

IMPROVEMENT TO QUALITY OF TELECOMMUNICATION SERVICE BY MINIMIZE FAILURE OF SIMKARI APPLICATION DEVICE (A CASE STUDY IN PT DATALINK SOLUTION)

M. Hudori¹

¹ Department of Logistic Management, Citra Widya Edukasi Polytechnic of Palm Oil, Bekasi
m.hudori@cwe.ac.id

ABSTRACT

PT Datalink Solution is a company engaged in telecommunications that has a variety of projects, including a project information system at the District Prosecutorial in Indonesia. To handle the project required speed in response to any problems that exist in order to avoid failure SIMKARI which can interfere with the activity in the District Prosecutorial. In this case the quality of service should be targeted so as to maintain the cooperation between the two sides. Application of Total Quality Management (TQM), namely through the use of tools of quality control is expected to be able to overcome the problems that occur. The method used is using Pareto diagram to focus issues and use the Fishbone Diagram to determine the root cause of the problem is most dominant. An analysis of the problem carried on most issues can be handled quickly, ie microtic with the root cause of the problem is the most dominant, ie the human factor that needs improvement in these factors need to be prioritized.

Key words: Quality, TQM, Pareto diagram, Fishbone diagram, Microtic.

1. INTRODUCTION

1.1. Background

PT Datalink Solution is a company engaged in the field of information technology to provide a wide range of telecommunication equipment and provide installation services and hardware monitoring services are used by customers. As one of the projects that the company is cooperating with PT Telekomunikasi Indonesia, Tbk in the procurement of some equipment support applications Management Information System Attorney of the Republic of Indonesia (SIMKARI) used by one of the government agencies (OGP), namely: Uninterruptible Power Supply (UPS) and Microtic. In addition, follow-up of the project, ie monitoring and handling the device replacement in case of failure.

In the implementation of the project, the company provides two parts, ie: the monitoring team is in the head office and technicians spread throughout Indonesia. District Prosecutorial monitored totaled 406 points, which are grouped into 33 the State Prosecutorial. Due to the large number of State Attorney, then with the dude monitoring application can be done at the head office does not need to visit the site directly.

The SIMKARI application device is not only using devices that are supplied from PT Datalink Solution only, but other companies also supply the SIMKARI application device. Thus, every company monitors each device.

Therefore, the activities carried out monitoring teams have a major influence in the implementation of this project, so it requires a quick response and good working order SIMKARI applications to function normally without any constraint. If there is failure to one of the devices will interfere with the SIMKARI application process.

Customers would want a device can always run well without disturbing its activity, as operators using the application. Obstacles often occur when the SIMKARI application being used by the operator, such as: can not connect internet, the application can not be opened, can not data entry and can not save the data so that it may interfere with the activity of the operator, such as: can not enter the report, could not be send and receive information from the center. Therefore, it is necessary to study in order to minimize damage to devices such SIMKARI application so as to reduce the cost of device repair and achievement of customer satisfaction.

1.2. Problem Statement

Based on the results of the identification of the problems mentioned above, it can be formulated problem in this study, ie what is most dominant device failure, what the cause of the failure and what is the solution?

1.3. Research Purpose

The purpose of this study was to determine the most dominant failure, cause of the failure and find a solution.

1.4. Limitation of Problem

As the boundary problem is given in this study are as follows: 1) the research done through the existing data in the head office; 2) the product is observed telecommunication device to support SIMKARI application service; 3) root cause analysis performed on the factors that affect the failure of device; 4) solving priority on issues that can be resolved; and 5) the proposed improvement is given only to factor in the analysis.

1.5. Assumption

The assumptions used in this study are as follows: 1) the condition of the device microtic extinguished; 2) devices that were failure will be replaced directly; 3) costs in one trip Rp 200,000; and 4) microtic price is Rp 500,000/pcs.

2. THEORETICAL BACKGROUND

2.1. Telecommunication

Usman (2010) has said that telecommunication is the exchange of information (deformation information) on a long-distance relationship that occurs electronically. Kustanto and Saputro (2015) has said that the computer network is a collection of two or more computers that are interconnected with each other to perform data communication over a communication medium (wired or wireless), so that these

computers can share information, data, work programs and the use of hardware together.

Telecommunication device that will be used to support the SIMKARI application process are: 1) modem is a device used to access the internet directly on the computer; 2) switch is a computer networking device that serves as a connector; 3) microtic is a device operating system, including the software installed on a computer so that the computer can act as the central network; 4) UPS is a tool to save power, so that when power failure suddenly, then the device is attached to the UPS will stay on for some time; 5) unshielded twisted pair (UTP) cable that is used for netting local area network (LAN) on the computer network system; and 6) RJ 45 cable connector which is used to connect a personal computer (PC) to a computer network. Topology of SIMKARI device application can be seen in Figure 1.

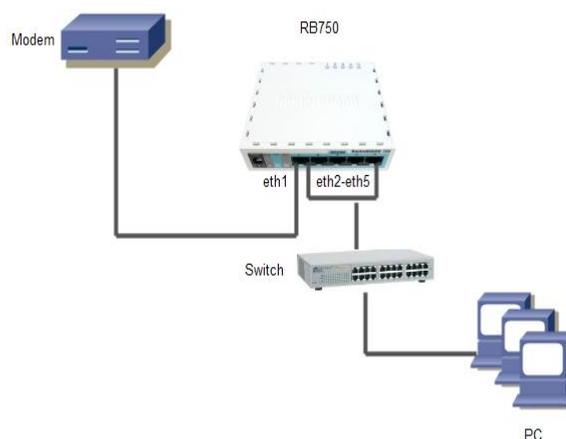


Figure 1. Topology of SIMKARI Device Application

2.2. Quality

Juran and Godfrey (1999) have said that the quality is something that is on the products, which have certain characteristics to meet the needs of customers and can thus provide satisfaction to its customers and with the hope to increase revenue.

Evans and Lindsay (2007) have mentioned that there are three basic principles of quality, namely: 1) a focus on the customer; 2) participation and cooperation of all individuals within the company; and 3) focus on the process that is supported by continuous improvement and continuous learning.

2.3. Total Quality Management (TQM)

Heizer and Render (2005) has said that TQM will refer to the suppression of quality that encompasses the entire organization. TQM emphasizes the management's commitment to get a referral company that wants to achieve continuous excellence in all aspects of products and services, all of which are important to the customer. The tools of TQM that will be used are: 1) Pareto diagram, which is a method for managing defect, problem or disabilities to help focus efforts on problem solving, in which 80% of company's problems are the result of a cause that is only 20%, meaning that this diagram will identify problems that few but critical compared to the problems that many but not essential; and 2) cause and effect diagram, which is a tool to identify root causes of quality problems, also known as Ishikawa diagram, or fishbone diagram, where this diagram will give an overview diagram that resembles a fish bone and each "bone" represents sources of error.

3. RESEARCH METHOD

The data will be used in this study are primary data, ie data obtained directly from the observation and interviews, which form the

District Prosecutorial failure reports and root cause analysis. While the method of data collection are: 1) the method of observation, ie direct observation of the process of monitoring, communication with customers and follow up process the SIMKARI application device failure; 2) interview, which conducted interviews directly with the senior technician; and 3) historical data retrieval methods, ie the search for disturbance report data during the observation period. Data have been obtained will be processed using Pareto diagram to choose the issues to be prioritized solution, then the problem will be analyzed root causes using fishbone diagram.

4. RESULT AND DISCUSSION

4.1. Cause of Device Failure

Based on the data obtained, and after being processed by Pareto diagram, then the interference with the microtic is the most dominant type of failure. Furthermore, this problem that will explore the root cause by using a fishbone diagram, ie as shown in Figure 1.

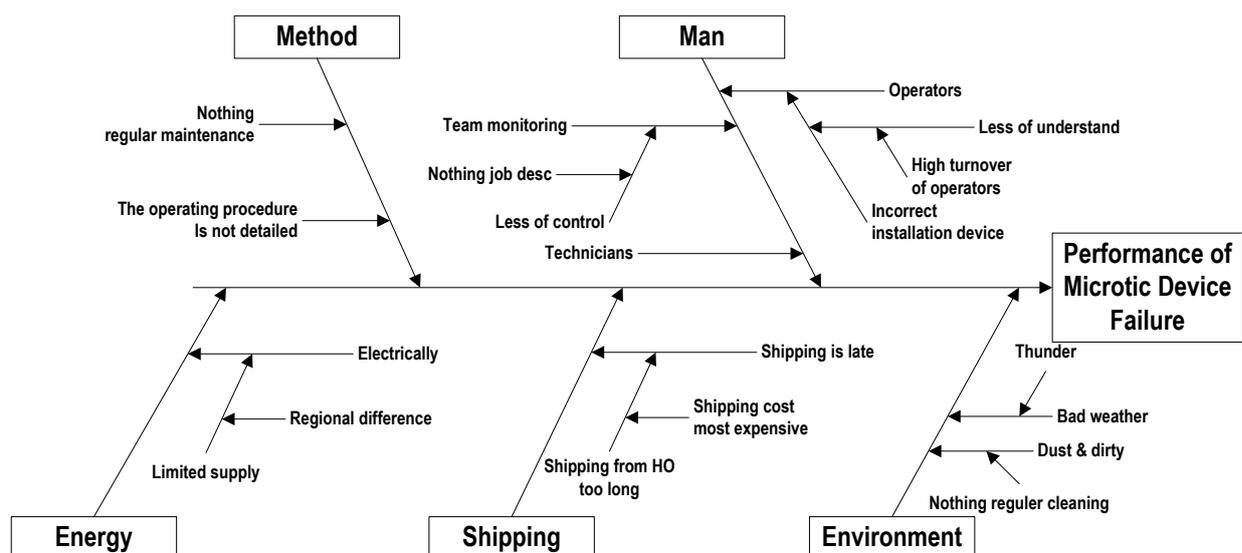


Figure 1. Cause of Microtic Device Failure

From Figure 1 shows that there are four main factors that cause interference with the performance of microtic, ie human, methods, shipping and environment.

The human has become one of the causes interference microtic device performance. This is caused by several factors, ie: 1) The operator did not understand the topology of the device, in which an operator who is a customer would want a device is always able to run properly without disturbing their activities. However, the device failure can occur at any time. High turnover of new operators in each the District Prosecutorial cause the operator did not understand about the topology of the device used. When the operator is conducting its operational activities, computer network used sometimes the access speed decreases or even can not open the application, so that the operator will change the topology of the device with the assumption that the speed of access to the application will increase. After that the operator often can not restore the procedures for initial device setup correctly; 2) Less of coordination between technicians with the monitoring team, where technicians will come to the location of the District Prosecutorial case of microtic device failure and turn of new device, less coordinated with the monitoring team, so that after completion of the turn of, it turns out the device is still in poor condition; and 3) The monitoring team which is part of the monitoring device remotely microtic did the division of labor, so that one individual ignores his job, because it has no sense of responsibility for the team. Thus the follow-up repair device becomes longer.

The methods also be one of the causes interference microtic device performance, which includes: 1) Nothing regular maintenance, where this is one thing that is important to keep the device in order to run smoothly. As long as there is no regular maintenance, where a technician visit to the site just to make the turn of new devices; and 2) The operating procedures device that is not detailed enough to be one cause device. At the time of shipping of the new device as a device substitute to the site, if it is not accompanied by a technician visit, it will usually be attached to the installation manual book. However, in the manual book do not

explain about the device maintenance procedures.

The shipping factor becomes one of the causes interference microtic device performance caused by the high cost of shipping, so that the goods be late in arriving to the destination and repairs also will be longer to do.

The environmental factor has led to the disruption microtic device performance, where this is caused by several factors, ie: 1) The bad weather, which often microtic directly killed by thunder; 2) Dust and dirty caused no cleaning on a regular basis so that dust and dirty will make the air circulation can not get out and will settle on the device and will cause the device to be overheating and will make the device more easily failure; and 3) Less of electricity supply caused frequent power cuts so that the temperature in the room is not suitable as a place of such devices and power supply voltage instability make the device more easily failure.

4.2. Recommendation

Improvements can be made to the human factor, among others are: 1) Reduce the turn of the operators at each location; 2) At the time of technicians perform repairs on-site devices, should not only ensure that the device is running normally at the location, but also coordinated with the monitoring team to ensure that by the monitoring device has been operating normally again; 3) The team leader should make the division of duties of each individual on the team monitoring; and 4) Provide training to improve operator skills.

Improvements in methods and environmental factors by adding guidelines for the care and placement of the device at room temperature for the microtic, ie with the sentence: "1) DO CLEANING FROM DUST AND DIRTY ARE PERIODICALLY; 2) ROOM TEMPERATURE -30 TO 70°C; 3) TURN OFF DEVICE IN CASE OF THUNDER".

Improvements to the microtic device shipping factor should not just in one location of Distric Prosecutorial, but also forwarded to other nearby locations to serve as a backup.

So to fix the waste, human factor need to be in priority.

5. CONCLUSION

Based on the above discussion, it can be concluded that performance of the microtic device failure constitute the most dominant. The root cause is the human factor, method, shipping and the environment. Solutions to these problems are: 1) Reduce the turn of the operators at each location; 2) Technicians coordinated with the monitoring team to ensure that by the monitoring device has been operating normally again; 3) The team leader should the make the division of duties of each individual on the team monitoring; 4) Provide training to improve operator skills; 5) Adding guidelines for the care and placement of the device at room temperature for the microtic; and 6) Forwarded to other nearby locations to serve as a backup.

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AUTHOR BIOGRAPHIES

M. Hudori is a lecturer in Department of Logistic Management, Citra Widya Edukasi Polytechnic of Palm Oil, Bekasi. He received his Bachelor of Industrial Engineering from Sumatera Utara University in 2001 and Master of Industrial Engineering from Mercu Buana University in 2015. His research interests are in the area of Production Planning & Control and Quality Control. His email address is m.hudori@cwe.ac.id