

CHAPTER 3 – RESEARCH METHODS

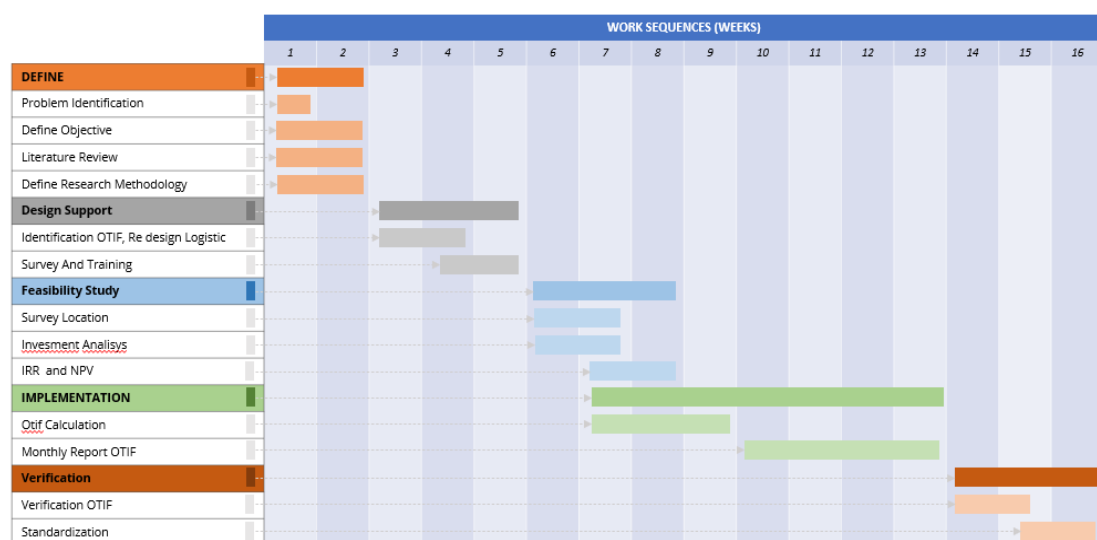
3.1 Scope of Study

This research focus on Product Support Performance (OTIF), and Provide New Support Point T enhance the effectiveness and efficiency of product support processes for businesses in South Halmahera (Site Obi).

3.2 Time Frame of Research

This research conducted around 16 weeks as stated in detail activities in Table 4. Time Frame of Study and Research.

Table 4. Time Frame of Study and Research



3.3 Research Flow Process

This research has flow process as describe at Figure 10. Research Flow Process, that explain the detail processes, start from background in introduction, problem statement, research objective, literature review, research method, result, conclusion and recommendation.

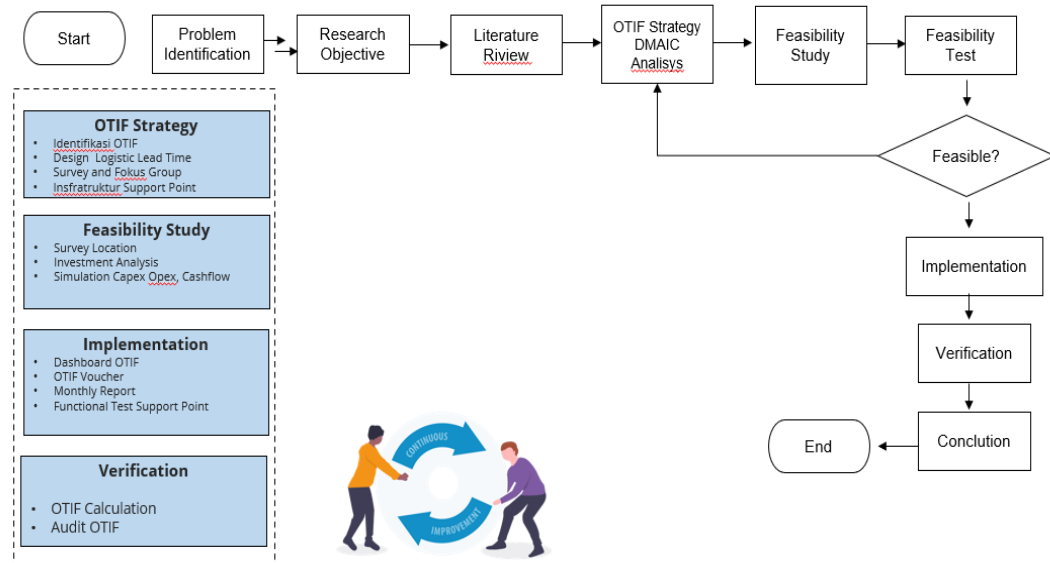


Figure 7. Research Flow Process

3.4 Research Framework DMAIC Analysis

According to (Monika Smętkowska, 2018) This research uses the DMAIC model which is a very structured framework and as part of continuous improvement in order Using the DMAIC (Define, Measure, Analyze, Improve, Control) methodology to analyze and improve OTIF (On-Time In-Full) performance is a structured and systematic approach. Let's explore how each phase of DMAIC can be applied to analyze OTIF.

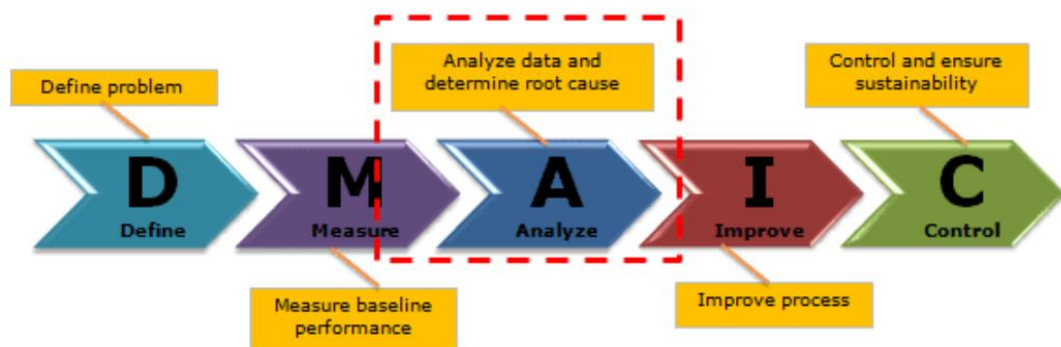


Figure 8. DMAIC Analysis

Table 5. DMAIC Stage and Steps

No	Stages	Steps Taken
1	Define Problem	Identifikasi Customer
		OTIF Performance Jan-Des 2023
		Customer Satisfaction Survey
		Infrastruktur Logistic
2	Measure Performance	Process Delivery & Lead Time
		Man Power Avaibility
3	Analyze Determine Root Couse	Analisis Avaibility, Infratraktur and Man Power
		Data OTIF Analyze
		Feasibility New Support Point
4	Improve Process	Implementation Process dan Contunious Improvement
5	Control and ensure sustainability	Internal Meeting Weekly
		Audit Internal

One of the principal tools in Six Sigma is using the DMAIC methodology. (Also see DMAIC Overview). Particularly, DMAIC is a logical framework that helps you think through and plan improvements to a process to achieve OTIF site Obi.

3.4.1 Data Source and Collection

Focus Groups: Focus group discussions will be organized with PT ABC support and operations teams. These discussions will deliver deeper into their experiences and viewpoints regarding OTIF performance, challenges they encounter in daily operations, and their ideas for improving support services. Group dynamics can often lead to richer insights.



Figure 9. Meeting and Fokus Group Discussions

From the results of this focus group discussion, it was found that the performance of OTIF Parts and OTIF is increasing, we are far from customer expectations, many past moving parts are not ready, mechanics are not arriving on time, the process is taking a long time, and there is no supporting infrastructure, while the unit population at the OTI site reaches 450 units, and after the warranty period has passed, the Overhaul plan has started, midlife components and critical parts should be repaired.

3.4.2 Quantitative Data

Survey Research is defined as the process of conducting research using surveys that researchers send to survey respondents. Online survey research is one of the most popular survey research methods today. The survey cost involved in online survey research is extremely minimal, and the responses gathered are highly accurate. The data collected from surveys is then statistically analyzed to draw meaningful research. Surveys were conducted among obi customer site employees, in terms of auto parts to accurately determine the quality of obi site product support.

SURVEY PROGRAM ON TIME IN FULL (OTIF) SPARE PARTS

PT. UNITED TRACTORS

Untuk mengukur tingkat kepuasan & meningkatkan support UT melalui program OTIF Parts sesuai kebutuhan bisnis Bapak/Ibu, mohon kesediaan waktunya untuk mengisi survey ini.

<https://utsurveys.com/baD3z3s6>

Q1. Apakah anda mengetahui tentang program OTIF Parts PT.United Tractors? *

☒ Ya ☐ Tidak

Q2. Apakah OTIF Parts sudah pernah disampaikan oleh perwakilan PT. United Tractors? *

☒ Ya ☐ Tidak

Q6. Berapa tingkat kepuasan atas Ketersediaan Spare Part yang selama ini disupport oleh PT. United Tractors? *

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☒ 9 ☐ 10

Sangat Tidak Puas Sangat Puas

Q7. Berapa tingkat kepuasan atas Kecepatan Supply BAST Parts yang selama ini diberikan oleh PT. United Tractors? *

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☒ 9 ☐ 10

Sangat Tidak Puas Sangat Puas

Figure 10. Survey OTIF

In this survey we want to see the automotive trend on the obi site, using 7 questions that are used to find out the gap between customer expectations and the automotive target that we have set above 90%, the first question is do you know the automotive parts, secondly, have you ever purchased the customized components? conveyed by representatives of PT ABC , thirdly what is the level of satisfaction regarding part availability, and finally what is the percentage of OTIF satisfaction level, These questions should help you gather valuable insights into customer perceptions, satisfaction levels, and areas for improvement in the automotive parts sector on the Obi site. Feel free to customize these questions further to align with specific aspects you are interested in exploring.

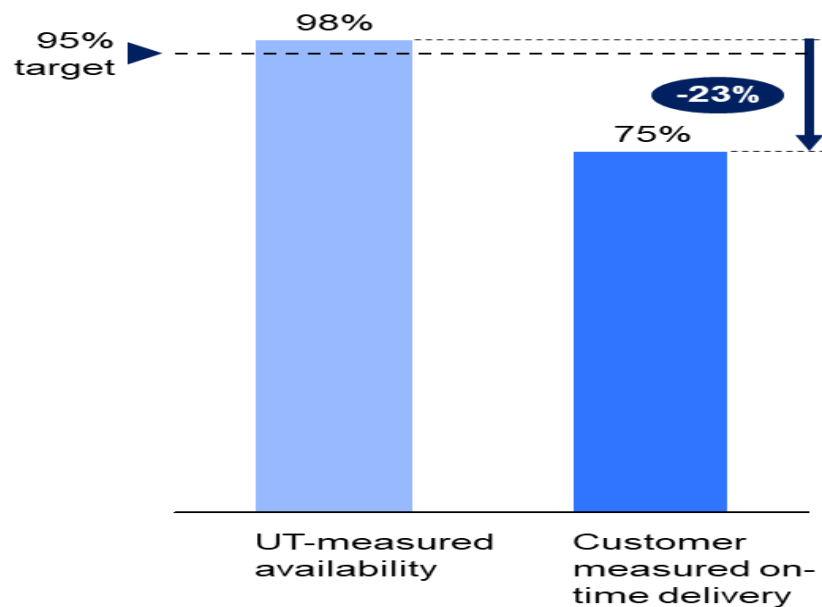


Figure 11. Survey Result

The level of customer satisfaction with automotive services at Obi Site, based on survey data, has reached 75%. This reflects the level of customer trust and satisfaction with the products and services provided by PT ABC. Even though we have not reached the target of above 90%, these results still provide valuable insights to continue improving service quality to meet customer expectations. The next step that can be taken to increase customer satisfaction levels is to conduct an in-depth analysis of the findings from the survey. Identify specific areas or aspects that receive low

ratings and focus on improving or enhancing them there. Additionally, continuously communicate with customers to understand their needs and expectations, and introduce innovations or positive changes based on the feedback received.

3.4.3 Support Infrastructure

On-site observations will be conducted at Site Obi to assess the current state of support infrastructure and processes. This hands-on approach will allow researchers to gather real-time data on how support activities are conducted, identifying bottlenecks, inefficiencies, and opportunities for improvement. Site Obi extremely challenging geographic conditions complicate lead time management for automotive parts. In the absence of office or warehouse infrastructure, the process of distributing and supplying spare parts becomes more complex. This challenge can have a direct impact on lead time, given the possibility of delays in delivery and spare parts availability. Geographical factors that are difficult to access can slow down the movement of goods, lengthen the time required for delivery, and add uncertainty to the supply chain.



Figure 12. Geography and Infrastructure

To overcome this challenge, it is necessary to consider investing in infrastructure that can support spare parts distribution and storage needs. Establishing an office or

warehouse in a strategic location can help speed up the delivery process and increase lead time efficiency. Apart from that, collaboration with local logistics partners can be a solution to overcome these geographical barriers. By identifying appropriate solutions for challenging geographic conditions, companies can increase their responsiveness to customer requests and optimize overall lead time. Labor conditions, both mechanical and administrative, at Obi are currently a critical factor in daily operations. In the mechanical field, the presence of a skilled and experienced workforce is very important to ensure maintenance and repair of automotive vehicles runs smoothly. However, there may be challenges in finding mechanics who meet the required qualification standards, especially considering difficult-to-access locations. On the administrative side, the need for a workforce skilled in inventory management, order tracking and customer service also plays an important role. A possible lack of office infrastructure can complicate administrative tasks, requiring creative approaches to manage administrative work efficiently.

Table 6. Man Power Support Site Obi

Departement	Position	Qty	Responsibility	Remarks
SVC Dept.	Mechanik	1	Leader	Moving
Parts Dept.	PDC	1	Warehouse	Standby
	Admin	0	Process Order	Moving
Total : 2 Man Power				
Location : Site Obi				

With the condition of only having two workers, consisting of one mechanic and one warehouse crew employee, human resource management is very important to ensure operational efficiency. Mechanics are responsible for vehicle maintenance and repair, while warehouse employees take care of spare parts stock management and goods in and out of the warehouse.

3.5 Define Problem Identification

Provided a statement related to the "Define" phase of the DMAIC methodology, specifically focusing on problem identification with a mention of low OTIF. To elaborate further, in the Define phase, the primary goal is to clearly articulate the problem or opportunity for improvement. In this case, the issue identified is low OTIF (On-Time In-Full) performance.

3.5.1 Problem OTIF Identification

Data Obi Site OTIF for one year will provide a quantitative assessment of customer satisfaction levels, OTIF performance, and the distribution of preferences among customers. The geographical challenges posed by Obi Island, characterized by its remote location and limited access to transportation and logistics, significantly impact the dynamics of operations. The journey to reach the Obi Site involves a lengthy 20-hour sea voyage, taking into account health protocols. This remote accessibility adds complexity to the timely movement of goods and services, including the transportation of automotive parts. In particular, the delivery of parts from UT Ternate to the Obi Site encounters a notable time frame, spanning 7 to 10 days. This extended delivery period is a direct consequence of the geographical constraints and the intricacies involved in navigating the transportation challenges associated with reaching Obi Island. As a result, efficient planning and coordination become crucial to ensuring a seamless supply chain, minimizing disruptions, and meeting the expectations of customers and stakeholders despite the extended lead times.

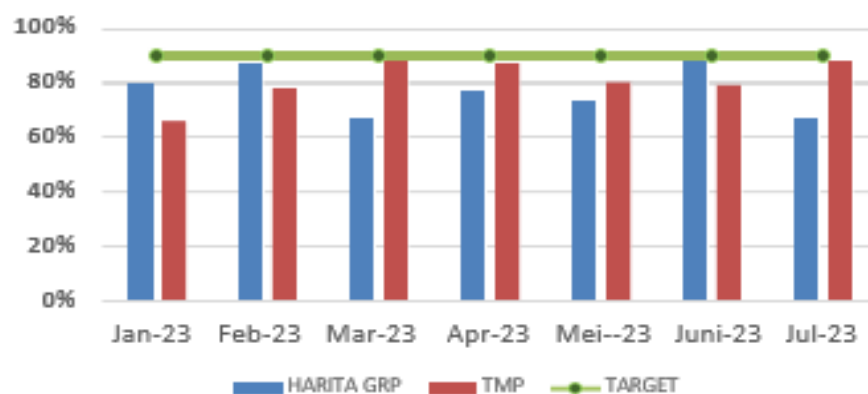


Figure 13. Trend OTIF Part

Over the past year, the On-Time In-Full (OTIF) trend for spare parts delivery on Obi Island has shown significant challenges, with a percentage below 90%. Starting from January to July, performance fluctuations were seen, starting from 80% in January, increasing in February and March to 83% and 85% respectively, then experiencing a sharp decline in April and May to 78% and 75%. Even though there was an increase again in June to 85%, performance experienced a significant decline in July, only reaching 65%. An in-depth evaluation of the influencing factors on a monthly basis is necessary to detail the causes of fluctuations and design improvement strategies to ensure more consistent delivery commitments in the future.

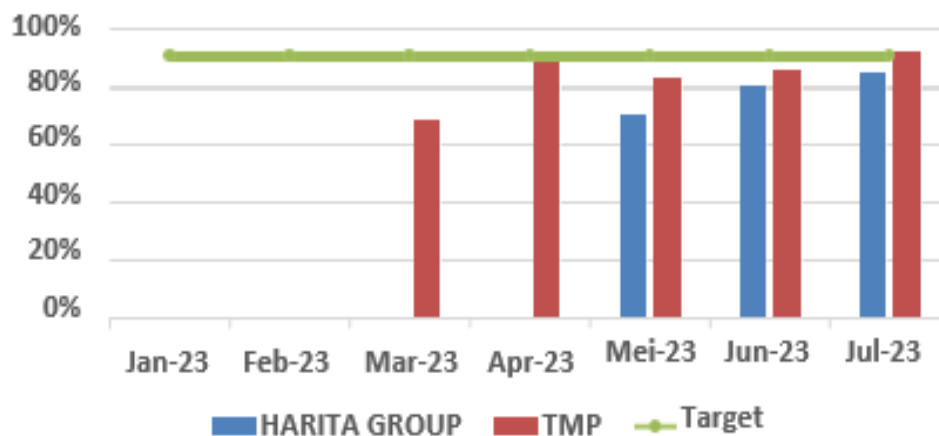


Figure 14. Trend OTIF Mechanic

In the past year, On-Time In-Full (OTIF) performance for mechanics on Obi Island has shown a trend of below 90%. January and February started at 0%, indicating significant challenges in meeting time commitments. Even though there was an increase in March reaching 63%, it was still below the desired standard. April showed significant improvement by reaching 80%, but fluctuations still occurred in May (75%), June (80%), and July (82%). An in-depth evaluation of the influencing factors on a monthly basis is necessary to detail the causes of fluctuations and identify solutions that can improve the consistency of mechanical OTIF performance in the future.

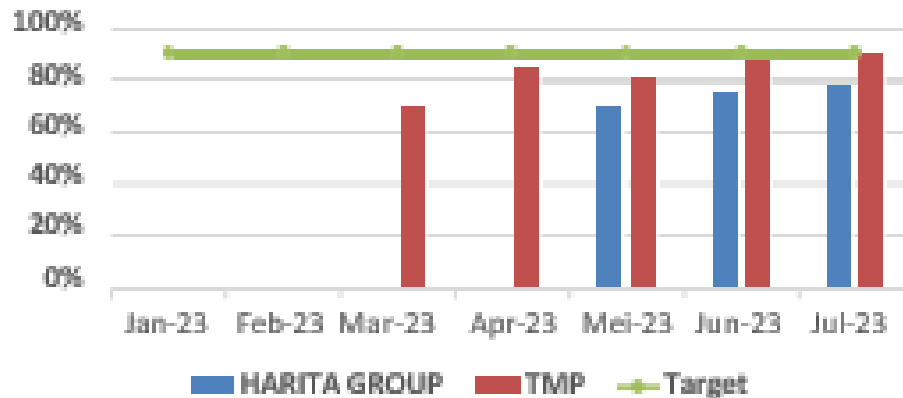


Figure 15. Trend OTIF Solution

Over the past year, the On-Time In-Full (OTIF) performance trend on Obi Island shows challenges with a percentage below 90%. And there has started to be an increase from May to 80% and above. The On-Time In-Full (OTIF) metric below 90% indicates a significant challenge in meeting delivery commitments on Obi Island. Given the extended travel duration and logistical complexities associated with the remote location, achieving a high OTIF percentage becomes a crucial aspect of supply chain management.

To improve the OTIF performance:

- **Optimize Inventory Planning:** Enhance inventory forecasting and planning to ensure sufficient stock levels are maintained, reducing the likelihood of stockouts and delayed deliveries.
- **Streamline Logistics:** Collaborate with transportation partners and explore more efficient routes or modes of transport to expedite the delivery process. Addressing potential bottlenecks in the logistics chain can contribute to meeting delivery timelines.
- **Implement Technology Solutions:** Leverage technology for real-time tracking and monitoring of shipments. Implementing a robust logistics management system can enhance visibility and allow for timely interventions in case of any delays.

- **Communication and Coordination:** Strengthen communication channels between UT Ternate, the mekanik, warehouse crew, and other stakeholders. Regular updates on shipment status and potential delays can facilitate proactive measures.
- **Local Partnerships:** Explore partnerships with local logistics providers or community initiatives to improve last-mile delivery efficiency. Local expertise can be valuable in navigating challenges specific to Obi Island.
- **Continuous Improvement:** Regularly assess and refine logistics and supply chain processes based on performance metrics and customer feedback. Implementing a continuous improvement mindset can lead to sustained enhancements in OTIF performance.

Historical OTIF performance data from both UT Manado and Site Obi will be compared and analyzed to identify performance gaps and disparities. This analysis will help pinpoint areas in need of improvement.

3.5.2 Lead Time Delivery

Analysis of delivery lead time is a key element in optimizing supply chain efficiency. In improving the delivery lead time design, first of all, it is necessary to carry out an in-depth evaluation of each stage in the delivery process, including parts collection, packing, and transportation. Identify potential points of vulnerability or bottlenecks that might slow down the process and review strategies to minimize the time required at each stage.

Additionally, involving technology in real-time monitoring can help gain better visibility into part movement during transit, enabling more effective management of delivery times. The use of sophisticated inventory management can also support better mapping and planning, identifying demand trends and minimizing the risk of out-of-stocks.

It is important to collaborate with local logistics partners and transportation service providers to ensure seamless integration throughout the supply chain. Additionally, actively involving employees and training them in logistics best practices can increase

engagement and ensure effective implementation of delivery lead time design improvements. By conducting careful analysis and implementing these strategic steps, companies can optimize their delivery lead times, increase customer satisfaction, and increase overall operational efficiency.

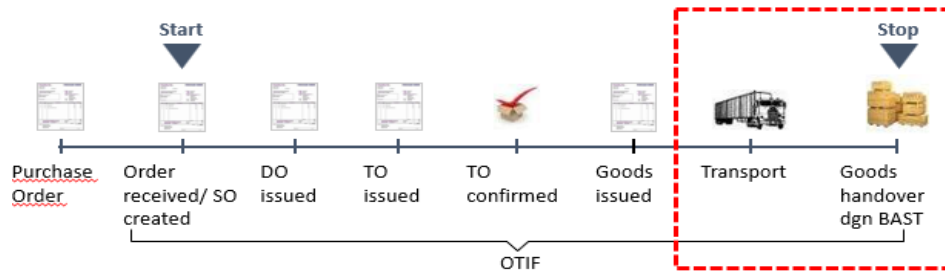


Figure 16. OTIF Process SO-BAST

It is very important to note that the OTIF Part consists of several elements, namely Purchase order, order received/SO, DO issued, TO issued, TO confirmed, Good Issued, transport and Hand over part (BAST). What concerns OTIF from SO to BAST is that it is influenced by the lead time of internal processes and transportation to the Obi site.

Table 7. Activity and Lead Time Process

Activity	Lead Time	
	Existing	Plan Multi Storage
Customer picking parts	1 day	1 day
Customer prepare parts to deliver to Obi	1 day	0 day
Loading & Unloading Parts in port	2 days	0 day
Delivery to Obi	2 days	0 day
TOTAL	6 Days	1 Day

Route	Lead Time	Cost Delivery (in IDR)
Ternate to Bacan	10 hrs (1 night)	45 Million
Bacan to Obi	5 hrs	25 Million
Labour		200 K
TOTAL	15 hrs	70 Million

There are several activities that must be carried out to reduce the process lead time or increase its productivity, including picking parts, preparation to deliver, transportation to the obi site, loading and unloading ports, and warehouse supporting infrastructure, from before it took 6 days for delivery from Ternate, after August 2023 the new

support point was inaugurated, this had a big impact so it could reduce the lead time to just 1 day for internal processes to BAST with customers, and we can reduce delivery costs by working with partners from shipping, ports and trucks for the delivery process, so that lead time and costs are more efficient.

3.6 Measure - Data Preparation and set up Key Performance

In the Measure phase of the DMAIC methodology, the focus is on data preparation and establishing Key Performance Indicators (KPIs) to quantitatively assess the current state of the identified problem, which, in this case, is low OTIF.

3.6.1 Measure Investment Analysis

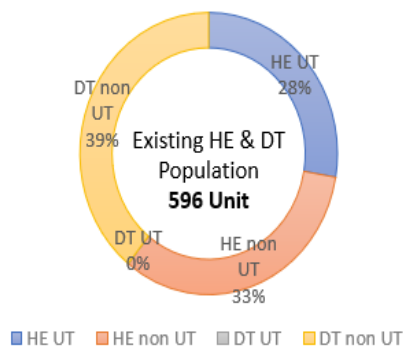
The financial feasibility of establishing a new support point, comprising an office and warehouse in Site Obi, will be assessed using IRR analysis. This calculation will consider the expected costs, returns, and the time horizon for the investment. An IRR above a predetermined threshold would indicate a financially viable project. When starting a business, one of the most important steps is to conduct a feasibility study. This study will help to determine if your business idea is viable and has the potential to be successful. Several factors need to be considered when conducting a feasibility study, including the marketability of your product or service, the competition, the financial stability of your company, and more. A feasibility study should cover the amount of technology, resources required, and ROI

3.6.2 Product Support Market

In the context of the product support market in the Obi region, understanding the market potential and dynamics is essential. With a market size reaching 57 billion per year, it can be identified as a substantial and rapidly growing business environment. Even though the potential is large, challenges arise when we see that the company's market share is currently only around 975 million. Therefore, understanding the factors that influence the comparison between market size and market share is the key to designing more effective marketing strategies and increasing the company's presence on the market. Many factors can influence market share performance in the

Obi product support market. Among these are the level of brand awareness, service quality, and level of customer satisfaction. In-depth investigation of customer preferences and evaluation of competitors in the area can provide more value to customers.

Table 8. Market Size and Population



CUSTOMER	TOTAL	FAC. CREDIT	MZ/YEAR
GANE PERMAI SENTOSA	75	PKPS	12.055.258.905
TRIMEGAH BANGUN PERSADA	135	PKPS	13.234.648.211
PARAMA GROUP	113	BFI	14.098.346.113
HALMAHERA PERSADA LYGEND	61	CASH	2.609.021.092
HASTA PANCA MANDIRI UTAMA	64	PKPS	5.536.840.182
HALMAHERA JAYA FERONICKEL	35	CASH	921.793.340
JINCHUAN CONSTRUCTION	52	CASH	1.560.345.203
TELAGA BAKTI PERSADA	18	PKPS	807.801.451
WANA TIARA PERSADA	43	CASH	1.320.893.560
TOTAL	596		
MZ 1 TAHUN			52.144.948.057
MZ/BULAN			4.345.412.338
TARGET/BULAN (PRT)			2.186.353.085
TARGET/BULAN (SVC)			318.635.308
SALES 2022 / BULAN			975.364.900

The total population in the obi area consists of 596 units, and if we divide the percentage of heavy equipment into UT products 28%, non UT heavy equipment 33%, Dump Truck UT products 0% and dump trucks 39%, in terms of population we are not yet a market leader, for this reason improvements are needed in product support services both in terms of part lead time, mechanic availability and understanding of customer complaints and needs in the OB area.

Table 9. Projection Demand Five Year

PARTS SALES	2023	2024	2025	2026	2027
GEN = Genuine General Parts	922.452.252	968.574.865	1.017.003.608	1.067.853.789	1.121.246.478
U/C = Genuine Undercarriage	4.963.648.836	5.211.831.278	6.472.422.842	6.796.043.984	9.135.846.183
GET = Wear Parts	384.374.395	403.593.114	423.772.770	444.961.409	467.209.479
FIL = Filtration	1.044.388.684	1.096.608.118	1.151.438.524	1.209.010.450	1.269.460.973
HOS = Hydraulic Hose	-	-	-	-	-
LUB = Lubricant & Grease	650.390.000	747.948.500	917.054.975	962.907.724	1.011.053.110
CMC = Chemical	124.164.644	130.372.876	236.891.520	248.736.096	261.172.901
BAT = Battery	321.196.904	337.256.749	354.119.586	371.825.566	390.416.844
ATT = Breaker, Vessel, Bucket, Etc	280.745.920	294.783.216	309.522.377	324.998.496	341.248.420
ENG = Engine & FIP	1.151.922.108	1.209.518.213	1.269.994.124	1.333.493.830	1.400.168.522
MCO = Main Component Overhaul	542.621.520	569.752.596	598.240.226	628.152.237	659.559.849
UTPRT = UT PARTS (KRA)	1.884.800.000	1.979.040.000	2.077.992.000	2.181.891.600	3.290.986.180
SUB TOTAL	12.270.707.286	12.949.281.550	14.828.454.577	15.569.877.206	19.348.368.939
SERVICE SALES	2023	2024	2025	2026	2027
Service Call : Troubleshooting	105.883.447	110.118.785	214.523.536	223.104.478	232.028.657
Contract Maintenance	360.000.000	360.000.000	360.000.000	360.000.000	360.000.000
Overhaul	388.900.000	408.345.000	628.762.250	660.200.363	759.230.417
Others					
SUB TOTAL	748.900.000	768.345.000	988.762.250	1.020.200.363	1.119.230.417

After calculating the market after sales, starting from the commodity details, GEN, U/C, GET, FIL. HOSE, LUB, CMC, BAT can be projected for the next 5 years from 2023 to 2027 for parts and services in the projection of experiencing very significant growth in 2023 totaling 12.2 billion, 2023 totaling 12.9 billion, 2025 totaling 14.8 billion , in 2026 the total will be 15.5 billion, and in 2027 the total will be 19.3 billion, with this increase improvements and improvements are needed to maintain and increase support, so that it is felt well in terms of sales and after market support. For this reason, this calculation will be used to calculate the inventory of new support points so that later the process lead time can be increased and the OTIF will be increasingly felt by customers.

3.6.3 Project Simulation Site Obi

Feasibility study for new support points we simulate this project for the next 5 years, assuming unit sales increase 15%, Part sales increase 7%, service sales increase 7%, AR 45 days and Inventory 90 days and gross profit margin 22%.

Table 10. Project Simulation

PROJECT NAME	PROJECT MULTISTORAGE OBI	OPERATING CYCLE (in days)
Year	2022	AR: Unit 45 days
Period of project	3 year(s)	Part 45 days
Unit Sales Increase	15% p.a.	Service 45 days
Parts Sales Increase	7% p.a.	Inventory: Unit days
Service Sales Increase	7% p.a.	Part 90 days
Inflation Rate	7% p.a.	AP: Unit days
Interest Rate	7% p.a.	Part 30 days
Exchange Rate US\$ 1.00	1 Rupiah	Service 30 days
Income Tax	10%	
Months of Salary	13 months (include THR)	
GROSS PROFIT MARGIN (ESTIMATED)		
Unit	9%	
Part	22% TBA	
Service	13,5% TBA	

In this simulation, it can be assumed that unit sales growth will make a significant contribution to total revenue. Sales of spare parts and services that grow in line with the increase in unit sales will have a positive impact on overall revenue. Although the relatively long receivables and inventory periods may pose liquidity challenges, a sizable level of gross profit is expected to offset this factor.

By combining all these elements, this feasibility study aims to provide a comprehensive picture of the project's potential to achieve financial and operational success over the next five years. With careful management of key variables and targeted strategies, this project is expected to make a significant positive contribution to the company's growth and profitability

Table 11. Market Size dan Plan Revenue

PARTS SALES	MARKET SIZE	EXISTING	PLAN REVENUE
GEN = Genuine General Parts	3.689.809.009	614.968.168	922.452.252
U/C = Genuine Undercarriage	19.854.595.346	3.309.099.224	4.963.648.836
GET = Wear Parts	1.537.497.579	256.249.596	384.374.395
FIL = Filtration	4.177.554.736	696.259.123	1.044.388.684
HOS = Hydraulic Hose	-	-	-
LUB = Lubricant & Grease	1.601.560.000		650.390.000
CMC = Chemical	496.658.575		124.164.644
BAT = Battery	1.284.787.615		321.196.904
ATT = Breaker, Vessel, Bucket, Etc	1.122.983.680		280.745.920
ENG = Engine & FIP	4.607.688.431	767.948.072	1.151.922.108
MCO = Main Component Overhaul	2.170.486.080	361.747.680	542.621.520
UTPRT = UT PARTS (KRA)	7.539.200.000	1.256.533.333	1.884.800.000
SUB TOTAL		7.262.805.197	12.270.705.263

From the table above we can calculate that the total market size is 57 billion, and for existing transactions it is already 7.2 billion. Where the future projection is to grow by 59%, we can calculate next year's revenue at 12.2 billion. This very significant growth was driven by the nickel business in the Obi area, which from a macroeconomic perspective experienced a very high increase in demand. For this reason, process acceleration, after sales support improvements and part lead times must be maintained to support the growth of the nickel business in the South Halmahera area.

Table 12. Inventory Amount

Sum of Total Value	Sloc		
	PMDO	PTTE	POBI
Total	12.579.166.625	5.100.089.643	1.102.345.657

After calculating the market size and planning monthly income, the next step is to detail the effective and efficient inventory size to support the smooth implementation of On-Time In-Full (OTIF) for each item or spare part that has been determined. Choosing the right inventory level will ensure the availability of parts according to

customer needs without resulting in excess stock which can impact the company's liquidity. With this approach, companies can maintain an optimal balance between meeting part availability according to OTIF targets and minimizing storage costs and the risk of excess stock. From the calculations in the table we get that for the Obi area sloc the inventory amount is Rp 1.102.345.657 for the Ternate sloc it is Rp 5.100.089.643, and for the Manado branch it is Rp 12.579.166.625 his inventory size will be able to support an increase in OTIF above 90% for the obi area and improvements will continue to be made.

3.6.4 Analysis Internal Rate of Return (IRR) and Net Present Value (NPV)

Internal Rate of Return (IRR) and Net Present Value (NPV) are investment analysis methods used to assess the financial success of a project or investment. Internal Rate of Return (IRR) Calculation: Net Cash Flow Identification: Determine the net cash flow generated by the project in each time period. This cash flow includes revenues and costs over the life of the project. Determine Discount Rate: Select the discount rate or expected rate of return. IRR is the discount rate at which NPV is equal to zero. IRR: If the IRR is greater than the expected discount rate, the project is considered feasible. If the IRR is less than the discount rate, the project may not be profitable. NPV: If the NPV is positive, the project is considered to generate added value and is worth implementing. If the NPV is negative, the project may not provide adequate returns.

Table 13. Project Simulation NPV and IRR

CASH FLOW REPORT

In Million IDR, Year Ended 31 December

	2022	2023	2024	2025	2026
Operating Profit (Income)	1.205.690.923	1.253.118.107	1.597.977.223	1.646.214.159	2.363.358.490
Add back : Depreciation	108	108	108	108	108
EBITDA	1.205.691.032	1.253.118.215	1.597.977.331	1.646.214.267	2.363.358.598
Income Tax	-570	-671	-788	-909	-1.004
Working Capital	-3.174.262.133	-174.289.522	-496.377.619	-191.180.445	-969.228.487
Capex	-973	0	0	0	0
Free Cash Flow	-973	-1.968.571.672	1.101.598.924	1.455.032.913	1.394.129.107
Adjusted free cash flow	-973	-1.968.571.672	1.101.598.924	1.455.032.913	1.394.129.107
WACC	18,0%				
Period	0	1	2	3	4
Factor	1,00	0,85	0,72	0,61	0,52
PV	-973	-1.668.281.078	774.797.488	670.467.114	750.489.790
		609.386.681			
NPV:	\$1.136.859.996	THIS PROJECT IS FEASIBLE			
IRR:	26%				
Telecommunication		CITRIX			
Sales Unit		60%			
CP Unit (in days)		60			

The results of the feasibility study analysis taking into account Net Present Value (NPV) and Internal Rate of Return (IRR), which produced an internal rate of return of 26%, show that this project has significant potential for success and profitability. The IRR of 26% exceeds the expected discount rate, indicating that this investment could provide substantial returns, but in general, an IRR of 26% reflects the project's ability to provide an attractive return on investment. In addition, NPV evaluation can provide a more detailed picture of the present value of the net cash flows generated by the project. If the NPV is positive, this indicates that this project can provide significant added value to the company's value. Therefore, the combination of a strong IRR and positive NPV indicates that this project is feasible and has the potential to provide profitable financial results. By involving this analysis in the decision-making process, companies can plan and implement these projects with confidence that they can have a positive impact on company value.

3.6.5 Analysis Infrastructure Support Point Site Obi

The new Support Point Obi was carefully designed to meet optimal operational and service needs. Using 4 containers measuring 24.8 M x 8 M, this infrastructure combines various essential facilities. The warehouse will store and manage spare parts stock, while the admin room provides a place for administrative activities. There is a training room for employee training, a mechanical room equipped with service equipment, toilets, and a simulation room for skills development. The overall design reflects harmony between functional space requirements and operational efficiency.



Figure 17. Support Point Obi

In an effort to increase productivity and comfort, this new infrastructure also includes several supporting facilities. Generators are provided to ensure the availability of stable electrical power, while forklifts are an important asset to handle logistics and movement of goods with efficiency.

Table 14. Cost Building Support Point

NO	ITEM	DESC	QTY	SATUAN	BUDGET	AMOUNT	REMARKS
1	OFFICE & WHS BUILDING	- Roofing, Whs, Open Storage, Yard	2	PAKET	@ 297.600.000	595.200.000	4x kontainer (@24,8 x 8 M) dikonfigurasi kemudian di beri atap dan diarea tengah nya dimanfaatkan untuk open storage, warehouse dan office menggunakan kontainer, dan dinding bagian luar dilapisi dengan pasangan cladding (zinaculumunium).
		- Instalasi Listrik, Air, Jaringan	2	PAKET	@ 15.000.000	30.000.000	
		- Transportasi Kontainer dan Peralatan Office	2	PAKET	@ 10.000.000	20.000.000	
		- Racking	2	PAKET	@ 38.450.000	76.900.000	
					Sub Total	722.100.000	
2	OFFICE & WHS	Meja, kursi	3	PAKET	@ 1.200.000	3.600.000	
		PC	2	UNIT	@ 7.200.000	14.400.000	
		UPS	1	UNIT	@ 2.400.000	2.400.000	
		Printer Laser Jet	1	UNIT	@ 3.000.000	3.000.000	
		Printer Dot Matrix	1	UNIT	@ 7.200.000	7.200.000	
		Camera	1	UNIT	@ 2.400.000	2.400.000	
		Radio Rig	0	UNIT	@ 9.600.000	-	
		HT	2	UNIT	@ 3.600.000	7.200.000	
		Citrix	0	UNIT	@ 12.000.000	-	F5
		Modem	1	UNIT	@ 1.200.000	1.200.000	
		AC	1	UNIT	@ 6.000.000	6.000.000	
		Locker	2	UNIT	@ 2.400.000	4.800.000	
		Lemari file	1	UNIT	@ 1.800.000	1.800.000	
		Whiteboard	1	UNIT	@ 600.000	600.000	
		Kursi Hadap	2	UNIT	@ 600.000	1.200.000	
		Dispenser	1	UNIT	@ 1.800.000	1.800.000	
		Exhaust	3	UNIT	@ 600.000	1.800.000	
		Line Telpon	1	UNIT	@ 1.200.000	1.200.000	
		APAR	3	UNIT	@ 1.800.000	5.400.000	
					Sub Total	66.000.000	
3	MESS	Tempat Tidur	2	UNIT	@ 4.800.000	9.600.000	
		Lemari Pakailan	2	UNIT	@ 1.800.000	3.600.000	
		AC	1	UNIT	@ 4.800.000	4.800.000	
		Lemari Kecil	1	UNIT	@ 1.200.000	1.200.000	
		Dispenser	1	UNIT	@ 2.400.000	2.400.000	
					Sub Total	19.200.000	
4	TOOLS SERVICE	Press.Gauge Group	1	UNIT	@ 90.000.000	90.000.000	
		Tools UC dan Attchment	1	UNIT	@ 24.000.000	24.000.000	
		Chain Block	0	UNIT	@ 12.000.000	-	
		Digital Thermometer	1	UNIT	@ 24.000.000	24.000.000	
					Sub Total	111.600.000	
					TOTAL	807.300.000	

The construction of new infrastructure at Support Point Obi involves an investment of IDR 807,300,000. Despite the large investment, this infrastructure is expected to have a positive impact in improving operational efficiency, service quality and work environment. With adequate facilities, Obi Support Point is ready to optimize its services, provide better support to customers, and answer the needs of the automotive industry in the region. The new infrastructure at Support Point Obi is not only a development project, but also represents a long-term commitment to growth and sustainability. By providing simulation room facilities, this project shows a future orientation in developing skills and improving service quality. In addition, operational continuity is guaranteed by the presence of generators and other supporting facilities, ensuring continuity of service and even adapting to customer needs in the future.