of technological implementation requires the evaluation of IT governance. The purpose of this research, in general, is to know the condition of the governance of IT order to cash specifically to know the current capability level, knowing the gap between current capability and target capability is expected, and provide the appropriate recommendation case study of PT Semen Tonasa by using the COBIT Framework 5.0 domain MEA. The data analysis method used is survey research with a quantitative descriptive approach that later results from the distribution of questionnaires will be managed to generate information in the form of figures and diagram results from the evaluation of the level of information technology governance capabilities based on the COBIT framework 5. In this study, also conducted a statistical test of T paired test, double linear regression test, and factor analysis to get a more accurate recommendation.

INTRODUCTION

The application of technology has become a need and demand that must be faced by companies and agencies. Technology for information processing is called an information system which is a series of subsystems or components that will manage data so that it has meaning to be used as useful information for decision makers.

The importance of using technology in information management for operational and non-operational activities has been realized by PT Semen Tonasa since the company consolidated with PT Semen Indonesia (Persero) Tbk. The main components in information systems consist of software, hardware, infrastructure, data, methods, databases, equipment and personnel (human components) (Loudon and Loudon, 2018: 49; O'brien and Marakas, 2011:31; Azhar Susanto, 2016: 72).

These components must be managed properly so that the goals of a system can be achieved. In order to ensure that it has run as expected, it is necessary to conduct an evaluation. One of the existing information system governance frameworks is Control Objective for Information and Related Technology (COBIT) version 5.0. PT Semen Tonasa uses SIA as information management in two core businesses, namely: order to cash and purchase to buy.

Based on interviews with finance employees, internal auditors found problems that became audit findings in 2018 and 2019 related to the order to cash system. First, errors in inputting transaction data such as numerical errors or account placement that can occur at the recording adjustment stage, the receivables collection stage and the cash receipt stage. Second, late recording of cash receipts after collection of receivables and cash receipts.

Audit findings are an indication of errors in the governance of the use of information systems. When viewed from the observed indications, the problem lies in the personnel component (users, especially operators). Before a system is implemented, the company will certainly carry out a training process and socialization of the use of information systems.

Similarly, with PT Semen Tonasa, there is a training process in operating SAP. At the time of switching from J.D., Edwards & Co-ERP to SAP-ERP, training was carried out by SAP consultants directly known as trial and error for two years of initial SAP operation according to the modules used by each part involved.

So far, it is uncertain whether governance, especially the training and knowledge sharing process, has been carried out properly, making it difficult to determine whether the process has been carried out well or has been carried out but wrong in planning so that replanning must be made in the training process.

Based on the description of the audit findings and indications of errors in the operation of the SAP application, it is necessary to know the planned Human Resources (HR) training or development process. This can be known by evaluating based on the domain of COBIT 5.0, namely MEA. When viewed from the description of audit findings and indications observed, the MEA01 sub-domain is the focus of research because MEA01 can provide an overview of

the implementation of the HR development process, the use of information systems to be in accordance with the expected goals. This IT governance evaluation step is solely for the sake of further realizing the alignment of the condition of the Order To Cash system with the objectives of the PT Semen Tonasa unit. In this study, the author wants to know how to find out the capability level, measure the gap between current capabilities and expected capability targets, and what are the right recommendations for improvements to the order to cash system, a case study of PT Semen Tonasa using the COBIT 5.0 framework of the MEA domain.

The scope of this study based on the formulation of the problem above is that the author will only focus on the order to cash (sale) system in accordance with the audit findings submitted by the resource person. Governance evaluation using COBIT 5.0 which focuses on the MEA sub-domain MEA01 which consists of five sub-processes, namely MEA01.01, MEA01.02, MEA01.03, MEA01.04 and MEA01.05. The general purpose of this study is to determine the condition of IT *order to cash* governance owned by PT Semen Tonasa. Meanwhile, the specific purpose of this study is to determine the *current capability level*, the gap between current capabilities and expected capability targets, as well as appropriate recommendations for improvements to the *order to cash* system of PT Semen Tonasa case study using the COBIT 5.0 MEA domain *framework*.

METHODOLOGY

This research took place at PT Semen Tonasa located in Biringere, Pangkep Regency, South Sulawesi. This research time is planned for 4 (four) months, from January to April 2020. In this study, all populations related to *orders to cash* will be sampled. Then sample mapping uses a RACI chart to group related roles according to the *job description system order to cash* so that it is expected that the answers on the questionnaire can match and represent the situation in PT Semen Tonasa. Here's the mapping using the RACI chart in Figure 1.

Key Management	Coordinator of Treasury	Staff of Treasury	AR Staff	Amin Subledger I
	A	R	R	R
MEA01.01 Establish A Monitoring Approach	A	R	R	R
MEA01.02 Set Performance and Coformance Targets				
MEA01.03 Collect And Process Performance And Conformance Data			A	R
MEA01.04 Analyse And Report Performance.	A			
MEA01.05 Ensure The Implementation Of Corrective Actions	A	A	I	

Figure 1. Mapping Respondents using RACI Chart1

The data collection technique used is a questionnaire. The questionnaire contains written questions given to respondents at PT Semen Tonasa. The questions made on the questionnaire refer to the COBIT 5.0 framework with the *Monitor, Evaluate and Assess* (MEA) domain on the MEA01 sub-domain. Assessment of the maturity level of the results of the questionnaire given based on the *process capability level* consisting of levels 0-5.

Questionnaires were given to respondents based on *Key Management Practices* (KMP) in each process. Respondents to the questionnaire were obtained from the results of RACI identification described in Table 3.1. The questionnaire measurement scale used is the Likert scale. The answer to each instrument item that uses the Likert scale has a gradation from very positive to very negative in the form of words for quantitative analysis purposes, so the answer can be scored:

- 1 : Strongly disagree
- 2: Disagree
- 3: Agree
- 4: Very setuju

Mapping *indicators* of research questionnaires on the MEA01.01 sub-domain can be seen in Table 1

Table 1. 1Research Questionnaire Indicators and Parameters

Sub Domain	Practice	Key Management Practice (Indicator)	Indicator	Questionnaire Items
MEA01 (Monitor, Evaluate and Assess performance and conformance)	Collect, validate and evaluate business IT and process objectives and metrics	- MEA01.01 <i>establish monitoring approach.</i>	Communication (knowledge sharing) & training (parameters)	12
		- MEA01.02 <i>set performance and conformance targets</i>	Quality brainware & responsibility	12
		- MEA01.03 <i>collect and process performance and conformance data.</i>	Responsibility & quality brainware	12
		- MEA01.04 <i>analyses and report performance.</i>	Analytics and reporting	0
		- MEA01.05 <i>ensure the implementation of corrective actions.</i>	Repair	0

The questionnaire distributed was divided into two, namely condition one (I) and condition two (II). The explanation of each condition can be seen in table 2.

Table 2. Condition Grouping2

Indicators & Parameters	Condition I	Condition II
Training (parameters)	General / mandatory	General / mandatory
Communication (approach)	Conduct mentoring	Receive mentorship
Responsibility (target)	General / mandatory	General / mandatory
Responsibility (measurement)	Responsibility for monitoring and data	Responsibility for <i>approving</i> inputting and processing data
Quality Brainware (target)	Responsible for the improvement of the skills of other colleagues	Only responsible for the improvement of personal skills
Quality of brainware (measurement)		

A : Meets condition I : 25 respondents

B : Meets condition II : 28 respondents

The purpose of differentiating questionnaires is to make it easier for respondents to answer the statements in the questionnaire. However, the calculation will be equalized because this study focuses on HR development which looks at both conditions to assess the extent of the level of development carried out by the company.

This type of research is in line with that conducted by Raharjo (2019: 263), namely *survey* research. The *survey* method used in this study is a descriptive method with a quantitative approach. The types of data in this study are primary and secondary data. The primary data in this study is the result of data processing from data collection techniques carried out at PT Semen Tonasa. Secondary data in this study is in the form of organizational structure, Standard Operating Procedures (SOP) and *job description* and visual application used.

The test uses a statistical calculation application, namely SPSS version 23 to obtain the validity and reliability results of all data or questionnaires that have been distributed. This analysis uses the *scoring* method, the goal is that the organizati to the highest level so that the *governance* aspects of information technology can run smoothly.

on can find out the current position of information technology maturity and the organization can continue to be sustainable and try to improve its level

Below are the steps that will be carried out:

- a. Each level has a different questionnaire. Each question on the questionnaire has a score between 1 and 4 which reflects the level of achievement that the system has in MEA01.01, MEA01.02 and MEA01.03.
- b. Conducting statistical testing to analyze MEA01.04, namely *analyze and reporest performance*. The analysis consisted of performing a paired t tt between MEA01.02 and MEA01.03, conducting a multiple linear regression test to see the effect of MEA01.01 on MEA01.03, and conducting factor analysis to determine variables (levels 1-5) that can be used to provide a relative description by grouping these variables into factors based on similar correlation values. The three tests were also carried out to find the causes of the gaps that occurred and, strengthen the provision of recommendations as a solution to audit findings in research.
- c. Summing the respondents' questionnaire answer scores on each variable is then averaged andpoked according to the sub-process.
- d. The author uses the *capability level* calculation formula used in Wijaya's research (2016: 25), namely the number of scores that have been obtained and then multiplied by 100%.

$$Capability\ Level = \frac{Jumlah\ Jawaban}{Jumlah\ Soal\ Kontrol} \times 100\%$$

The results obtained will be categorized according to the number of percentages obtained categorized according to percentage achievement After obtaining categories at each level, researchers can determine the *capability level* of the company's system. If each level gets an F or L category, it can be assessed at a higher level. But if the level gets the N or P category, maka *capability level* cannot rise to a higher level.

In addition, methods of implementing information technology governance include:

- a. Phase 1 - *Intiate Programme*

At this stage, explain what the drivers of PT Semen Tonasa are, especially related to the *order to cash system*. The overview at stage one is seen in Table 3.

Table 3.3 Stage 1 IT Governance.

Stage 1	
<i>Input</i>	<ul style="list-style-type: none"> - Organizational structure ofPT Semen Tonasa - Duties and authorities of PT Semen Tonasa on <i>order to cash</i> - Sales Business Flow
<i>Output (output)</i>	<ul style="list-style-type: none"> - Overview of PT Semen Tonasa - Sales SOP - Control of <i>order to cash</i> system - RACI diagram or <i>stakeholders map matrix</i>

Tahap 2 – *Define Problems And Opportunities*

At this stage, the level of capability of PT Semen Tonasa related to the current *Order To Cash* system regarding IT performance is carried out. An overview of stage two is seen in Table 4.

Table 44. Stage 2 IT Governance

Stage 2		
<i>Input</i>	-	RACI diagram or <i>stakeholders map matrix</i>
	-	Overview of PT Semen Tonasa
	-	Sales SOPs
	-	Control of <i>order to cash</i> system
<i>Output</i>	-	Questionnaire
	-	<i>Current capability Rating</i>

Tahap 3 – *Define Road Map*

At this stage, the target for improvement is defined from the results of the gap analysis in the results of the *capability level* questionnaire given. An overview at stage three is seen in Table 5.

Table 5.5 Stage 3 IT Governance

Stage 3		
<i>Input</i>	-	<i>Current capability rating</i>
<i>Output</i>	-	<i>Target capability rating</i>
	-	<i>gap analysis</i>

Phase 4 – *Plan Programme*

At this stage, a program plan and proposals are carried out from the results of the analysis through questionnaires given to respondents related to the *order to cash* system. An overview at stage four is seen in Table 6.

Table 6.6 Stage 4 IT Governance

Stage 4		
<i>Input</i>	-	<i>Current capability rating</i>
	-	<i>Target capability rating</i>
	-	<i>gap analysis</i>
<i>Output</i>	-	Recommendations for improvement in each process, namely the process in MEA01

Finally, making recommendations for improvement in each process in the domain obtained from the findings and measurement of gaps in the organization. From the results of the analysis, the ability level consists of level 0 – level 5. When the organization's ability is at level 0, recommendations will be given for improvement so that the level of organizational capability is above it or improves at the current level of organizational capability, except level 0.

RESEARCH RESULTS

Current capability level

Results of the calculation of current capability level and rating scale level At this stage the author will present the calculation of *the current capability level and rating scale level* of the MEA01 domain sub-process (monitor, evaluate and assess performance and conformance) from MEA01.01 (*establish a monitoring approach*) to MEA01.03 (*collect and process performance and conformance data*). Here are the results of the *current capability level and rating scale level*:

Table 7. Calculation of Current Capability Level and Rating Scale Level

Processes	Capability level calculation	Current Capability (Average respondent answers)	Level Rounding	Percentage % (Average respondent answers/5 levels*100)	Conclusion
MEA01.01	Training	3,000	3	60	<i>Largely achieved</i>
	Communication	2,932	3	59	<i>Largely achieved</i>
MEA01.02	Responsibility (target)	3,227	3	65	<i>Largely achieved</i>
	Quality of brainware (target)	2,742	3	55	<i>Largely achieved</i>
MEA01.03	Responsibility (measurement)	3,023	3	60	<i>Largely achieved</i>
	Quality of brainware (measurement)	2,606	3	52	<i>Largely achieved</i>

Based on the analysis of the results and the determination of the capability level on MEA01, it has been obtained that the *current capability* value of MEA01 is at level 3, namely that MEA01 is in the *established* process which means MEA01 has been carried out, there are standards for its application in carrying out the process in this case the development of human resources for *brainware*, and communication runs well. MEA01 has also been tested with a *scale level rating* to see if this sub-process can go to the next level and on average is at the *largely achieved* level which means it can go to the next level. The target level to be achieved is level 4, which is *the predictable process*.

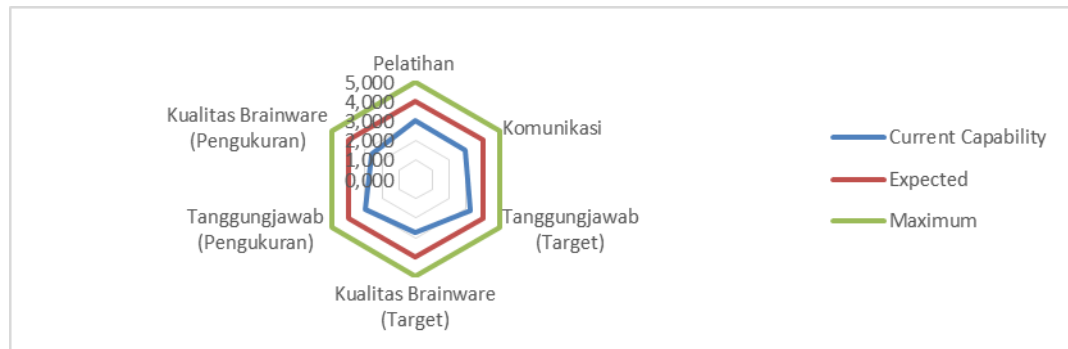


Figure 2. MEA01 GAP Analysis Chart

Table 8. MEA01 GAP Analysis

<i>Capability level calculation</i>	<i>Current Capability</i>	<i>Target</i>	<i>Maximum Level</i>	<i>GAP (target-current)</i>
Training	3,000	4	5	1,000
Communication	2,932	4	5	1,068
Responsibility (target)	3,227	4	5	0,773
Quality of brainware (target)	2,742	4	5	1,258
Responsibility (measurement)	3,023	4	5	0,977
Quality of brainware (measurement)	2,606	4	5	1,394

Before reaching the maximum level or level 5, it is necessary to reach level 4. The gap between the current level and the target is that there is a difference in targets that must be achieved, namely in the training variable the gap is 1,000 then the gap for the communication variable is 1,068; Next for the variable responsibility (target) which is 0.773; The gap for the brainware quality variable (target) is 1.258; and for the responsibility variable (measurement) it is 0.977; and finally the brainware quality variable (measurement) is 1.394. To achieve the target level, it can be done to determine the size of HR development for SAP application users and ensure that the size is achieved, then control and evaluate / analyze.

Results of Target and Measurement Difference Analysis Responsibility

The results of the paired *t test* show that there is a significant difference between the target and the measurement of responsibility. The significant difference is caused by respondents on targets related to understanding, implementing and obtaining roles from companies that have not been outlined in measuring data validity responsibility to prevent errors in SAP data or in other words the target has not been achieved.

From the respondents' answers, the target has not been achieved by looking at the capability level score of the target of 3,227 or being at level 3, this is due to 97% who answered in agreement with the target statement presented in the questionnaire and inversely proportional to the measurement of responsibility which has a *capability level* score 3,023 which is also at level 3 but as many as 21% of respondents said they disagreed and only 79% of respondents said they agreed with the statement of measuring responsibility.

The importance of respondents to understand and carry out responsibilities is explained in research conducted by Kusuma (2012: 12) stating that "if we do not have a sense of responsibility then we will not have the motivation to do something correctly and as it should, it may also not comply with the rules that have been arranged as a process that must be fulfilled in completing these responsibilities". By understanding and carrying out a sense of employee responsibility or *brainware* can improve the performance of information systems in producing valid information and become one of the important drivers to improve employee performance because if this role or responsibility is clear and achieved optimally, it will not cause significant problems for the company, both in operational and non-operational activities of the company.

Quality brainware

Based on *statistical* tests conducted, it can be concluded that there is no significant difference between the target and the measurement of brainware quality, this is due to respondents on the target variable stating that they have understood the skills that must be possessed and improve skills by teaching or evaluating and it is in line with the measurement of *brainware* quality or in other words the target has been achieved.

However, if you look at the *capability level* value of the target variable which is only 2,742 which is at level 3 with a percentage of 55%, of course, it is still far from the maximum as well as the *value of the* brainware quality measurement variable capability level of 2,606 with a percentage of only 52% is also still far from expectations, namely at level 4. This can be seen by 30% answering disagree and only 11% are confident by answering strongly agree with the levels that exist on the brainware quality target. In addition, on the variable of measuring the quality of *brainware*, as many as 38% answered disagree and only 8% were sure by answering strongly agreeing and 55% answered affirmatively. This shows the lack of maximum achievement of *brainware* quality related to SAP management.

In research conducted by Fuadi (2012: 101) the research shows how important the quality of *brainware* as a party involved in producing information so that the information is accurate, timely, relevant, and complete to create efficiency and effectiveness of company performance.

Companies that use information systems certainly depend on managing information because research conducted by Rodhiyya (2019) proves that information systems affect information quality and decision making. So if the quality of *brainware* is low or not maximal it can affect information which will have an impact on the quality of information and company decision making.

Results of Analysis of the Effect of Training and Communication (*Knowledge Sharing*) on Responsibility Measurement

There is a partial influence of training and communication variables on responsibility measurement. This means that the HR development approach taken has an influence on the responsibilities owned by brainware. According to Moehariono (2012: 89) "training is the whole activity to give, obtain and improve and develop work competencies, productivity, discipline, attitudes and work ethic at certain levels of skills and expertise according to the qualification level of the position or job." So the training not only focuses on knowledge but also the discipline, attitude, and ethos of the trainees as well as knowledge sharing.

Based on research conducted by Fajrillah and R. Wahjoe Witjiksono (2017: 1); Kang et al (2008: 1549) showed that the knowledge sharing method is a means of communication to share knowledge and provide an understanding of tasks and responsibilities in SAP applications. To find out which variables affect the responsibility variable individually, you can look at the F test value (simultaneous).

Training on responsibility measurement

George and Gareth R. Jones (2012: 57) revealed that training can also be used to improve employees' emotional intelligence. In order for emotional intelligence training to be successful, employees must recognize the importance of emotional intelligence and be motivated to improve their own emotional abilities.

Training conducted by leaders (employees) is training that focuses on the skills of using SAP applications but is less focused on making training methods to train emotional intelligence so that *leaders* or parties who attend the training are less able to motivate other employees regarding the importance of understanding responsibilities in carrying out the roles given by the company. So that leaders cannot carry out the responsibility to provide detailed SAP application guidance, including providing emotional intelligence motivation.

Communication (knowledge sharing) towards the measurement of responsibility

Based on the value of simultaneous tests conducted, it can be seen that there is a significant influence between communication (*knowledge sharing*) on the variable of responsibility measurement. *Knowledge sharing* provides opportunities for each member to exchange and provide the knowledge they have to other members.

Next, a factor test was carried out with the aim of seeing which sub-variables are strong to represent the overall communication variable (*knowledge sharing*). From these tests, the six factors proved strong as a description of the condition based on the questionnaire distributed. These factors include understanding, implementing, running regularly, expectations and levels of the optimization process. So by understanding, running regularly and striving to optimize will affect the responsibility in using SAP applications.

Then from the results of the different tests carried out, there is a significant difference between the target and the measurement of responsibility. This difference illustrates the results that are contrary to Soelistya's (2014; 3) research is needed so that employees know their obligations and responsibilities, this means employees know their position in the organization.

In the background, it is explained that *knowledge sharing* is a method that is applied during employee turnover in the company. Communication variables (*knowledge sharing*) are carried out and are expected to be a means of understanding the role / responsibility in the use of SAP applications that are lacking so that it affects the respondent's sense of responsibility on the validity of transaction data in SAP applications.

Based on the results of previous research, it is known that the mechanism of communication (*knowledge sharing*) can influence the behavior of each employee in his group, in order to achieve one goal. By communicating (*knowledge sharing*) directly to provide explanations related to tasks and doing *knowledge sharing*, it will affect the understanding of work responsibilities that must be owned by employees in inputting and processing data in the SAP application. From the review, it can be seen that the method of communication (*knowledge sharing*) at all levels, namely levels 0-5, is still considered less than optimal to provide an understanding of the sense of responsibility for the role that has been given.

Results of Analysis of the Effect of Training and Communication (*knowledge sharing*) on Brainware Quality Measurement

It is known from the results of the partial t test that training and communication variables affect the measurement of *brainware* quality. This means that the HR approach with training and communication (*knowledge sharing*) has an influence on the quality output of employee *brainware*. Nastiti's research (2013: 3) proves that education, training, and work experience have a positive effect simultaneously or partially on the quality of accounting information presentation.

In addition, the *knowledge sharing* application model which is part of *knowledge management* can be used as a guide for organizations in *outsourcing* information systems and has a positive effect on improving employee work performance (Fajrillah and R. Wahjoe Witjiksono, 2017: 1; Kang et al, 2008: 1549). From the research conducted, it is known that the HR development approach has an influence on the quality of *brainware* in the use of SAP applications. To find out which variables affect *brainware* quality variables individually, you can look at the F (simultaneous) test value.

The effect of training on *brainware* quality

Based on the F test value conducted, it is known that training has no effect on the output of *brainware* quality. According to Thoha (2006: 187) "The quality of *brainware* is one element of maturity related to knowledge and skills acquired from education, practice and experience." Training is the beginning of HR development in the use of SAP applications in the company. For employees who have attended direct guidance or training from SAP consultants in each module, they will teach and help other employees regarding the use of SAP applications.

The absence of the effect of training on the quality of *brainware* is contrary to research conducted by Putri (2014: 101) proving that training and education programs as independent variables have a positive effect on the performance of accounting information system implementation. In addition, the results of the tests conducted are also contrary to research conducted by Halian Imran et al (2015: 22) proving that when compared between the dimensions of human resource competence, the highest is in the training dimension in terms of training material, this is because the training material affects almost all aspects of competency development that can induce effective internal control that can eventually make quality reports.

From this study, a factor test was also carried out to see which strong training sub-variables have an impact on the quality of *brainware*. These sub-variables include; attend training in accordance with responsibilities, postpone training if not in accordance with responsibilities, hope that training on the use of SAP applications can be carried out and followed by other colleagues, and about optimization where respondents strive to plan training on the use of advanced SAP applications to improve the ability to use SAP applications.

Based on other tests conducted, the *brainware* quality target is achieved, meaning that the training provided to employees to teach or help other colleagues does not affect the achievement of the *brainware* quality target. In addition, from the results of the factor test, it can be seen that respondents still do not understand the importance of training, running training, and running training outside of their responsibilities in SAP applications, some of these points if maximized will affect and maximize the quality of *brainware* SAP application users to minimize errors that occur. Similarly, other levels are conducting advanced training programs because based on respondents' answers who are quite enthusiastic about training activities related to the use of SAP.

Communication (*knowledge sharing*) on the quality of *brainware*

Based on the F test (simultaneous) conducted, communication variables (*knowledge sharing*) affect the measurement of *brainware* quality. The results of this study are in line with research conducted by Saputro and Yunadi Matowan (2018;7); Wening (2016) ; Aulia (2016) which proves that *knowledge sharing* has a positive effect on employee performance.

From some of these studies, it can be seen that *knowledge sharing* is a method that can be used by companies to develop human resources related to the use of HR applications. The use of *knowledge sharing* methods has been used for every turnover of company employees. To find out which levels have a strong influence on this variable, a factor test is carried out. Some levels that have a strong influence include understanding, implementing, regularly running communication methods (*knowledge sharing*), and providing teaching / assistance to other colleagues who need help related to SAP applications.

Based on the influence test and difference test, it can be seen that communication is a method that affects the lack of maximum achievement in the quality of *brainware*. Based on several studies that conducted tests to see the influence between communication methods (*knowledge sharing*) and HR development, this method still needs to be optimized from understanding to optimization.

Based on previous data and information, there are several recommendations that can be considered for stakeholders in the company to prevent the recurrence of audit findings that will be discussed according to variables.

- a) Create a training activity program in accordance with employee responsibilities in operating SAP applications. The program is structured such as; Time and place of program implementation, training materials in accordance with modules and responsibilities, understanding the roles and business flows that exist in information systems.
- b) Maximize knowledge sharing activities with related colleagues in a structured manner accompanied by evaluation reports.
- c) Provide top management support as *a leader* to provide work motivation for employees to increase their sense of responsibility.

Make a clear HR development measurement design and make a control design. Making measurements of how far the measurement results are to ensure performance or performance is appropriate and achieving process and organizational goals. Furthermore, a measurement of a process can be assessed quantitatively to be able to produce a process that is stable, capable and predictable within predetermined limits.

CONCLUSIONS AND RECOMMENDATIONS

The company's *capability level related* to training and knowledge sharing is at level 3 or has realized and implemented the process but it still does not reach the level 4 target due to the lack of structured implementation of training and knowledge sharing. Furthermore, the capability of setting targets for achieving a sense of responsibility and quality is at level 3, this is because the focus of defining targets is the implementation of the tasks and responsibilities given, while the capability of achieving responsibility targets and the quality of brainware reaches is also still at 3, namely but still far from the expected target

level, the gap is caused by actualization and defining performance targets that are still less than optimal

There is a significant difference between targets and responsibility measurement due to lack of awareness of a sense of responsibility for the validity of data and awareness of responsibility for other colleagues. But on the contrary, the target and measurement of brainware quality has been achieved but is still very far from the expected level, considering the quality of brainware is very influential on the validity of data in SAP.

In addition, there are several factors that cause the ineffect of training as HR development, among others: there is still a lack of understanding and implementation of HR development through training. Meanwhile, related to *factors in knowledge sharing* are still lacking as a whole, namely understanding to evaluation so that it affects the lack of maximum achievement of human resource development. If these factors are improved, this method can have a major effect on the sense of responsibility and quality of *brainware* in the company.

The gap between *capability* level and *target level* can be overcome with several efforts such as; create a training activity program that is in accordance with employee responsibilities in operating SAP applications; maximize *knowledge sharing* activities with related colleagues; requires the support of *top management* or superiors as leaders to provide work motivation for employees to maximize their responsibilities; make a clear HR development measurement design and make a control design.

There are several suggestions for improving information technology users (*brainware*) PT Semen Tonasa, namely:

- 1) For Companies
 - a) Companies can first meet *the established* process before *focusing* on reaching level 4 or *predictable process*.
 - b) Conduct an audit using the COBIT 5.0 framework to see the maturity level of information system usage.
 - c) Companies need to review the HR development carried out for SAP application users, both the approach taken every employee position turnover and for new employees, considering that employee positions have different modules and T-code on SAP. In addition, companies need to *monitor* and *evaluate* employee performance in inputting data on SAP regularly and structured.
- 2) For the Next Researcher
 - a) The author identifies that the variables tested in this study are still very lacking so that they require testing using variables outside of those studied.
 - b) Perform system audits on other sub domains such as MEA02.
 - c) Add information about gender and age in the distribution of questionnaires.

ADVANCED RESEARCH

This research still has limitations so that further research is still needed on this topic.

REFERENCES

- Aulia, Astuti. 2016. Pengaruh Budaya Organisasi Terhadap Kinerja Karyawan Melalui *Knowledge sharing* Sebagai Variabel Intervening (Studi Pada PT. Pelabuhan Indonesia III Cabang Tanjung Perak Surabaya). Surabaya. Jurnal Ilmu Manajemen Volume 4.
- Fajrillah, A.A.N dan R. Wahjoe Witjiksono. 2017. *The Impact Of Knowledge Management Practices On Information System Outsourcing A Quantitative Approach*. Skripsi. Bandung: Program Studi Sistem Informasi, Universitas Telkom.
- Fuadi A. 2012. Penerapan Sistem Informasi Manajemen Pada PT Pelabuhan Indonesia IV (Persero) Cabang Makassar. Skripsi. Makassar. Bidang Ilmu Administrasi Universitas Hasanuddin.
- Fuadi A. 2012. Penerapan Sistem Informasi Manajemen Pada PT Pelabuhan Indonesia IV (Persero) Cabang Makassar. Skripsi. Makassar. Bidang Ilmu Administrasi Universitas Hasanuddin.
- Gaol, J. L. 2013. *Sistem Informasi Akuntansi Pemahaman dan Aplikasi*. Dialihbahasakan oleh PT Grasindo. Jakarta. PT Grasindo .
- Ginanjari, A. R. 2015. *Penilaian Tingkat Kematangan Model Tata Kelola Teknologi Informasi Infrastruktur Terkait Delivery And Support Di Fakultas Teknik Universitas Pasundan Menggunakan COBIT 4.1*. Bandung: Fakultas Teknik Universitas Pasundan.
- Haliah Imran, Abdul Hamid Habbe, Muhammad Irdam Ferdiansah. 2015. *The Role Of Information Technology As Moderating Variable And Internal Control Effectiveness As Intervening Variable In The Relationship Between Human Resource Competency And Internal*. Makassar: Fakultas Ekonomi dan Bisnis Universitas Hasanuddin.
- Auditor Service Quality On Quality Of Report
- Kang, etc. 2008. *The impact of knowledge sharing on work performance: An Empirical Analysis of The Public Employees' Perceptions in South Korea*. Seoul. Public Administration. Korea Institute.
- Kusuma M. 2012. Pengaruh Akuntabilitas Terhadap Transparansi Penyusunan Laporan Keuangan Pemerintah Daerah (Studi Empiris Terhadap Persepsi Mahasiswa Diploma Akuntansi Di Kediri). Vol 2. Kediri. Politeknik Cahaya Surya Kediri
- Laudon, C. L dan Jane. P. Laudon. 2014. *Management Information System*. Edisi 30. England: Pearson.
- Moeheriono. 2012. Pengukuran Kinerja Berbasis Kompetensi. ed. Revisi. Cetakan Pertama. Jakarta: PT. Raja Grafindo
- Putri I.D. 2014. Pengaruh Kemampuan Teknik Personal, Program Pelatihan Dan Pendidikan Pemakai, Intensif dan Partisipasi Manajemen Pada Kinerja Penerapan Sistem Informasi Akuntansi. Skripsi. Jurusan Akuntansi Universitas Udayana.
- Rodhiyya S.K, 2019. Pengaruh Sistem Informasi Akuntansi Keuangan Daerah Terhadap Kualitas Informasi Akuntansi Dan Dampaknya Pada Pengambilan Keputusan (Survei Pada Organisasi Perangkat Daerah Kota

- Bandung). Bandung. Fakultas Ekonomi dan Bisnis, Universitas Komputer Indonesia.
- Saputro N.S, dan Y Mayowan. 2018. Pengaruh *Knowledge sharing* Terhadap Individual Innovation Capability dan Kinerja Karyawan. Malang. Fakultas Ilmu Administrasi Universitas Brawijaya.
- Soelistya D. 2014. Pengaruh gaya kepemimpinan partisipasi dan komunikasi terhadap motivasi kerja serta dampaknya pada prestasi kerja pegawai di Maspion Group Surabaya Jawa Timur. Jawa Timur. Jurnal Ilmu Ekonomi & Manajemen.
- Wening dkk. 2016. Relationship between *knowledge sharing* to individual Performance. *International Journal of Research in Business Management*