

CHAPTER 2 - LITERATURE REVIEW

2.1 UT Corporate Strategy

The Company continued its strategic plan in developing the energy segment, particularly in the development of new and renewable energy by investing in PT Arkora Hydro Tbk (Arkora). Arkora is a public company engaged in the field of new and renewable energy power plants. As part of the Company's strategy to diversify and expand its business portfolio, especially nickel commodity, the Company through its subsidiary signed a Conditional Share Purchase Agreement (CSPA) to take over 90% a company holding a Nickel Production Operation Mining Business Permit in North Konawe, Southeast Sulawesi, and a company holding a nickel processing license (smelter). The surge in commodity prices in the global market which far exceeded expectations, has driven significant growth in all the Company's commodity-based business lines so that the Company managed to close 2022 with excellent performance. Nevertheless, the Company consistently transitions and transforms its business into mineral and new and renewable energy sectors to rebalance the portfolio, reduce dependence on coal-related businesses, and having a more sustainable business portfolio.

The Company always prioritizes business diversification as part of sustainability practices and ESG (Environmental, Social, & Governance) implementation to be able to jointly build a better future for the nation while at the same time supporting the government in achieving its carbon emission reduction target. The Company implements ESG principles holistically in all business and operational activities to achieve sustainable growth, and there are 3 corporate Strategy :

1. **Differentiation:** To enhance competitive advantage.
2. **Diversification:** To have balanced business portfolio and ability to generate asustainable earning contributions for the longterm.
3. **Digitalization:** To improve service quality and to provide higher values to the customers, to increase effectiveness and work productivity, as well as to create other business opportunities.

2.2 Guaranteed Product Support at PT ABC

Guaranteed Product Support is a form of PT ABC' commitment to improve product support services for customer satisfaction.

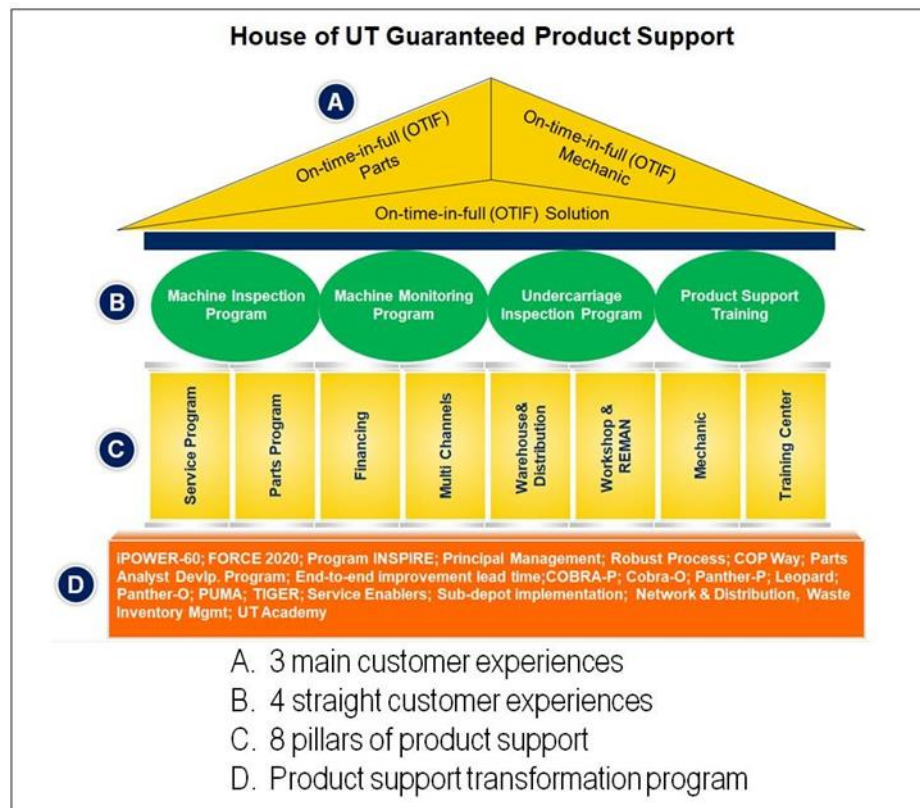


Figure 4. House of UT Guaranteed Product Support

In order to continuously deliver the best output for customer, PT ABC improve quality of the aftersales services through 4 Straight Customer Experiences and 3 Main Customer Experiences. Straight Customer Experiences are 4 rights that customers get when buying a new machine from PT ABC , including:

1. Machine Inspection Program is Regular Inspection program to accurately obtain customer's heavy equipments data condition, as repair recommendation to keep heavy equipment in prime condition.
2. Machine Monitoring Program is a Program to find out all of the information customer need about heavy equipment, such as actual location, daily operating time, fuel consumption, oil changes alert as well as parts replacement schedule

3. Undercarriage Inspection Program is a program applies for purchase of track type machine such as dozer and excavator. This is to get the information about condition of the undercarriage as well as its replacement schedule.
4. Product Support Training is Prepared for customer's operators and mechanic. Operators will be trained to understand how to perform daily checking, whereas mechanics will be developed to be able to perform excellent periodical service checking as well as spare part warehouse management.

Main Customer Experiences, namely Guaranteed on time delivery of spare parts, reliable mechanics and machining time from the time the customer contacts PT ABC until the machine is ready for use.

OTIF (On Time In Full) is a deliverable 3 Main Customer Experience.

Table 1. Three Main Customer Experience

	On-time-in-full (OTIF) Parts	On-time-in-full (OTIF) Mechanic (Service Ability)	On-time-in-full (OTIF) Solution (End to End Service Resolution)
Description	The level of accuracy of the supply in terms of on time and in full starting from the customer order to spare parts received by the customer	The level of lead time for delivery of mechanics starts from the time the customer calls to the mechanic is sent to the customer's machine	The lead time level for working under units under warranty and out warranty from customer calls to <u>amachine</u> ready for use (RFU)
Product Support Guarantee	OTIF Target Branch / Site : 90%	- Branch and Non Mining Site NFMCC: Mechanic delivery 1x24 hours - Dedicated Customer Mining Site NFMCC: 1 hour mechanic delivery - NFMCC Non Dedicated Customer Mining Site: 1x4 hour mechanic delivery - Target <u>Achievemnt</u> OTIF = 90%	Branch/Site NFMCC: RFU unit 7 days - Non Part: RFU unit 2x24 hours - With Part: RFU unit 3x24 hours - With Comp: RFU unit 7x24 hours Target <u>Achievemnt</u> OTIF = 90%
Compensation guarantee	- Dedicated Customer no compensation. - Non dedicated customer: Free filter kit equivalent to PS 500 HM PC200-8 (worth: IDR 1 million)	Free 2 units of Lubrication Analysis Program , a total of 10 bottles (worth: IDR 1.4 million)	Free 1 unit Complete Engine Inspection Program + 5 bottles Lubrication Analysis Program (worth: IDR 6.2 million)

Customer satisfaction is not only a fundamental goal but also a crucial determinant of sustained business success. It directly influences various aspects of an organization, including customer loyalty, brand reputation, and revenue generation. At the heart of assessing customer satisfaction lies the metric of On-Time In-Full (OTIF) performance. OTIF measures the effectiveness of delivering products in line with customer expectations and within the predefined timeframes. The relationship

between customer satisfaction and OTIF performance has been extensively explored in the literature. Empirical evidence from studies such as those by Smith et al. (2017) and Johnson and Smith (2020) has consistently demonstrated a direct correlation between these two factors. These studies have underscored the pivotal role of OTIF performance in shaping customer satisfaction levels. Meeting delivery promises by ensuring products are delivered on time and in the quantities ordered is crucial for cultivating positive customer experiences and nurturing long-term relationships.

The following is how to calculate a system that can be called OTIF

On-time : Parts are received by customers according to the specified time limit
In-full : Parts are received by the customer in the quantity according to the order
OTIF : Combined Ontime and Infull

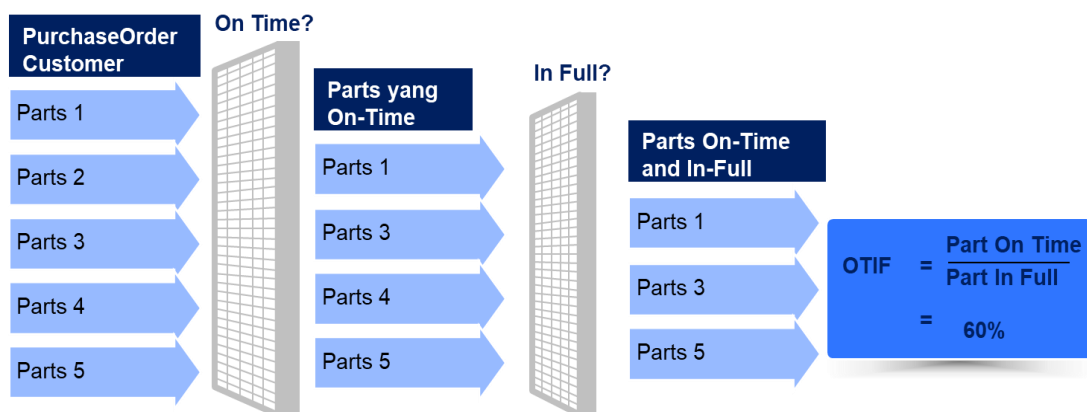


Figure 5. Calculation OTIF

And how to measure OTIF from Customer order, and this is the OTIF simulation if customer order Part from PT ABC .

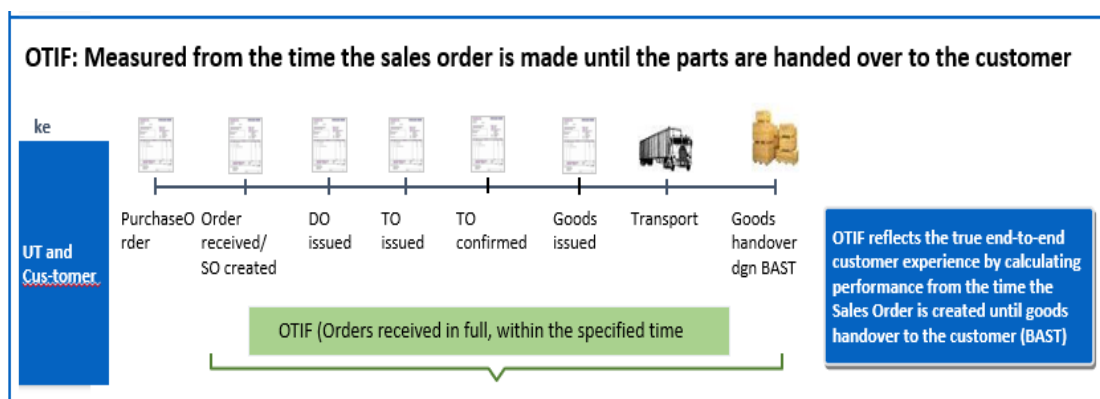


Figure 6. OTIF Measured

2.3 UT Support Point

In order to expand its distribution network, PT PT ABC introduced its newest facility, namely the UT Support Point to support nickel projects in the Halmahera area. The nickel mining project will obviously require the availability of heavy equipment to make it happen. Therefore, as a distributor of heavy equipment in Indonesia, UT is ready to provide supplies of heavy equipment to support construction projects in Indonesia. UT also always pushes itself to achieve more than what is standard, explores the landscape and reads new business opportunities and helps customers become the best by not only providing heavy equipment, but through its newest facility, namely the UT Support Point.

UT Support Point is an extension of the UT branch office in the Sulawesi island area, namely; UT Manado branch. Each UT Support Point is supported by two competent mechanics and a warehouse with a minimum area of 200 square meters to provide convenience for customers in purchasing spare parts and repairing heavy equipment quickly. Through the UT Support Point customers can also consult on the needs of heavy equipment spare parts.

UT Support Point is a manifestation that UT wants to establish closer relationships and be closer to customers. Because in the field, entrepreneurs often experience difficulties in determining what heavy equipment to use. Things to consider when buying heavy equipment are strong/durable, easy to get spare parts and affordable prices. Entrepreneurs also don't want to be trapped in a situation where after buying at a low price, it turns out that after a certain period of time they have difficulty finding spare parts for the maintenance and repair of their heavy equipment.

In addition, through the UT Support Point. UT wants to build regional infrastructure together with customers to provide positive benefits for the island of Java. As well as supporting customers to improve standards to be ready to compete in order to win the competition in the market.

2.4 Feasibility Analysis Investment through IRR Analysis

Internal Rate of Return (IRR) is a potent financial metric employed to assess investment project viability. In the context of establishing a new support point for enhanced product support, IRR analysis is pivotal for gauging financial feasibility. IRR analysis entails computing the discount rate at which the Net Present Value (NPV) of future cash flows reaches zero. Here's how IRR analysis can be applied to evaluate this investment:

- **Cash Flow Projections:** Estimate cash flows tied to the support point investment, encompassing setup costs, operational expenses, and potential revenue growth stemming from improved customer satisfaction.
- **Calculate NPV:** Determine NPV of projected cash flows using diverse discount rates, reflecting desired returns or cost of capital. NPV is the difference between present value of inflows and outflows. The IRR is the rate at which NPV becomes zero.
- **Interpret IRR:** A positive IRR indicates returns surpass cost of capital, suggesting feasibility. Higher IRR implies more appealing opportunity. If calculated IRR exceeds the company's required return rate, the investment has potential to justify risk and capital.
- **Sensitivity Analysis:** Vary key assumptions like revenue growth, expenses, and setup costs to conduct sensitivity analysis. This assesses project robustness across scenarios.
- **Decision Making:** A significantly higher calculated IRR than company's cost of capital suggests appealing investment. However, account for non-financial benefits and risks

IRR analysis is critical in evaluating the financial viability of a new Site support point. By comparing the IRR with the cost of capital and considering the wider implications, decisions regarding project continuation can be made. Sensitivity analysis accommodates uncertainty to gain comprehensive insights before deciding.

2.5 NPV and IRR Analysis

NPV is the present value of future inflows, net of present value of future outflows. The formula to calculate the NPV is as follows:

$$NPV = -Outlay + \sum_{t=0}^N \frac{CF_t}{(1+r)^t}$$

The term CF_t is the expected net cash flow at time t , N is the projected life of the investment, and r is the discount rate (also known as the opportunity cost of capital). According to NPV, a single project is considered acceptable if its NPV is positive. IRR, on the other hand, is the discount rate which, when used to calculate NPV, would make the Net Present Value equal to 0. We use the following expression to calculate the IRR:

$$0 = NPV = -Outlay + \sum_{t=0}^N \frac{CF_t}{(1+IRR)^t}$$

We accept a project if its IRR exceeds its discount rate ($IRR > r$).

As one might easily notice, the two concepts and formulas lie on common ground. In fact, they are Yes/No tools to accept or reject a single project. And since the time value of money concept is applied in both instances, we consider these measures economically sound. In the world of Corporate Finance, NPV and IRR are widely used among analysts and CFOs. Typically, higher NPV and IRR values are indicative of more beneficial projects. However, there are a few differences between IRR and NPV that are also worth mentioning. To begin with, it is not appropriate to rank projects using IRR — reinvesting at the same rate as IRR is unrealistic. Though, reinvesting at the same rate as the opportunity cost of capital implied by the NPV calculations is economically realistic. Hence, ranking projects based on their Net Present Value is deemed reasonable. Moreover, IRR does not allow us to use different discount rates throughout a project's life, as it implies a single rate of return. However, when using NPV, an analyst might easily apply various discount rates to the calculations. What's more, the NPV result is expressed in monetary value,

whereas the IRR calculation provides us with a percentage or rate. We have summarized the most important characteristics of both techniques in the table below .

Table 2. NPV vs IRR

	NPV	IRR
Definition	The net present value of future cash inflows minus the present value of the investment's cash outflows	The discount rate at which the project's NPV is equal to zero (hurdle rate)
Time value of money concept	✓	✓
Criterion to accept/reject	$NPV > 0$	$IRR > r(\%)$
Result expressed in	Monetary value	Rate (percentage)
Different discount rates can be applied to a single project	✓	✗
Appropriate for ranking mutually exclusive projects	✓	✗

When NPV and IRR conflict with each other, the NPV analysis is the appropriate indicator to rank different projects. Generally speaking, we might say that NPV provides more flexibility to the analyst using either technique. To define the barrier for the discount rate, however, one still turns to the IRR measure. That's why a financial analyst should be familiar with both approaches, as they provide different perspectives on an investment decision.

2.6 Previous Studies

Table 3. Previous Study

Title	Author	Years	Variable	Findings
Increases Customer Service Level by Analysis and Control for Heavy Equipment Spare Parts Inventory in the Nickel Mining Industry	S. Rahayu and V. Iwan	2020	The main objectives of this research is to determine minimum (safety stock) and maximum inventory level in order to reduce stock out and overstock of spare part inventory on heavy equipment	Saving costs of spare parts based on comparison between actual inventory costs and inventory costs based on EOQ method such as for 82.92% saving on material for material Link;1,2 ton; MP2726009; Berco and 56%.72% for P/N:2306315;Transmission GP;CAT. Generally, reducing inventory cost could be conducted in case study. Practical implications for case study are inventory classification data in SAP database has been completed based on results of ABC classification in this study. Now, the case study was using EOQ and continuous review control to determine minimum and maximum stock for heavy equipment and in future other categories will used EOQ and continuous review.
Enhancing customer loyalty through quality of service: Effective strategies to improve customer satisfaction, experience, relationship, and engagement	Nitin Rane And Anand Achari	2023	Enhancing customer loyalty is crucial for business success, and it can be influenced by various factors such as customer satisfaction, quality of service, customer experience, and customer relationship management.	This study presents effective strategies for enhancing customer loyalty through quality service. These strategies include understanding customer expectations, training and empowering employees, personalizing the customer experience, maintaining consistency across touchpoints, timely and effective communication, focusing on continuous improvement, rewarding customer loyalty, building emotional connections, resolving complaints effectively, measuring and monitoring customer satisfaction, anticipating customer needs, encouraging and responding to customer feedback, and investing in technology.

Validity of Feasibility Study for Infrastructure Construction Project	Khalied Hyari & Amr Kandil	2009	The validity of a feasibility study for an infrastructure construction project depends on the rigor of its analysis, the accuracy of its assumptions, and the thoroughness of its evaluation of all relevant factors affecting the project's success	Structure Of Feasibility Study and Several Activity to improve valoidity of feasibility study
Feasibility Studies and Important Aspect Of Project Management	Momin Mukherjee & Sahadeve Roy	2020	Feasibility studies serve as a foundational element in project management, providing essential information and analysis that guide decision-making, risk management, and resource allocation throughout the project lifecycle.	Clasify of feasibility Study and Benefit of feasibiulity study