1. **Project Aim & Objectives**

Build a **Parametric Cost Estimation Trade-Off** model of a Design to Cost Remanufacturing process support for the decision making, while designing a digitization life-cycle cost of a radar system, which include benchmarking current best practices and tools. **“Design-To-Cost (DTC)” simply means designing a product from a scratch to meet the target cost or market prices, which the customer is willing to pay** (Cost Improvement, 2010).

- **Literature Review** of the Cost Modelling.
- **Evaluate Industry Best Practice** (Benchmarking).

- Develop clear understanding the **Cost Trade-Off**.
- Develop a **Parametric Costing Model**.

2. **Costing Methodologies & Tools**

Reason for conducting this research was due to the **Gap in Knowledge** that is evidenced by extant literature review of the DTC Model and based on EOL design experience in the Marine industry.

<table>
<thead>
<tr>
<th>Methodologies</th>
<th>Tools</th>
<th>Data Collection Points</th>
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<tbody>
<tr>
<td>Define Key Cost Specifications</td>
<td>Excel Data collection</td>
<td>Detail Costing Models: QED, DFM.</td>
</tr>
<tr>
<td>Use the appropriate Cost Estimation Methodology</td>
<td>True Planning</td>
<td>Process Simulation</td>
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3. **Cost Estimating Model Methodology**

Key Benchmarked companies tend to use following product design Estimation tool to reduce re-manufacturing cost of the product. **Cost Estimation Methodologies are:**

1. Understanding of the **As-Is model**
2. Create a database of the **Product configurations**, building blocks up to component level.
3. Develop the structure of tools for the **Radar** System cost validation
4. Start collecting costing data of every process and components.
5. Identify all different **Life Cycle Cost drivers**.
6. Identify **cost estimation methodologies**; Parametric, Analogy and Detailing costing model.
7. Identify and validate all **cost drivers up to the components** of the LCC.
8. Develop a model for the **end users for the LCC estimation**.
9. Gather all **historical data** to develop the Parametric Costing Equations.
10. Validation of all **internal and external cost drivers** for the estimation method

4. **LCC Process Stages**

5. **Cost Estimation**

“Cost estimation is a forecast of costs based on a logical extrapolation of available historical data”

**Analogy Cost Analysis**

Making adjustments for complexity, technical differences on actual product design cost to drive the Reman Product Cost Estimate.

- Select analogous system
- Disaggregate systems
- Develop cost complexity factor
- Apply to analogous system

**Parametric Cost Analysis**

It involves collecting relevant historical data, and retaining products to be estimated through the use of mathematical techniques.

- Collect relevant data
- Evaluate & Normalize Data
- Define Estimating “hypothesis”
- Perform Regression Analysis & Tests
- Select Cost Estimating Relationship

6. **Conclusions**

1. The majority of organizations, define products as a top level of component which drives the major costs.
2. The DTC Cost Reduction Team provides support for the Costing which get the same attention, such as product quality, performance & improvement
3. Cost Versus Target should be reviewed by the DTC Team with the Production and Manufacturing Managers.