

ITIL V3: Evaluation of IT Governance Gasindo Group

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ABSTRACT

This research was conducted at the Gasindo Group, especially in the enterprise resource planning system or commonly abbreviated as ERP. Researchers conducted research by measuring IT governance services using the ITIL V3 framework. The Department of Gasindo Group experienced data mismatches in controlling assets and trading activities due to errors in tube numbering registrations from various Departments. The research was conducted using the ITIL V3 framework in the Service Operation domain with 5 processes in it, namely Incident Management, Request Fulfillment, Event Management, Access Management and Problem Management. in this study only used three processes, namely problem management, access management and event management. The limitation of the distributed questionnaire adapts to the conditions that exist in the Gasindo Group. The percentage results obtained from problem management (71,1), access management (74,3) and event management stopped at level 1.

ABSTRAK

Penelitian ini dilakukan di Gasindo Group khususnya pada sistem perencanaan sumber daya perusahaan atau biasa disingkat ERP. Peneliti melakukan penelitian dengan mengukur layanan tata kelola TI menggunakan framework ITIL V3. Departemen Gasindo Group mengalami ketidaksesuaian data dalam pengendalian aset dan aktivitas perdagangan akibat kesalahan registrasi penomoran tabung dari berbagai Departemen. Penelitian dilakukan dengan menggunakan framework ITIL V3 pada domain Service Operation dengan 5 proses didalamnya yaitu Incident Management, Request Fulfillment, Event Management, Access Management dan Problem Management. pada penelitian ini hanya menggunakan tiga proses yaitu manajemen masalah, manajemen akses dan manajemen event. Keterbatasan kuesioner yang disebarakan menyesuaikan dengan kondisi yang ada di Gasindo Group. Hasil persentase yang diperoleh dari manajemen masalah (71,1), manajemen akses (74,3) dan manajemen event terhenti pada level 1.

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INTRODUCTION

The need for technology in life cannot be separated anymore, almost all aspects of our lives cannot be separated from technology (Sadowski, 2020). People will use technology to make it

easier for them to carry out their activities (Wallcook et al., 2024). The technology used can support the success of business activities, so companies compete to apply technology to compete with other companies (Fernandes et al., 2023). With increasingly rapid technological developments, companies have to keep up with existing technological developments and want to be a company at the forefront of the business they run (Lange et al., 2023).

In this research, we use the framework that has been provided as a reference for measuring information system audits. The framework used is ITIL V3 (Information Technology Infrastructure Library) domain Service Operation, a framework created by ISACA (Information System Audit and Control Association) (Gunawan et al., 2024). ITIL was created as a framework or as IT service governance, ITIL provides "best practices" which are very supportive for companies to know the service needs that must be controlled, technical problems that occur, as well as minimizing business risks carried out by the company (Gërvalla et al., 2018; Jonathan et al., 2024; Lee & W Wella, 2018; RB & W, 2019; Tanović & AĆ, 2024).

This research raises the case of the Gasindo Group where currently the company has implemented IT governance as one of the conditions for achieving business goals so that the investment that has been spent is commensurate with the goals to be achieved by the company. So far, Gasindo Group has continued to develop its IT management, but this does not guarantee that the company has truly implemented IT governance well, especially in the information technology services section (Gërvalla et al., 2018).

Gasindo Group is a company engaged in trading industrial and medical fluids, transporting industrial fluids, installing Filling Stations, project services, installing medical gas, tank trucks and equipment rental supported by local and multinational industrial gas producers to meet customer needs. Gasindo Group has a problem in one process in the ERP (Enterprise Resource Planning) system. According to the head of IT, namely Mr. Hendra Kasih, on February 17 2018, basically the Gasindo Group Company has used the ERP concept, but there are problems in implementing the system, especially in the inventory section, there are often errors in the numbering of gas cylinders so that there are frequent discrepancies in the data inputted with output issued by the user.

The aim of this research is to measure the level of information technology services in the ERP system and to provide findings, impacts and recommendations for measuring service levels with the research object being the Gasindo Group and this research using the ITIL V3 framework as a research reference. By conducting research on IT services at the Gasindo Group, it is possible to minimize data discrepancies in tube numbering and the company's daily service operations. The existence of IT services and various existing systems can support company performance and increase the value provided to customers.

RESEARCH METHODS

ITIL – Service Operation

In conducting research, of course, a method is needed to solve a problem. The method used in conducting this research uses the ITIL V3 framework which is a series of concepts and techniques for IT infrastructure management, development and operations that are used to view the lifecycle stages which include daily operational activities for managing IT services. The focus of this research is service operations, and the aim is to provide a level of service that focuses on customer or user satisfaction.

According to (Agustina & Sihotang, 2024; Fayola et al., 2024; Kusumawati et al., 2024), service operations have five processes. The following are the five processes in service operations:

1. Incident Management. The process for thinking about how to restore IT services that experience unplanned disruptions and reductions in quality.

2. Problem Management. The process of carrying out root cause analysis and finding solutions to things that cause incidents to occur repeatedly, or being responsible for handling lifecycle problems.
3. Access Management. The process for setting user authorization to be able to access IT services in accordance with the role and rights related to that user field.
4. Event Management. The process of monitoring IT services (Monitoring Service) and Configuration Items.
5. Request Fulfillment. The process of how a service provider can fulfill or not a request from an IT service user.

However, of the five processes in service operations, only three were taken to carry out measurements. The three processes include Problem Management and Access Management, Event Management. The reason for taking the questionnaire was only three processes, namely in accordance with existing problems related to IT governance services at the Gasindo Group.

Through the ITIL V3 framework, the level of capability will be sought which will later be calculated by:

- a. Distributing questionnaires that have been provided within the ITIL framework to respondents who use the ERP system at Gasindo Group.
- b. Calculate the total and average percentage of each activity carried out and divide by the total existing activities.
- c. After getting the total and average results for each process, you will then determine which level a process stops at, the existing levels are from level 1-5.

Audit Stages

This research uses the following audit stages (Lee & Wella, 2018; Novia & Wella, 2019):

1. Planning. The planning stage that will be carried out is determining the object to be audited, namely the Gasindo Group IT Department, then standard evaluation of the audit results and communication with managers in the Gasindo Group IT department by analyzing the vision, mission, goals and objectives of the object under study as well as strategies, policies related to investigation processing.
2. Field Work. At this stage, information will be collected by collecting data with related parties. This can be done by applying various data collection methods, namely: interviews with IT managers, giving questionnaires and making direct observations at the location of the IT department's work space. After the data collection process, data will be obtained which will be processed to be calculated based on the capability level calculation. Based on the calculation results, the capability level will reflect the department's current performance.
3. Reporting. At this stage, we will provide information in the form of the results of the audit findings from the previous stage, then provide an overview if the audit findings are not immediately corrected and provide recommendations for improving the audit findings. Then provide recommendations for target levels of capability that will be achieved in the future.
4. Follow up. What is carried out at this stage is to provide an audit report in the form of recommendations for corrective action to the Gasindo Group IT department, after which the authority for improvements becomes the responsibility of the Gasindo Group IT department whether they will be implemented or just become a reference for future improvements.

Maturity Model

Many companies have used the Maturity Model for the processes and organization a company runs, by providing an ITIL V3 example framework, so that they can assess maturity and identify deficiencies that exist in the company's current IT governance. ITIL V3 provides a parameter for measuring a company's IT system using a maturity model. ITIL is a best practice for measuring service processes for running IT systems by conducting assessments. The scale used in the assessment (Hosseini & Seyed, 2024), namely from the numbers 0-5, while 0 is Non Existent which means not used, 1 is initial which means starting, 2 is repeatable or can also be called recurring, 3 is Defined or fixed and certain, 4 is managed, and the last one is optimized, which is usually called optimization.

The capabilities of the process are expressed in the attributes of each process which are grouped into each level of capability. The capability level of the process is determined based on the process achievements of a particular process. The rating scale includes six levels of ability as follows (Hosseini & Seyed, 2024):

1) Level 0 - Incomplete process

In this process it is not implemented or fails to achieve its objectives.

2) Level 1 - The process is carried out

The process is implemented and achieves the process objectives.

3) Level 2 – Processing

In the previous process described, at this level it is implemented and managed (planned, monitored and adjusted) and the work product is appropriate.

4) Level 3 – Established Process

Previously managed processes are now implemented using process definitions capable of achieving results.

5) Level 4 – Predicted processes

From the process described previously it is now determined to be operated within predetermined limits to achieve results.

6) Level 5 – Optimize

From the previously described processes it is then predicted and improved to meet its current relevance and estimated business objectives.

Tabel 1. Measurement criteria (Mangundu, 2024)

Values	Criteria
0-15	Not achieved
15-50	Partially achieved
50-85	Largely achieved
85-100	Fully achieved

Measurement criteria based on Table 1. which is filled in by giving a value of 0 – 100 for each statement that corresponds to the real situation of the company. The maturity model results are in the form of a percentage, if the percentage exceeds 85% then the process being tested will move to the next level. If the percentage is less than 85% then the process being tested does not level up and cannot continue to test to the next level (Lee & Wella, 2018; Novia & Wella, 2019). The formula used to collect data from each level of the questionnaire is as follows:

$$Index = \frac{\Sigma (\text{answer value})}{\Sigma (\text{question})} \quad (1)$$

RESULTS AND DISCUSSION

Planning

At this stage, start preparing an audit plan by observing IT governance at the Gasindo Group. This stage will determine the scope, objectives of the audit measurement and how to conduct the audit. The following is a description of the implementation of audit measurements using the ITIL V3 framework:

- a. Determine the scope. This research was conducted at the Gasindo Group, which is a business that operates in the service sector, including trading industrial and medical fluids, transporting industrial fluids, installing filling stations, project services, installing medical gas, tank trucks and equipment rental which is supported by local industrial gas producers and multinational to meet customer needs. In their daily lives, several employees spread across all Gasindo Group branches use the ERP system to access the information they need. The system being examined is an ERP (Enterprise Resource Planning) system which is the main object of research.
- b. The purpose of carrying out audit measurements. The aim of this research is to improve data integrity which is a basic concept of information systems. A good information system provides information that is accurate, clear, complete and in accordance with the reality in the field.
- c. How to conduct an audit. When conducting an audit, there are several methods used by auditors. In this research, measurements were carried out using the ITIL V3 framework as a guide for carrying out measurements.

Field Work

Field examinations were carried out in two ways, namely interviews and questionnaires. During field inspections, observations are only permitted to view company documents, namely the company profile, company vision and mission and company organizational structure. Below are the results of the interviews and questionnaires:

The interview was conducted by one party, namely Mr. Hendra Kasih as the representative of the head of the IT department from Gasindo Group branches spread throughout Indonesia. The interview questions given refer to the ITIL V3 domain service operation framework. The questions asked were only about problems related to IT governance services that were often experienced, while the limitations of these problems were the ERP system, which according to the interviewee often experienced problems regarding data integration in each part of the ERP. According to sources, Gasindo Group has implemented a framework to carry out continuous improvements and fulfill the requirements of ISO 9001: 2008 Quality Management System so that customer satisfaction can be achieved.

Tabel 1. Measurement criteria [x]

Num	Process	Total	Information
1	Problem management	71.1	Stop at level 1
2	Access management	74.3	Stop at level 1
3	Event management	71.4	Stop at level 1

The questions asked in the questionnaire are in table 4.1. namely referring to the ITIL V3 framework indicators in the service operation domain, there are five process indicator questions including Incident Management, Problem Management, Access Management, Event Management and Request Fulfillment. However, only three processes were used in this research, namely Problem Management, Access Management and Event Management. The distribution of questionnaires was carried out using tools from Google Form which were sent via email to the head of IT, namely Mr. Hendra Kasih, to make it easier to distribute questionnaires to respondents spread across all Gasindo Group branches in Indonesia. Based on the results of the questionnaire obtained from 10 responses from representatives of Gasindo Group company branches. The results

were obtained using maturity model calculations using Microsoft Excel as a tool to assist with maturity model calculations and the results obtained are as in Table 4.1. From these results it can be seen that the level of Gasindo Group IT governance services in the three processes of Problem Management, Access Management and Event Management only stops at level 1 or cannot go up to level and continues to level 2 because in this process the final value obtained does not reach the value >85.5 or more than 85.5 which is caused by several things as follows.

- a. Problem Management. The calculation result obtained from the Problem Management process is 71.1, this value is below the average that has been determined in the level increase in the service operation process. This is because the Problem Management process is only focused on technical problems compared to the services that must be provided to user.
- b. Access Management. The results obtained from the access management process were 74.3. This is because the activities carried out prioritize the accountability side in the access management process, the standard operational procedure (SOP) is only an instruction. However, there is management in processes and functions that is committed to providing good access management to maintain access rights granted by the company in accordance with company procedures.
- c. Event Management. In the last process in this research, namely the event management process, the results obtained were 71.4. This is because there is no overall standard operational procedure (SOP) for every activity carried out by the company and governance is carried out only by top management.

Reporting

Below is a summary of the grouping of findings in each process.

Tabel 3. Findings and recommendations

Findings	Recommendation
In the distribution of commitments, management has carried out this, but only 20% of all activities have been carried out	The need for support from management; The need for a supporting system; Increase supervision from management; The need for SOPs to improve business processes; and Governance is carried out by all management.
Lack of proactive attitude in an activity	The need for employee initiative to increase proactivity in an activity; Improve the employee creativity development system; and The need for motivation from management.
There are provisions regarding strategic direction for employees but they have not been implemented properly	A system is needed that regulates direction strategies for employees; Increase direction for employee strategy; Improve SLAs for employees; and The need for evaluation of the workforce environment.
There are results from each activity, but performance does not vary based on who does it	The need for division of tasks and roles of employee responsibilities to be more varied based on the job description given; The need for a system that regulates the performance results that employees have worked on; The need for evaluation of each work result; and The need for inventory to store employee performance results.
Lack of automation of every activity carried out	Appropriate division of job desks according to employee abilities is required; The need for an automated system that supports employee work activities; Improving good communication between employees; and Promote a good cultural environment.
There are performance results that are recorded and stored, but only 20% of each activity	Further improved performance results recorded throughout the activity; The need to use technology

Findings	Recommendation
Lack of procedures to increase improvement in an activity	to help employees; The need for good governance for the records kept; and Strict supervision from management is required. Employees must work optimally; The need for a system to increase improvement in an activity; SOPs should be implemented optimally in accordance with applicable regulations; and Priority is given to support from management to improve existing procedures.
Lack of training facilities provided to employees	The need for a workforce that suits the company's needs; The need for a system that supports employees to complete work quickly; Recruiting workers that suit business needs; and The need for a time schedule so that the work done by employees does not pile up.
There is measurement of performance results, but it has not been done well	The need for training to measure employee results; A system is needed to measure employee performance results; Further improved management of the use of labor SOPs; and Employees must carry out SOPs optimally.
There are facilities for collecting stakeholder results from an activity, but they have not yet been implemented optimally	There are written rules for employees to always collect feedback that has been given from stakeholders; The need for a system that supports inventory of stakeholder results; There are facilities to increase service storage; and The need for appropriate storage with adequate capacity.

The recommendations obtained from the findings are then reported to the relevant company, namely the Gasindo Group. Recommendations are made based on the ITIL V3 framework which is taken from three processes, namely problem management, access management and event management in the service operations domain. The number of recommendations given to the company is 40 recommendations.

From the results of research conducted at the Gasindo Group, it can be concluded that controlling assets in terms of tube numbering can be wrong because the user who handles the data input process often changes. Training should be carried out when determining employee job descriptions according to their respective skills and fields. So, users will focus more on their field according to their expertise. So, if something goes wrong in the tube numbering process, it will be immediately corrected by the responsible user according to the jobdesk received.

Discussion

Based on the measurement results obtained from Gasindo Group information technology services using the ITIL V3 framework in the service operation domain, it can be concluded that the three processes measured, namely problem management, event management and access management, stop at level 1. These results were obtained from the percentage of questionnaires collected. has been filled in by all respondents. All results from these three processes were less than 85% or could not go up to the next level because the results from the three processes were less than the average that had been determined to go up to the next level. This is because the three processes at the Gasindo Group have been implemented or are available, but service utilization is less than optimal.

The problem with the ERP system at Gasindo Group is in the process of controlling assets which causes errors in the numbering of tubes, which does not match the data issued with the data that has been input. In this case, it is necessary to divide job desks according to their respective skills and fields so that controlling can be carried out well and in accordance with their roles and responsibilities.

From the measurements that have been carried out, there are 10 findings whose values are below the average value that has been grouped from the three processes, namely problem management, event management and access management. There are 40 recommendations that have been given to the company and feedback has been given from the follow-up or follow-up carried out. Recommendations received by the company will be re-evaluated and used as a reference for controlling the ERP system to avoid data discrepancies. So that the data entered and output will have the same value in each division.

If all the recommendations that have been given and have been accepted by the company are implemented and carried out in accordance with the audit findings, then it is very likely that the company can move up to the next level or level two. However, if the recommendations that have been received by the company are not implemented or are only written without direct practice, it is possible that the level will only stop at level one or there will be no increase in level because re-evaluation was not carried out in accordance with the recommendations that have been given based on the results of the audit findings using the framework. ITIL V3 at Gasindo Group.

From the results of research conducted at the Gasindo Group, it can be concluded that controlling assets in terms of tube numbering can be wrong because the user who handles the data input process often changes. Training should be carried out when determining employee job descriptions according to their respective skills and fields. So, users will focus more on their field according to their expertise. So, if something goes wrong in the tube numbering process, it will be immediately corrected by the responsible user according to the jobdesk received.

CONCLUSION

The Gasindo Group's ITIL V3 framework results indicate that three processes, problem management, event management, and access management, are at level 1 or below 85%. This is due to the implementation of these processes but suboptimal service utilization. The ERP system at Gasindo Group is causing errors in tube numbering, which may not match the input data. To address this, job desks should be divided based on their skills and fields. The company has received 40 recommendations, which will be re-evaluated to avoid data discrepancies. If these recommendations are implemented, the company can move up to level two. However, if not implemented, the level may remain at level one or no increase. Training should be provided to employees to ensure they focus on their respective skills and fields. If a tube numbering process goes wrong, it will be corrected by the responsible user.

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