
Designing Standard Operating Procedures (SOP) with PDCA Method on Kaconk Flasher Gadget Repair

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ABSTRACT

Purpose: This research aims to find solutions to the causes of problems in terms of quality experienced and produce business process SOP for Kaconk flasher services.

Design/methodology/approach: The draft SOP comes from operating standards that have been agreed upon through FGD and is revised based on the results of the known improvement plan, so that the draft SOP is more perfect before being frozen into a written SOP. Validation of the draft SOP document was carried out by giving questionnaires to customers with a sample size of 13 respondents, namely kaconk flasher customers who visited one week after the implementation of the draft SOP to be tested.

Findings: The results of this research show that: Designing SOPs for the kaconk flasher business process, a number of SOPs can be formed which are grouped into several stages, including KF-SOP-01 regarding customer reception services, KF-SOP-02 regarding gadget repair, KF-SOP-03 regarding unit storage in the warehouse, and KF-SOP-04 regarding unit pick-up services.

Research limitations/implications: The limitations in this research are the basis for recommendations for future researchers to further develop improvements to the SOP that has been formed from the problems experienced. The limitations of this research are only to find out the root of the problem and its repairs and form an SOP from the results of repairs that have been carried out at the kaconk flasher counter.

Practical implications: All SOPs were implemented successfully and were able to overcome the root of the problem at the Kaconk flasher service center.

Originality/value: The research carried out by the researcher states that this research is the result of his work and is the first time at Konter Kaconk Flasher with the title of the research being researched, except for quotations from several summaries, all of which the researcher has explained the source.

Paper type: Research paper

Keywords: *Standart Operating Procedures (SOP), Service Quality, Gadget Repair, Customer Satisfaction.*

Received : November 4th

Revised : February 18th

Published : March 31th

I. INTRODUCTION

Indonesia is included in the list of 10 countries with the most gadget sales in the world, among others ranked first is Brazil with 47 million sales and 38.2 million new users, Indonesia with 46 million sales and 39.8 million new users, Russia with 31 million sales and 21.4 million new users, Japan with 30 million sales and 22.9 million new users, Mexico with 23 million sales and 16.3 million new users, Germany with 22 million sales and 12.2 million new users, France with 18.7 million sales and 11.21 million new users, and lastly the UK with 17.7 million sales and 8.24 million new users (Iskandar, 2014) in (Alifiani et al., 2019).

According to the e-Marketer market research institute, active gadget users in Indonesia will grow from 55 million people in 2015 to 100 million people in 2018. As the use of gadgets continues to increase, more and more service businesses in gadget repair are operating. In the process of developing a business, customer satisfaction is the main factor in maintaining and increasing market share in the gadget repair services industry. Customer

satisfaction has long been a key factor in the success and survival of businesses in various industrial sectors. In an increasingly competitive and rapidly changing business environment, maintaining and increasing customer loyalty is more important than ever (McNeil & Young, 2019). The two main elements that significantly contribute to customer satisfaction are the quality of service and the quality of the products provided by the company (Aghamohammadi-Bosjin et al., 2019).

Service quality covers all interactions between the company and the customer, from the first time the customer interacts until after the sale or service is provided (Chang et al., 2021). Factors such as ease of communication, responsiveness, speed of service, and willingness to help play an important role in creating a positive experience for customers in providing quality service (Supriyanto et al., 2021). Customers tend to feel more satisfied when they feel they are treated well and the service provided meets or even exceeds their expectations (Hidayati, 2022).

On the other hand, product quality refers to the product's ability to meet customer needs and expectations (Mahesa, 2022). A quality product will have features that function well, are durable, and provide the promised benefits. And product quality refers to the reliability of repairs performed, the durability of the device after repair, and the end result that meets customer expectations (Cao & Zhang, 2020). When customers feel that the products they receive are of high quality, they will feel more satisfied and tend to become loyal customers (Li et al., 2020).

Based on an initial survey at the Kaconk Flasher service center in developing its business, there was a decrease in the number of incoming customers due to a decrease in customer satisfaction. The following is the number of customers who entered to repair gadgets on Kaconk flashers.

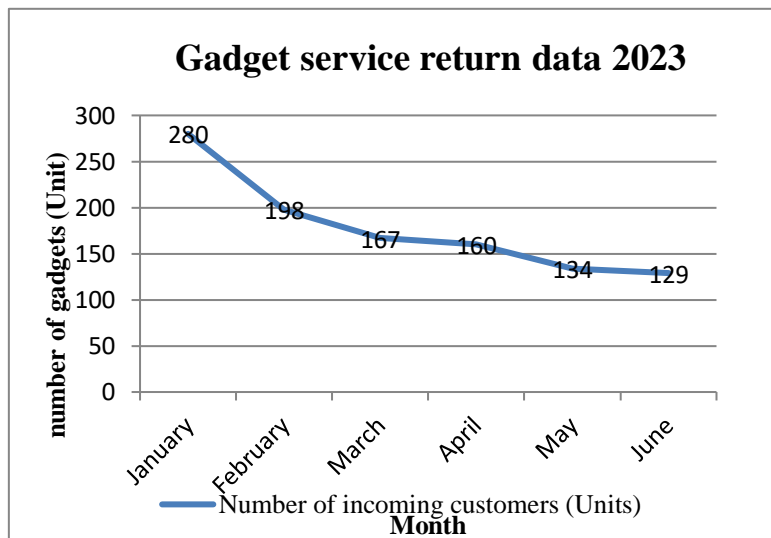


Figure 1. Customer data entering Kaconk Flasher 2023

Based on the data above in Figure 1, it is known that the number of customers each month has decreased. From January to June the number of customers, which was originally 280 people, became 129 people. After conducting an initial survey, there were several things that caused the number of customers to decrease every month, this was the lack of customer satisfaction with the service and results of gadget servicing provided by Kaconk Flasher.

The service provided by Kaconk Flasher employees is still not optimal, even the results of gadget servicing that has been carried out often result in the same damage occurring again. This problem arises because there is no quality control system for the services and repairs carried out by Kaconk Flasher. To guarantee and control quality in the kaconk flasher service business process, a continuous quality control system is needed in the kaconk flasher business process activities. Kaconk flasher still does not have standard operating procedures that can be applied properly, so employees only carry out service and repair procedures based on experience. This causes variations in procedures among employees. The development and use of SOP can minimize output variations and improve quality through consistent implementation of processes or procedures within the organization (Teplov et al., 2019). Planning SOP that are applied to the kaconk flasher business process, it is hoped that this service business will have a guideline to be able to implement good business processes, so that it can produce quality services and repair processes.

From the above background, the researcher formulated the problem to be studied, namely how to design a Standard Operating Procedure (SOP) for the kaconk flasher business process using the plan, do, check, act (PDCA) approach so that it can increase customer satisfaction. The PDCA stages start from planning improvements, implementing improvement plans, checking plan results and corrective action on the results obtained in the form of standardizing business process procedures in the form of Standard Operating Procedures (SOP) which can be implemented at the Kaconk flasher (Rahmaningias & Hati, 2020). Standard Operating Procedure (SOP) is basically a guideline that contains standard operational procedures within an organization which are used to ensure that all decisions and actions as well as the use of process facilities carried out by people within the organization run effectively and efficiently (Wagner, 2020). The aim of this research is to find a solution to the causes of problems in terms of service quality and gadget repair, to produce an SOP for the kaconk flasher service business process through the PDCA approach so as to increase customer satisfaction.

II. METHODS

The sampling used to test the implementation of the SOP was customers who entered when the draft SOP was implemented on Kaconk Flaher, namely on 01 – 09 December 2023, totaling 13 customers. The sampling technique used is systematic sampling, namely selecting samples in a structured way, for example by taking each person from a customer list which is sorted chronologically or alphabetically (Arisa, 2019).

Research instruments are tools used to collect data in a study (Lin et al., 2021). The instruments used in this research include: 1. Questionnaire: These questions were designed in the form of a questionnaire and evaluated using a Likert scale which has a value ranging from 1 to 5. The values on this Likert scale have the following meanings: 1 = Very Dissatisfied, 2 = Dissatisfied, 3 = Neutral, 4 = Satisfied, and 5 = Very Satisfied. 2. Interview text. 3. Documentation. 4. Observation.

The data collection methods used in the research were interviews with owners, employees and 13 Kaconk Flasher customers to obtain information relating to the data that will be used in the research, analyzing documents or data recordings that already exist on the Kaconk Flasher, observing directly in situations that exist. observed to obtain data, carry out quality improvements using the PDCA approach.

Researchers use the plan, do, check, act (PDCA) method to analyze the root of the problem and improvements to be made. The PDCA stages start from repair planning, implementing the repair plan, checking the results of the plan and corrective action on the results obtained in the form of standardizing business process procedures in the form of a Standard Operating Procedure (SOP) which can be implemented at the Kaconk flasher service center.

III. RESULTS AND DISCUSSION

A. Results

1. Working procedures with FGD

A focused discussion group (FGD) was carried out which was attended by the owner and employees. FGD are carried out to collect accurate data and information regarding service problems complained about by customers through group discussions (Yulianti, 2021). The aim of conducting an FGD on kaconk flashers is to obtain a joint work procedure that is agreed upon by all related parties (Yunita, 2019).

Topics discussed	FGD results
Stages of customer reception service	<ul style="list-style-type: none"> a. Customer service must be friendly and smiling. b. Administration records the completeness of the unit/goods with any damage c. The technician estimates the cost of damage according to the price of spare parts and service costs d. The technician will repair the unit if there has been confirmation regarding the customer's ability to pay for the costs. e. QA is responsible for the quality of units that have been repaired before entering the warehouse f. If there is a discrepancy in the repair results, QA is obliged to return it to the technician along with a note of the discrepancy. g. The warehouse sorts after repair units according to the date of entry.
Stages of gadget repair	<ul style="list-style-type: none"> a. The technician checks the unit for damage using the PSU that has been provided to measure how many amperes the unit is performing. b. Check the damaged components after identifying the damaged area using an avometer. c. Technicians are required to record component damage and the size of the damaged component for replacement. d. QA/QC checks the technician's work again for normality of the unit after repair. Must validate repair results in the repair validation book e. The warehouse officer places the repaired units according to the date of entry and combines them with the receipt. f. After repairs are completed, technicians are required to maintain the 5S culture. And responsible for the tools provided. g. The blower temperature must be maintained at 340 degrees Celsius and the solder temperature at 375 degrees Celsius..
Stages of storing the unit in the warehouse	<ul style="list-style-type: none"> a. After the unit has been checked and validated by QA, the unit is then recorded in the entry book along with its completeness. b. The warehouse neatly arranges the units that have been serviced on the table shelves provided and classifies them based on the receipt date. c. The warehouse ensures that every unit in the warehouse must be in the off position.
Stages of unit pickup service	<ul style="list-style-type: none"> a. Customer service must be friendly and smiling. b. Administration checks the receipt and confirms warehouse assignment c. Warehouse officers are required to check the goods that have been taken from the warehouse. d. QA is responsible for the quality of the unit that has been repaired before it is handed over to the customer e. If there is a discrepancy in the repair results, QA is obliged to return it to the technician along with a note of the discrepancy. f. Admin officers are required to match unit equipment and receipts as well as costs incurred by the customer. g. The cashier must provide a receipt and proof of the customer taking the unit h. The cashier fills in the service unit expenditure list data on the computer.

Figure 1. Results of FGD Business operation procedures at Kaconk Flasher

2. SOP results and respondent's response

No	Activity	Executor				Standard quality			Note
		CS	Admin	QA/ warehouse	Technician	Completeness	time	output	
1.	Customers come, Customer Service officers are obliged to welcome and serve them. Ask about needs and complaints about damage to gadget units.						1 minute	Know the purpose of customers who come	
2.	The attitude of officers in providing customer service must be polite, friendly and smiling.							Customers are not disappointed	
3.	Analyze damage, estimate damage costs according to spare part prices and service costs, provide estimated repair time					Gadget units	5 minute	Find out the damage to the gadget unit, determine the service price and service time	
4.	Officers are required to record the completeness of the gadget unit and its damage in the customer's book and receipt					Pattern/pin, accessory unit	1 minute	Incoming customer data is registered in the administration system	
5.	Enter the customer's gadget unit data into the RMB Kaconk flasher application.					Name, whatsapp number	2 minute	Send notification to customers that the unit has entered the repair process	
6.	Ensure customers get receipts						1 minute	proof that the unit was serviced at Kaconk flasher.	
7.	Confirm with the customer the estimated time required to repair the unit.							Customers understand the estimated time promised	
8.	Say hello and thank the customer when the service is complete							Customer satisfied	

Figure 2. Draft SOP for customer reception service stages

No	Activity	Executor				Standard quality			Note
		CS	Admin	QA/ warehouse	Technician	Completeness	time	output	
1.	Mark the name on the unit using sticky paper						1 minute	There is no error on the customer unit	
2.	Check the unit for damage					PSU, Ampere detector device	2 minute	Know the initial indications of damage to which part	
3.	Check for damaged components using an avometer					Avometer	30 minute	Find out damage to gadget units, service prices and service times	
4.	Record component damage and size of damaged components for exchange						1 minute	Issuance of spare parts regularly and recorded	
5.	When removing SMD type components, you can adjust the temperature and wind settings on the existing blower according to your needs						3 minute	Speed of component removal	
6.	When installing IC technicians are required to use a blower with a temperature of 340° wind 15						5 minute	The IC does not overheat which causes the IC to die	Settings according to IC conditions
7.	You must pay attention to the processing time with the estimated time that has been promised to the customer.							There was no delay	If there are problems, please confirm them immediately with the customer
8.	Use tin with a temperature of 168° for CPU IC and EMMC. And 138° for other components and IC							So that the components can be strong when installed	
9.	Check the work again for normality of the unit after repair. Must validate repair results in the repair validation book						1 minute	The unit must be in normal condition	If there are problems, return it to a technician
10.	After the repairs are completed, it is mandatory to maintain the 5S culture. And responsible for the tools provided						5 minute	Always neat and clean	

Figure 3. Draft SOP for repair stages

No	Activity	Executor				Standard quality			Note
		CS	Admin	QA/ warehouse	Technician	Completeness	time	output	
1.	The unit is recorded in the warehouse entry book along with its equipment.			□ ↓			1 minute	Warehouse income data is more controlled	
2.	Arrange neatly the units that have been serviced on the table shelves provided and classify them based on the receipt date			□ ↓ □ ↓			2 minute	Neat and organized according to date	
3.	Make sure every unit in the warehouse is in the off position			□			1 minute	Units are safe	

Figure 4. Draft SOP Stages of unit storage in the warehouse

No	Activity	Executor				Standard quality			Note
		CS	Admin	QA/ warehouse	Technician	Completeness	time	output	
1.	Customer service must be friendly and smiling	□ ↓						Customers are not disappointed	
2.	Questioned need.	□ ↓						Know the customer's goals	
3.	Check the note and confirm	□ ↓					1 minute	So that there are no mistakes	Admin and warehouse confirmation
4.	Ensure the unit is still available and complete			□ ↓			1 minute	According to the note	Checklist that has been taken
5.	Responsible for the quality of the unit that has been repaired before it is handed over to the customer			□ ↓ □ ↓			2 minute	No damage	If there is any damage, return it to a technician
6.	The officer is obliged to match the unit equipment and receipts as well as the costs incurred by the customer.		□ ↓				1 minute	No mistake	Write down the unit pickup history
7.	Must provide a receipt		□ ↓				1 minute	Proof of collection	Input retrieval data in RBM
8.	Say hello and thank the customer when the service is complete	□						Customers are satisfied	

Figure 5. Draft SOP for unit pick-up service stages

Table 6. respondents' responses regarding satisfaction with the Kaconk flasher

Factor	Statement	STP	%	TP	%	N	%	P	%	SP	%
Service	Kaconk flasher staff's friendliness	0	0,00	0	0,00	1	7,69	3	23,08	9	69,23

	<i>Service responsiveness to customers</i>	0	0,00	0	0,00	2	15,38	2	15,38	9	69,23
	<i>Kaconk flasher staff communications</i>	0	0,00	0	0,00	1	7,69	2	15,38	10	76,92
	<i>Speed of resolution of cellphone repair problems</i>	0	0,00	0	0,00	1	7,69	1	7,69	11	84,62
	<i>Solutions provided by Kaconk flasher for unit problems</i>	0	0,00	0	0,00	2	15,38	2	15,38	9	69,23
	<i>The quality of the unit after repair is as expected</i>	0	0,00	0	0,00	2	15,38	8	61,54	3	23,08
	<i>Durability of spare parts provided by Kaconk flasher</i>	0	0,00	0	0,00	1	7,69	9	69,23	3	23,08
<i>service results</i>	<i>Quality of replacement product (if any)</i>	0	0,00	0	0,00	2	15,38	7	53,85	4	30,77
	<i>HP performance after repair</i>	0	0,00	0	0,00	0	0,00	8	61,54	5	38,46
	<i>Quality of cellphone accessories offered</i>	0	0,00	0	0,00	1	7,69	7	53,85	5	38,46
	<i>Price paid</i>	0	0,00	0	0,00	1	7,69	8	61,54	4	30,77
	<i>Comparison of price with the quality of service received</i>	0	0,00	0	0,00	0	0,00	10	76,92	3	23,08
<i>price</i>	<i>Service cost transparency</i>	0	0,00	0	0,00	0	0,00	11	84,62	2	15,38
	<i>Service package payment options by kaconk flasher</i>	0	0,00	0	0,00	1	7,69	12	92,31	0	0,00
	<i>Price of accessories used to complete the unit</i>	0	0,00	0	0,00	0	0,00	13	100,00	0	0,00
	<i>Waiting time to get an appointment for service</i>	0	0,00	0	0,00	0	0,00	4	30,77	9	69,23
	<i>The speed of the service process for the unit provided</i>	0	0,00	0	0,00	1	7,69	2	15,38	10	76,92
<i>time</i>	<i>Kaconk flasher's compliance with the promised deadline</i>	0	0,00	0	0,00	2	15,38	0	0,00	11	84,62
	<i>The estimated repair time that Kaconk flasher provides</i>	0	0,00	0	0,00	0	0,00	1	7,69	12	92,31

*is maximum, depending on
the difficulty of the damage
to the unit*

<i>Kaconk flasher service schedule flexibility</i>	0	0,00	0	0,00	0	0,00	6	46,15	7	53,85
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B. Discussion

Improvement plans are then made by preparing SOP in the PDCA cycle, where PDCA is planning followed by action and providing feedback to standardize the most effective method (Mahmud, 2019).

1. Plan

- a. Identify the root of the problem with FGD and improvement

The results of the Focus Group Discussion with 4 employees who attended on January 16 2024 discussed the problem of decreasing service quality from the Responsiveness factor which was caused by several things, namely humans, systems, machines and methods (Pranadipta, 2020). The results of the discussion on identifying the root of the problem can be detailed as follows:

1) Human factors

The root of the problem from human factors related to the lack of fast service provided by the kaconk flasher counter can involve various aspects, including:

- a. Lack of employee skills and training
- b. Inability to assess and diagnose problems
- c. Lack of communication with customers
- d. Lack of motivation
- e. Insufficient current knowledge
- f. Inability to resolve customer complaints
- g. High workload

To address the root of the problem, kaconk flasher counters can strengthen employee training, improve communication with customers, and ensure that employees are always updated with the latest developments in the world of gadget technology. Apart from that, it is also necessary to pay attention to aspects of employee motivation and manage workload wisely.

2) System factors

The root of the problem from system factors related to the lack of fast service provided by the kaconk flasher counter can involve various aspects, including:

- a. Inefficient queuing system
- b. Inability of recording and monitoring systems
- c. Lack of automation system

Addressing the root of system-related problems requires evaluation and improvement in the design, implementation and maintenance of the system used by the kaconk flasher counter. Technology updates, good system integration, regular maintenance, can help increase efficiency and speed of service.

3) Machine factor

The root of the problem from machine factors related to the lack of fast service provided by gadget service counters can involve several technical aspects, including:

- a. The machine's inability to handle high volumes of work
- b. Lack of engine reliability
- c. Insufficient equipment
- d. Hardware incompatibility with the latest technological developments
- e. Lack of machine maintenance

To overcome the root of problems related to machine factors, it is necessary to evaluate and update the hardware, carry out regular maintenance, and invest in technology that is in line with the latest needs and developments. Thus, the flasher counter can increase the speed and efficiency of technical services to customers.

4) Method factors

The root of the problem from method factors related to the lack of speed of service provided by the kaconk flasher counter involves various aspects in operational and management methods, including:

- a. Inefficient service processes

- b. Lack of standardization of procedures
- c. Too much use of manual methods
- d. Lack of customer prioritization strategy
- e. Lack of innovation in service methods

To overcome the root of the problem related to method factors, kaconk flasher counters need to carry out a thorough evaluation of their operational processes, implement clear standard procedures, update methods with the latest technology.

b. Draft SOP

The SOP design originates from the results of improvements made to the responsiveness factor which is then described through a workflow which aims to speed up employee performance in providing fast service (Freeman, 2021). The following is the service workflow for the Kaconk flasher:

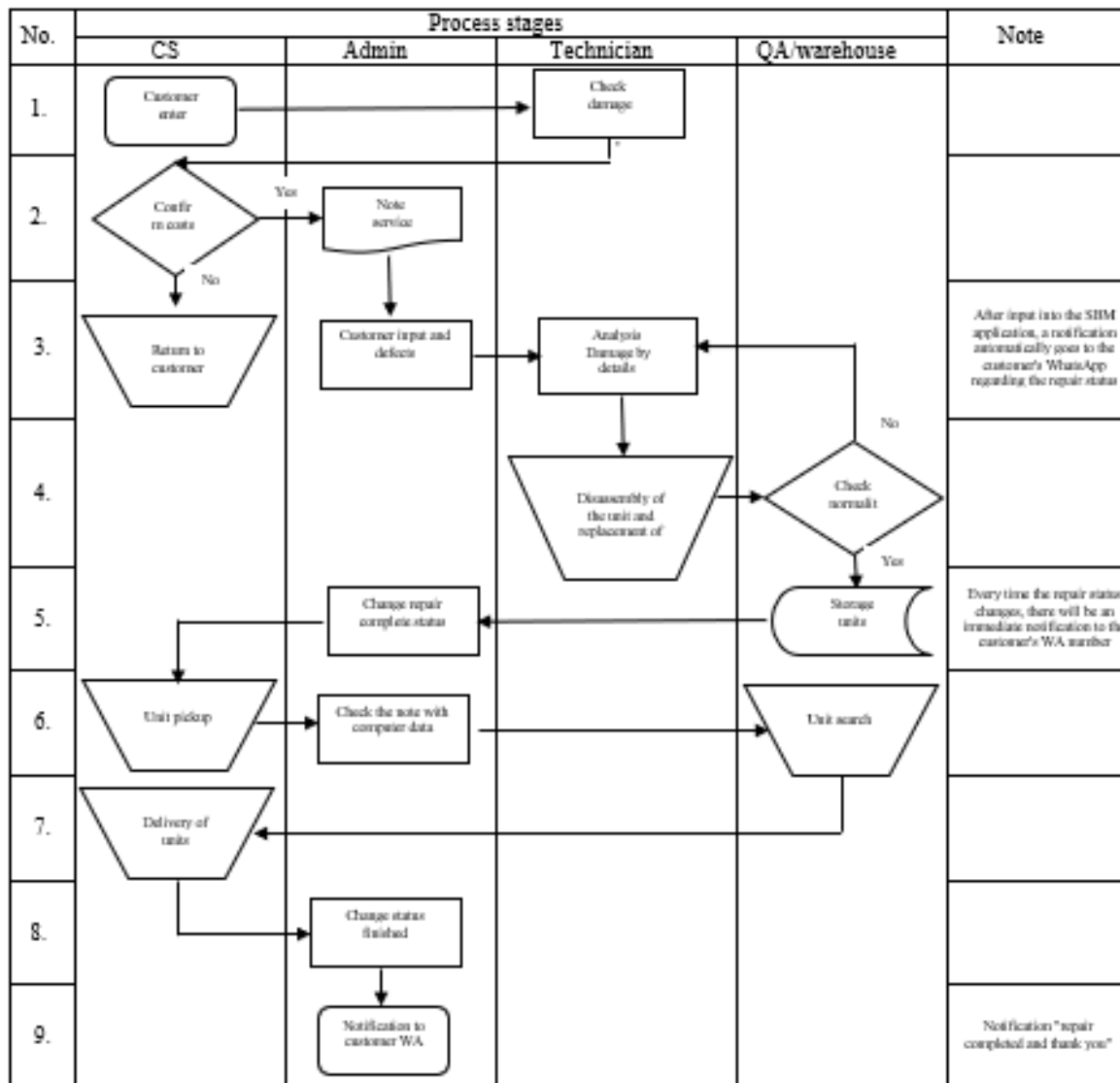


Table 7. Service workflow at the Kaconk flasher counter

c. Do

After the plan stage, the next step in PDCA is the do stage. In this stage, a trial of the procedure that has been established by Kaconk Flasher is carried out in the next few days. The procedure used is the initial design of the kaconk flasher service business process procedure which was previously prepared at the plan stage. This trial will be carried out at Kaconk Flasher on 01 - 09 December 2023 involving all Kaconk Flasher employees.

From the results of testing Kaconk flasher business process procedures, in general the initial SOP design which includes customer reception service stages, gadget repair stages, unit storage stages in the warehouse, unit pickup service stages, environmental cleanliness stages and spare part purchasing stages can be implemented at the Kaconk service center flasher. Everything ran smoothly and normally as usual without any problems.

d. Check

The evaluation is carried out in 2 stages, including:

1) Checklist

This evaluation is carried out by using a checklist in the form of a monitoring card. If there is a match between the trial and the SOP design, it is marked (√). This monitoring card is filled in by the officer carrying out the procedure in question (Isniah et al., 2020). The entire evaluation results can be seen in the attachment. The following is a recap of the results of the monitoring card which is used as a tool for evaluating each stage of the business process in Kaconk Flasher:

Table 8. Evaluation of Trial Procedures

<i>MONITORING WORK PROCEDURES KACONK FLASHER COUNTER</i>	
<i>Objective: Obtain good work procedures for smooth business processes</i>	
<i>Procedure</i>	<i>Check mark</i>
<i>Stages of customer reception service</i>	√
<i>Stages of gadget repair</i>	√
<i>Stages of storing the unit in the warehouse</i>	√
<i>Stages of unit pickup service</i>	√
information : √ = procedure is carried out x = the procedure was not carried out O = procedure missed	
Note : In general, at the trial stage, the initial draft SOP has been implemented.	

From the results of the monitoring checklist in the trial implementation of SOP design in the Kaconk flasher, it can be concluded that all procedures can be carried out in the field without any problems.

e. Alidate the draft SOP that has been implemented

Questionnaires were distributed to customers who visited one week after the implementation of the draft SOP to be tested, namely from 01 - 09 December 2023. There were 13 samples of the same respondents from 25 samples of customers who visited Kaconk Flasher in 1 week.

Based on table 6 on respondents' responses regarding satisfaction with kaconk flasher services, out of a total of 13 respondents, 76.92% of respondents in the service factor chose Very Satisfied (SP), namely 10 respondents, then 61.54% of respondents in the service results factor chose satisfied (P), namely 8 respondents, 84.62% of respondents on the price factor chose satisfied (P), namely 11 respondents, 76.92% of respondents on the time factor chose the response Satisfied (P), namely 10 respondents. So the conclusion of the respondent's response regarding satisfaction with the kaconk flasher service regarding all factors is that they are satisfied.

So it can be concluded that the service offered by Kaconk Flasher when testing the customer SOP design was good, customers were satisfied with the service provided. This shows that the SOP design that has been created has succeeded in increasing customer satisfaction.

IV. CONCLUSION

The root cause of the decline in service quality is the responsiveness factor, namely that there are five main causes of low service including a lack of employees, employee work negligence, lack of employee training, absence of a system to speed up work. From the results of the FGD, the management team and employees then designed SOP using PDCA. The results of PDCA that have been carried out to improve quality are as follows: The plan includes identifying the root of the problem and repairing it, and drafting a kaconk flasher SOP. Do includes testing procedures within a period of one week, check includes evaluation of the SOP draft that has been tested and act includes preparing the SOP document. The results of the draft SOPs that have been frozen are grouped into several stages, including KF-SOP-01 regarding customer reception services, KF-SOP-02 regarding gadget repairs, KF-SOP-03 regarding unit storage in warehouses, KF-SOP-04 regarding unit pickup services. In its implementation, all SOP were implemented successfully and were able to overcome the root of the problems at the Kaconk flasher service center. This assessment is based on the SOP implementation checklist carried out by employees, as well as the results of the questionnaire in the final survey which shows that respondents' responses to Kaconk Flasher service satisfaction for all aspects show satisfaction. For further research, it is hoped that an in-depth analysis of each stage of the kaconk flasher business process will be carried out to ensure that each activity is covered in the SOP. Develop ongoing monitoring and evaluation mechanisms to ensure the effectiveness and achievement of SOP objectives.

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