

ANALYSIS OF INFORMATION TECHNOLOGY SERVICES MANAGEMENT USING THE ITIL V3 DOMAIN SERVICE OPERATION FRAMEWORK ON SIMDA (CASE STUDY: BOYOLALI REGENCY INSPECTORATE)

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Abstract—Boyolali Regency Inspectorate is the Government's Watchdog's Internal Area. The agency implements IT to make easier in managing of information. The system that is applied in Boyolali Regency Inspectorate in the form of a financial information system area (SIMDA) that serves to help the operational work as well as to ease in managing of financial area. However, in the IT operations, there are still constraints at hand such as lack of knowledge regarding the handling of network problems that inhibit operations of SIMDA. Thus, in the use of IT services, the researchers want to analyze the information technology service management using the ITIL V3 domain service operation on SIMDA. Data collection was performed by a descriptive-qualitative method in the form of an interview. The result of the interview shows that the system of services provided was pretty good but there are still problems in failed login due to slow internet connection and the lack of user's knowledge in the IT field. This has effect on operational management of IT services. Thus, this analysis is conducted to help knowing and improving the applied IT service management.

Keywords—ITIL V3, Service Operation, IT Services Management

I. INTRODUCTION

Information Technology (IT) is one of the industrial sectors that are growing so rapidly every year. The rapid development of information technology in Indonesia needs to be balanced with the preparation of reliable human resources to improve IT services because without good human resources, information technology

will not develop as desired. The use of IT in a government institution can be different depending on the capabilities and fields that exist in that institution. A government institution can be in a form of Regional Apparatus Organization of district government, such as the Inspectorate Agency.

Boyolali District Inspectorate is the regional government internal supervisor in which this agency implements IT to facilitate the management of information. The system implemented in Boyolali District Inspectorate is in the form of a regional financial information system (SIMDA) which its function is to assist work operations and facilitate the management of regional finances. However, in the IT operational activities, there are still obstacles encountered in the form of a lack of knowledge about handling of slow network problems and it results the usage of SIMDA cannot be run optimally.

Considering the problems in the use of IT services, researchers want to analyze information management services using the ITIL V3 domain Service Operation framework on SIMDA. The use of IT must be adjusted to the purpose of an organization as its business support. To implement IT, there must be an IT management that functions to maximize IT performance that in turn it will provide benefits to the governmental organizations. This is supported by the existence of government regulations in achieving the benefits of using a good IT. Thus, all government agencies both at the national level and regional level must have good governance as a benchmark for IT management and services. This is supported by the regulation of the Minister of Communication and Information Technology No.41 of

2007 concerning the General Guidance of National CIT Governance [1].

ITSM (Information Technology Service Management) is a method of managing system of information technology in organizations that is centered on the views of customer information technology services in the organizations. ITSM focuses on effort to provide framework for structuring IT-related activities and the relationship between IT managers and IT customers. The framework provided includes COBIT and ITIL [4].

Based on the above problems, it is necessary to analyze an IT service management using the ITIL V3 service domain framework on SIMDA which aims to determine the performance of a system provided by the service provider for customers as well as to know the weaknesses of the system. The benefits of this study are to find out the management and condition of IT services that are implemented in the current Inspectorate and to provide recommendations related to IT services in accordance with the ITIL V3 domain service operation framework to minimize weaknesses and shortcomings of the system.

II. LITERATURE REVIEW

The first study was a journal entitled “Analysis and design of desk service management in governmental agencies” (case study: agricultural R&D agency). This study discussed about the design of desk service management as standard of incident handling related to IT services. The research method used was Mixed Method with Sequential Exploratory Design strategy and the results of the analysis produced a desk service management design that refers to the Framework of Information Technology Infrastructure Library (ITIL) and four main components, namely people, process, technology, and information [2].

The second study journal entitled “Designing of information technology service management using the V3 domain service transition and service operation in Bandung city government”. This research was conducted with the aim of making procedures and policies so that the services provided by the Communication and Information Service Office of Bandung City were always maximal. This study was conducted using ITIL V3 in the Service Operation and Service Transition domains. The results of this management design is that the ability to manage IT services in Bandung City Government was found at Level 1 with partially achieved and with value of 24.5% in Service Transition and 23% in Service Operation. In addition, it also produced 16 documents, namely 1 document of IT policy recommendations, 5 SOP documents, and 7 supporting documents for IT policies related to ITIL as priority [3].

The third journal entitled “Analysis of the quality of information technology services by using the v.3 (ITIL

V.3) information technology infrastructure of library domain service transition framework” (a case study in the customer service area of Salatiga Telkom). The study was conducted with aims to find out the role and quality of information technology in the customer service system and this study used qualitative methods to obtain results on the object of research using the V.3 ITIL service transition framework. The results of this study indicated that the office of CSA (Customer Service Area) basically had run the service transition process as one of the processes or domains in V.3 ITIL [7].

The research carried out by aims to analyze ITSM to find out the development of Helpdesk information system at PT Len Industri, Ltd, which was one of the state-owned enterprise. The helpdesk service provides repairs on hardware, software, and networks. The problems found in this case was the difficulty in monitoring and evaluation carried out by the helpdesk admin and information system manager. To overcome this problem, a system was designed using ITSM with the ITIL V3 framework by conducting visits to ensure the usefulness of the system by obtaining an overall score of 88.89% in the user interface aspect and 83.715% in the functional requirement of information system aspect [11].

ITIL (Information Technology Infrastructure Library) is a framework that describes the best practice of IT management services. ITIL provides a framework for IT Management and improves the quality of provided IT services.

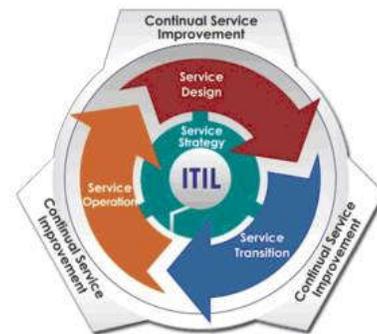


Fig. 1. ITIL V3 [9]

In ITIL V3 there are 5 (five) sections that emphasize the management of service processes provided by the information technology.

III. METHODS

This study uses a qualitative-descriptive method that will produce research in the form of a description of the problems based on facts. The research stages are as follows:

A. Introduction

In the introduction stage, the researchers began to make preparation which the researchers made a prior

permission letter before conducting the research to the parties concerned in the case of this research, i.e. the Inspectorate of Boyolali Regency.

B. Literature review

At this stage, the researchers searched and read reference books such as journals and related materials related to the theme that was being taken and mostly searched for several literature studies related to the ITIL V3 Domain Service Operation framework in order that those references would improve knowledge to solve problems at hand.

C. Data Collection Process

At this stage, the researchers conducted the data collection process which the researchers prepared and planned questions for the interviews to the employees concerned with SIMDA. These interviews were conducted with 3 speakers:

- 1) Suhardini, SE: As a user of SIMDA and financial system data management
- 2) Pramono, A.Md: As SIMDA admin
- 3) Eko Nugroho, A.Md: As SIMDA network admin

D. Data Processing and Data Analysis

At this stage, the researchers conducted data processing and data analysis which the results of the interviews will be processed by using the ITIL V.3 domain service framework operation where the data obtained would be used to describe the existing problems. The explanation for the following sub domain is taken from the service operation: (1) *Event Management*: it monitors all events that occur throughout the IT service infrastructure. (2) *Incident Management*: this is the process that focuses on restoring service failure as quickly as possible if a problem occurs so as to minimize the impact of losses on the business. (3) *Request Fulfillment*: this is the process of handling service requests, where a separate process is used to meet the demand requirements of service users in accepting service standards. (4) *Problem Management*: it analyzes problems and resolving the causes of incidents that occur in the IT infrastructure. (5) *Access Management*: it is the process of granting access rights for those who are entitled and provide no access to parties who are not interested in using IT services.

E. Conclusion

At the conclusion stage, the researchers gave recommendations from the results of the analysis in accordance with the findings.

IV. RESULTS AND DISCUSSION

A. Event Management

Event management is about changing conditions that have meaning for the management of configuration items or IT services [5]. And it is a process within management to control IT operations which includes monitoring, surveying and evaluating all processes that

occur within the IT infrastructure to find out the preparations for handling obstacles that might occur. The purpose of event management is to find out and detect any possible problems. Based on the results of the interviews, the following is the statement from EkoNugroho, "We use the Mikrotik for the network. We use Mikrotik to monitor the network via Winbox. From the Winbox, we can observe the traffic. So, for example, if there is a problem that someone can't log in, there is a log for that event, then for those who can't log in they will be marked as red login in the log. Then we can help this issue using Team Viewer or similar program to monitor the network". From his statement, it can be seen that monitoring had been carried out regarding the service operations provided using Winbox to record the problems that occurred, so that if an error occurs done by the user, the admin can find out the problem and observe what is happening. The next question is about monitoring the system based on the results of interview with EkoNugroho. He said, "yes ... every morning as soon as I arrive at the office, I always check the Winbox to see whether it connects or not, at least whether it can connect with the server or not. If not, it means that I need to wait for a complaint from SKPD. After it is confirmed that it can't connect then I will assist them to solve this problem." From that statement, it can be concluded that so far the BKD had fully carried out the event management process, and every day monitoring is made in order to find out whether the service is operated.

B. Incident Management

Incident management is an unplanned problems in IT services, or it is a decrease in the quality of IT services [5]. This management process focuses on improving services affected by unexpected events and how to deal with these problems in order to minimize the obstacles that occur in these technology services. The aim is to restore normal service activities as quickly as possible [5]. Based on the results of the conducted interview, the following is the answer from EkoNugroho "Once, as the provider from solo, we experienced a power failure or maybe there was a problem on the radio which was indicated by its low quality and slow connection... but now the agreement is that in 24 hours we must finish in handling the problems." From that answer, it can be concluded that the system had experienced an error because the connection was slow. In this domain it was found that SIMDA had experienced problems, such as power disruption from the provider that resulted SIMDA experiencing a slow connection. These problems have made the system's performance unstable. Seeing this, the domain was somewhat lacking and must be repaired. If it was not immediately fixed, especially from the provider, it would hamper the service of the system. In addition to these problems, there was a problem regarding the failure of login due to network problem as conveyed by Suhardini as the user of SIMDA services. She said, "So far ... I have just become

the treasurer from the early June until now. When I fail to login, I guess it is because the internet is so slow”From that answer, it can be concluded that so far there has never been a service down in the system but she experienced the problem regarding failed login because of the slow internet. *“Yes ... while I was in the office there were Wi-Fi of landline and cellular Wi-Fi. If both of them suddenly stopped, I just need to wait for them to go smooth again”*. From the answer, it can be seen that the Inspectorate has not been able to handle the problems as quickly as possible because of the lack of knowledge in the IT field.

The handling of incident management on this SIMDA system can be seen from daily handling in backing up data to anticipate undesirable events when a system failure occurs based on the interview with Eko Nugroho. He said, *“Here, the backup is made automatically ... 3 times a day at 6, at 12 pm and in the afternoon. Pram always makes an automatic backup by himself and sometimes he also has manual backups which he makes a manual backup for himself and accounting backup that made by the admin at the accounting department and also made by me.”*

There were also incidents that had occurred to the server. Based on the interview with Eko Nugroho, he said, *“Seeing that hardware is separated from software, once we experienced a problem on hardware which the server was hit by lightning ... but thank God ee ... the hard drive was still intact. Although the physical server can't be used anymore but the hard drive can still be saved ... So from software perspective, it seems that up to now it has run smoothly and there is no problem ... so generally we do have a problem”*. From the answer, it can be concluded that the system had never experienced a serious problem but the problem was only with the server that was hit by a lightning strike but this affected only on the physical condition.

C. Request Fulfillment

The request fulfillment management is a request process from technology service users. The aim is to enable users to request and accept service standards, and enable the source to provide information to users and customers about service procedures, and to assist with general information, complaints and comments [5]. Based on the interviews conducted with Eko Nugroho, he said, *“Yes, there are complaints from users of features but we can't change anything because the application comes from the main office”*. From the result of the interview, it can be concluded that so far BKD as the party who maintained the SIMDA system had received complaints from users about some features but the BKD cannot change the application for it was provided from the main office. So it can be concluded that the BKD did not apply the service request from users because it did not have the right to change the service without command from the main office.

D. Management Problem

Problem management is the process of identifying problems that arise directly. The aim is to prevent problems and consequences of incidents that occur, to eliminate recurring incidents and minimize the impact of those incidents that cannot be prevented [5]. Based on this interview, there is question about how to recover damaged/disrupted services due to network problems that interfere with the performance of the system. Eko Nugroho said, *“At least when the user experiences errors, he sends the screenshot of the error. Then I just open the team viewer to solve it”*. From this answer, it can be concluded that in this sub-process, the process of handling had been carried out in accordance with the ITIL V3 framework. It can be explained that when there is a problem submitted by the user regarding damaged/disrupted services due to network problem, the problem is immediately handled by opening the team viewer.

E. Access Management

Access management is a management process that regulates access rights or granting authority rights in the use of IT services, so that users of these services have their own access rights to anticipate misuse of services provided. The aim is to give the right to users to be able to access services or groups of services, while preventing access for non-authorized users [5]. Based on the result of the interview, Pramono said, *“If we make the user's access rights more specifically as inter-SKPD, then one SKPD will not be able to open another SKPD.”* Based on his explanation above, it can be concluded that there is information security system in the use of the SIMDA system that access rights are given to each user as the right of user authority in accordance with the scope of user's work. In addition, as for the result of interviews conducted with Suhardin regarding the user's access rights, she said, *“In the application, I'm not sure about the feature to change the password, but so far, user and password has never been changed from the previous treasurer to the current treasurer.”*

F. Gap Analysis (GAP Analysis)

Gap analysis is a method to find out gaps in business and to determine what steps need to be taken to move from the current conditions to the desired conditions or desired future conditions. This gap analysis plans what needs to be done to eliminate the gap between the specifications of service quality and service delivery to customers.

The following is the Table of Gap Analysis:

TABLE 1. GAP ANALYSIS

Process	Current condition	Impact	Proposition
Incident Management	There are still incidents impacting the business processes.	If there are still occurring problems and hamper the business processes, it can have impact on the usability of the service that it will not run optimally.	Monitoring the services to find out the condition of services before they are implemented so that fixes can be done before incidents occur.
	The process of incident handling has not been properly done.	Work operation cannot run effectively and efficiently if follow-up actions are not done as soon as possible.	The need to add knowledge about IT management and about how to maximize the handling of incidents based on existing policies.
Request Fulfillment	The release of services still depends on third parties.	If the coordination with the main office is not done quickly, it will interrupt the usage of the existing services.	Maximizing a swift coordination in order that the request of services will be fulfilled sooner and the management of services must be maximized by following the applicable IT management guidance.
Access Management	The process of access rights has not been managed and it will impact on business processes that misused by the unauthorized users who have access rights.	If the old username and password have not been changed, there will be security leaking since the unauthorized persons will know those username and password.	It needs more knowledge owned by human resources about the usage of user's access rights in the IT services.

V. CONCLUSION

Based on the results of data analysis, conclusion can be drawn from the analysis of information technology service management at the Inspectorate of Boyolali Regency on the Regional Financial Management Information System (SIMDA) using the

ITIL V3 domain service framework operation that the provided service system has been performed well but there are still problems regarding the failure to log in caused by a slow internet connection and the lack of users' knowledge in the IT field that affects the operation of IT service management. Thus, it is suggested that the inspectorate to add more capability in human resources, especially in terms of their knowledge about IT in order that this IT knowledge can be used to deal with problems hampering IT operations and by having the knowledge, they can easily and quickly control and overcome problems that occur suddenly.

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