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Event	:	<b>FINAL Thesis Defense</b>
Date	:	<b>Friday, February 21, 2025 at 4PM</b>
Student	:	<b>Alfi Trianto (20222013)</b>
Title	:	<b>Strategic Investment Decision and Evaluation to Acquire 1,000 Ton Launcher Gantry for Toll Harbor Road Project of PT Wijaya Karya (PERSERO), Tbk</b>
Thesis Advisor(s)	:	<b>Prof. Wiwiek Daryanto</b>
Examiners	:	<b>Prof. Roy Sembel &amp; Dr. Samuel PD Anantadjaya</b>



### SWOT Analysis

INTERNAL	
STRENGTHS	WEAKNESS
<ul style="list-style-type: none"><li>- Faster installation of Precast Box Girders</li><li>- Enhanced safety and reduced accident risks</li><li>- Long-term durability and reusable for future projects</li><li>- Ensures high construction precision and quality</li></ul>	<ul style="list-style-type: none"><li>- High initial investment cost</li><li>- Regular maintenance and operational expenses</li><li>- Limited usage for smaller projects</li></ul>

### SWOT Analysis

EXTERNAL	
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"><li>- Competitive edge in securing large-scale projects</li><li>- Cost savings in long-term project execution</li><li>- Enhances the company's reputation in the industry</li><li>- Supports national infrastructure development initiatives</li></ul>	<ul style="list-style-type: none"><li>- Economic fluctuations affecting material costs</li><li>- Operational risks such as machinery failure</li><li>- Regulatory changes impacting construction policies</li></ul>

### SWOT Analysis

**Key Findings**

- 1 The investment is crucial for efficient project completion.
- 2 Strategic planning and risk mitigation are necessary.
- 3 Aligning with national infrastructure goals enhances feasibility.

### Capital Budgeting Analysis Assumptions

**Key financial assumptions in the investment analysis:**

• Price of Launcher Gantry	: IDR 35.48 billion
• Engineering Service Fee	: IDR 4.36 billion
• Inst. & Comm. Cost	: IDR 7.72 billion
• Economic Life	: 10 years
• Corporate Tax	: 22%
• Interest Rate before Tax	: 12%
• WACC	: 9.36%



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### Non-Monetary Analysis Key Results

**SDG 9 - Industry, Innovation, and Infrastructure**

- Supports SDG 9 by strengthening infrastructure and innovation.
- Advanced gantry technology improves construction efficiency.
- Automation boosts speed, quality, and sustainability.
- Enhances regional infrastructure resilience.

**SDG 13 - Climate Action**

- Reduces environmental impact and emissions.
- Speeds up construction, cutting energy use.
- Lowers dependence on energy-intensive processes.
- Supports sustainable infrastructure and climate action.

**SDG 8 - Decent Work and Economic Growth**

- Ensures high-quality, resilient road construction.
- Supports sustainable urban mobility in North Jakarta.
- Enhances transportation safety and efficiency.
- Strengthens adaptable and durable infrastructures.

**SDG 11 - Sustainable Cities and Communities**

- Improves worker safety and reduces manual labor.
- Automation ensures a safer, more efficient workplace.
- Boosts cost efficiency, speeds up projects, and supports economic growth.
- Creates jobs in planning, logistics, assembly, and maintenance.

### CONCLUSIONS

**Strategic Benefits (SWOT Analysis)**

- Improves efficiency and reduces delays.
- Enhances competitive advantage with cost-effective solutions.

**Overall, SWOT analysis indicates that the benefits outweigh the risks, making this a strategic investment for WKA.**

**Financial Feasibility (Capital Budgeting Analysis)**

- Positive NPV, IRR, and Payback Period confirm profitability.
- Cuts long-term costs by reducing rental dependency.

**Collectively, these metrics support the financial attractiveness of the investment.**

**Sustainability & SDG Contribution**

- Supports SDG 9 (Infrastructure & Innovation).
- Enhances worker safety and reduces environmental impact.

**The investment not only provides financial returns but also aligns with global sustainability efforts.**

Theoretical Implication	Managerial Implication
<ul style="list-style-type: none"><li>Validates the importance of capital budgeting tools (WACC, NPV, IRR, Payback Period, etc.).</li><li>Strengthens the link between financial analysis and strategic decision-making.</li><li>Demonstrates how investment decisions in infrastructure can be evaluated holistically.</li><li>Enhances understanding of operational and financial synergies in capital-intensive projects.</li></ul>	<ul style="list-style-type: none"><li>Provides decision-makers at WKA with a structured investment evaluation framework.</li><li>Emphasizes the role of financial and operational analyses in project feasibility.</li><li>Supports investment in advanced equipment to enhance market competitiveness.</li><li>Encourages companies to align infrastructure investments with sustainability objectives.</li></ul>

### Sustainable Development Goals (SDG's)

**WHAT ARE SDGs?**

The Sustainable Development Goals (SDGs) are set of 17 global goals established by United Nations (UN) in September 2015 as part of 2030 agenda for Sustainable Development (SD).

**OTHER EXPLANATION**

**Sustainability** is the capacity to create, test, and maintain adaptive capacity. **Development** is the process of creating, testing, and maintaining opportunity. The combining phrase is **Sustainable Development** thus refers to the goal of fostering adaptive capabilities and creating opportunities (Hofmeyr, 2006).

REC

CMA PREPA PROGR

Wiwiek M. Daryanto

Roy Sembel

Alfi Trianto

Prof. Roy Sembel

Nisa Lutfi

Comments;

1. You have SWOT analysis, but you did not have TOWS analysis on your slide. **How come you are going to do that simply because TOWS analysis to derive the combination of WT, ST, WO and SO?** Can you say otherwise?



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2. On page 25 (the slide presentation), there are 4 non-monetary analysis for the SDG; (a) industry, innovation and infrastructure, (b) sustainable cities and communities, (c) climate action, and (d) decent work and economic growth
- What is the **SDG 13 to talk climate action to deal with the launching gantries**, not just 1 but 2 gantries, to deal with the capital budgeting & negotiations
  - What is the SDG 8 to talk about the decent work and economic growth. **What is this decent work and economic growth?**



3. On your conclusion on page 28 (slide presentation), you stated differently from page 25 with non-monetary analysis that you are including **4 SDG but apparently you said that SDG is only SDG 9 to talk about infrastructure and innovation**. Then, which one is correct?







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4. Page 23 on the slide presentation,
- why is ROI so big (60%) considering the payback period, which is about 3.8 years (including discounted payback period, which is about 4.7 years) and WACC (9.36%) to be so small/minimal?
  - The NPV is so big, which is Rp. 48 billion, is it really only for the government to deal with this cash and not only private individuals?

Capital Budgeting Analysis Key Results		
Item	Results	Description
WACC	9.36%	• Since this investment is fully funded by debt, the tax savings help improve financial efficiency.
Payback Period	3.8 years	• Relatively quick recovery of the initial capital. This payback period is much shorter than similar projects, making cash flow better.
ROI	60.17%	• Strong profitability compared to the initial investment. • A high ROI suggests financial viability, making the investment a beneficial strategic decision.
NPV	IDR 48.3 billion	• A positive NPV indicates that the project's future cash inflows exceed the initial investment. • This confirms the financial feasibility and profitability of acquiring the Launcher Gantry.

5. The profitability index is 1.02 that is to confirm that PI is greater than 1 suggest the project generates more value than its cost. **But the problem in 1.02 is merely 1. What can you say about this?**

Capital Budgeting Analysis Key Results		
Item	Results	Description
PI	1.02	• A PI greater than 1.0 suggests the project generates more value than its cost. • This reaffirms that the investment will not only recover costs but also produce significant returns.
Discounted Payback Period	4.7 years	A DPP of less than 5 years is considered reasonable for infrastructure investment projects.
IRR	26.59%	This far exceeds the WACC of 9.36%, confirming strong financial returns. • The IRR validates the project's ability to generate surplus value for the company.

6. On page 22, it is said that all of the 17 SDG is really important since all are taking of multi-stakeholders and cross-sectoral partnerships. Without them, all solvable and the grand challenges will not possible. **What the multi-stakeholders and cross-sectoral partnership in these instances?**

The 17th SDG is particularly important in this regard: The SDGs explicitly emphasize the need for new multi-stakeholder and cross-sectoral partnerships. Without these, the ambition to solve the world's grand challenges will not be possible.



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7. Taking a view of **Capital Budgeting** perspective, where by all the quantitative results such as; NPV, payback period, IRR, and ROI, **these are the results of all positive and favorable**. They are means that to have the capital budgeting is really accurate for the financing background.
- When all the positive & favorable results **mean that all launching gantry be purchased into 2 units**, right?
  - When all the negative sides for the quantitative results these mean that no gantry should be purchased. **What do you suggest then as a result?**

Previous Research		
Author	Variables	Findings
Hollis, M., Daryanto, W. M., & Zuhri, M. (2022)	Payback Period, ROI, NPV, IRR, Monte Carlo	Positive NPV, Payback Period < 1 year, SDG Goal No. 5
Mirza, A. M., & Daryanto, W. M. (2018)	Payback Period, ROI, NPV, PESTEL	Payback Period < 5 years, ROI > 10%
Mentari, D., & Daryanto, W. M. (2018)	NPV, IRR, WACC, Profitability Index	ROI: 23%, NPV Index: 144.53%, IRR: 22.30%
Iswati, W., & Daryanto, W. M. (2018)	Payback Period, NPV, PI, IRR	Payback Period: 3.41 years, ROI: 55.18%, NPV: IDR 10.28
Iswati, W., & Daryanto, W. M. (2018)	IRR, NPV, Payback Period, ROI, Monte Carlo	IRR: 25.5%, NPV: IDR 68.28, ROI: 52%, SDG Goal No. 12

**Capital Budgeting Focus:**

- Most studies use quantitative methods like Payback Period, NPV, IRR, and ROI to evaluate project feasibility.
- Many studies also incorporate Non-Monetary Analysis and align projects with SDGs.

**Strategic and Non-Monetary Aspects:**

- Some studies, like Hollis et al. (2022), integrate SWOT analysis and strategic assessments for long-term project viability.
- SDGs are considered, focusing on resource management and sustainability.

=====proposal=====

**STRATEGIC INVESTMENT DECISION AND EVALUATION TO ACQUIRE 1,000 TON LAUNCHER GANTRY FOR TOLL ROAD HARBOUR ROAD PROJECT OF PT WIJAYA KARYA (PERSERO), Tbk.**

Researcher  
ABE Triyanto (202222019)  
Thesis Supervisor  
Prof. Dr. Wawek Mardawijah D., SE., AK., M.M., CMA

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Background of Study, Research Gap, Research Question, Research Objectives, Research Methodology, Research Significance

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Research Strategy, Data Collection, Literature Review

CHAPTER 3. METHODOLOGY 03  
Research Design, Population of Respondents

CHAPTER 4. REFERENCE 04

**BACKGROUND**

Jakarta is the capital city of Indonesia, located on the island of Sumatra. It has four main Ring Road networks, namely RING-1 (JORR-1) and RING-2 (JORR-2). On the Harbour Road E Toll Road, there has been a significant increase in vehicle volume.

Increased service capacity with the construction of the Harbour Road E

**RESEARCH GAP**

The financial bridge structure uses a Segment Box Girder (SBG) span type. The span length is 47 m. The structure is designed for the heavy load of the launching gantry system with Launching Gantry.

The total load of 1 span reaches 1,000 tons, where the span is supported by two piers. In the planning for the construction of Harbour Road E, which must be completed within 18 months, it requires a total of two Launching Gantry (L.G.).



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The top row of the grid displays two presentation slides. The left slide, titled 'RESEARCH GAP', contains a table with 'Research Question' and 'Research Objective' columns. The right slide, titled 'Research Design', defines research design and lists three steps: 1. Analyze and evaluate the most suitable operational strategy, 2. Measure and evaluate the feasibility, and 3. Formulate answers. The middle row shows two video feeds of participants, with the name 'Nisa Lutfi' visible in the bottom right corner of each feed. The bottom row shows a slide with a photo of a building and another video feed of participants, also with 'Nisa Lutfi' visible.

Comments;

8. You were saying that this is 1 unit availability for launching gantry on slide 3. **Where it is? Where is this used for other launching gantries?**
  - a. **Where can you get the other 1 for the total is 2 launching gantries?**
  - b. The question 1 is **to evaluate and the measure the most suitable operating strategy** due to 1,000 ton launcher gantry. **How to evaluate and to measure it though?**



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#### 1.6 Research Objective

Based on the Problem Formulation explained in 1.5, the objectives of this study are as follows:

1. To Analyze and evaluate the most suitable operational strategy should be implemented by Wika management to acquire the 1,000 Ton Launcher Gantry on the Harbor Road 2 Toll Road Project of Wika.
2. To Measure and evaluate the feasibility of investing in the 1,000 Ton Launcher Gantry on the Harbor Road 2 Toll Road Project of Wika.
3. To find out the 1,000 Ton Launcher Gantry investment help Wika in supporting the aspects of the Sustainable Development Goals?

9. You said it is 2 unit to launching gantries. The question in number 1 is really concerning the people though because there are **no answers for launching gantries** (not just 1, but it is actually 2)

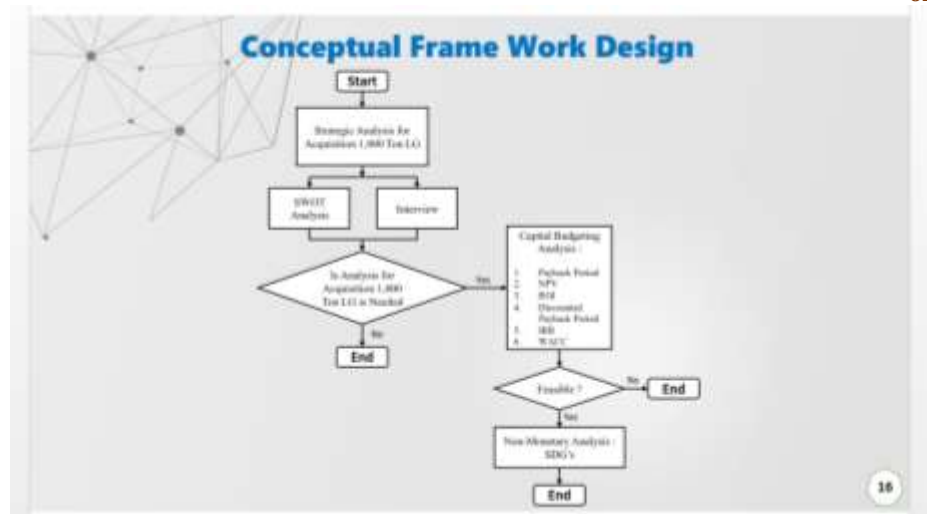
- a. What do you have to do to **obtain the launching gantry**?
- b. Where would you get the **both account for launching gantries**?

RESEARCH GAP	
Research Question	Research Objective
What is the most suitable operational strategy should be implemented by Wika management to acquire the 1,000 Ton Launcher Gantry on the Harbor Road 2 Toll Road Project of Wika?	To Analyze and evaluate the most suitable operational strategy should be implemented by Wika management to acquire the 1,000 Ton Launcher Gantry on the Harbor Road 2 Toll Road Project of Wika.
How to measure and evaluate the feasibility of investing in the 1,000 Ton Launcher Gantry on the Harbor Road 2 Toll Road Project of Wika?	To Measure and evaluate the feasibility of investing in the 1,000 Ton Launcher Gantry on the Harbor Road 2 Toll Road Project of Wika.
How does the 1,000 Ton Launcher Gantry investment help Wika in supporting the aspects of the Sustainable Development Goals?	To find out the 1,000 Ton Launcher Gantry investment help Wika in supporting the aspects of the Sustainable Development Goals?

10. This is on page slide 16, what if the acquisition of launching gantry turns on to be negative. You would say that the project will be ended. **What do you think about negative and not feasible launching gantry?**



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11. On page 20, it is said that all of the 17 SDG is really important since all are taking of multi-stakeholders and cross-sectoral partnerships. Without them, all solvable and the grand challenges will not possible. **What the multi-stakeholders and cross-sectoral partnership in these instances?**

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**Capital Budgeting Focus:**

- Most studies use quantitative methods like **Payback Period**, **NPV**, **IRR**, and **ROI** to evaluate project feasibility.
- Many studies also incorporate **Non-Monetary Analysis** and align projects with **SDGs**.

**Strategic and Non-Monetary Aspects:**

- Some studies, like **Hollis et al. (2022)**, integrate **SWOT analysis** and strategic assessments for long-term project viability.
- **SDGs** are considered, focusing on resource management and sustainability.

13. Then, all the sudden these are about “**strategic and non-monetary aspects**” in your option above,
- SWOT analysis should be long-term. This is what the long-term SWOT analysis good for. **Other than SWOT analysis should be immediate effect, tell me what kind of SWOT analysis is short-term?**
  - Strategic assessment & SDG should be dealing with project viability. These are going to be long-term as well. Perhaps, you can tell me the **short-term viability for strategic assessment & SDG?**
14. This is going to be a mixture between quantitative vs qualitative. What would be your opinion concerning the **quantitative results** (payback period, ROI, NPV, IRR and WACC) and the **qualitative results** (SDG in terms of non-monetary analysis)?
15. The end result would be SDG for the non-monetary analysis, right? So, SDG will be the real results for quantitative results that is the answer would be **favorable for payback, ROI, NPV, IRR and WACC?**
16. Where do you get the **WACC?**