TARGET COSTING

Project Design & Cost Management

TARGET COSTING

- "Target costing is a structured approach to determine the life-cycle at which a proposed product with specified functionality and quality must be produced to generate the desired level of profitability over its life cycle when sold at its anticipated selling price[1]"

- Objective: "design costs out of products, not try to find ways to eliminate costs after products inter production[1]"

Target Costing Process

- Define the Product

- Set the Target

- Achieve the Target

- Maintain Competitive Cost[2]

DEFINE THE PRODUCT

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- Competitive Analysis$_2$
  - Competitive Price and Feature
  - Competitor Cost Structure
  - Reverse Engineering

- Customer Knowledge$_2$
  - Quantifying Needs
  - Conjoint Analysis
  - Feature/Price Data$_3$
  - Attribute/Price Data$_3$

- Marketing Research$_2$
  - Provides quantitative info about customer needs/wants
  - Reveal unrecognized niches$_3$
    - Public Information
    - Analysts' Reports

- Product Planning$_2$
  - Analyzing all three areas and determining what segment to concentrate on

SET THE TARGET

SET THE TARGET

- Establish Price

- Know Costs

- Determine Profit Margin

- Develop Subsystems

- Functional and Cross Functional Groups

SET THE TARGET

- Establish Price$_2$
  - Based upon the information gathered when defining the product
  - Experience Curves

- Know Your Costs$_2$
  - Look at all factors significantly affecting product cost

- Determine Profit Margin$_2$
  - Corporate profit expectations
  - Competitive analysis
  - Historical results

Market Cost is a benchmark cost, cost for a comparable project$_4$

Allowable Cost is the maximum allowable cost to be financially feasible$_4$

Target Cost is equal to the Target Price minus the Target Margin$_4$

SET THE TARGET

Subsystems$_2$

Subdivide the Target Cost of the product into subsystems

- If the Target Cost is far below the estimated cost
  - Is it fair to forced each subsystem to equally reduce?
  - No, some subsystems are already as low as possible

- Target Cost of each subsystem linked to the customers' "perceived value" of the features provided by each subsystem

- Basic rule is to only include features customers are willing to pay for$_2$

Process:

- Develop a list of features provided by your product

- Have customers rank them by their importance to the product (percentage)

- Multiply the importance percentage by the Target Cost and reveal the value of that feature to the customer

- Reveals the TC for each feature

SET THE TARGET

Functional Teams (Core Groups)[3]

- Focus on reaching the cost target for each of the subsystems

- Each team must know the product TC and each subsystem's TC

- Team sizes vary on complexity

- All work as one unit

- Experience shows benefit in including individuals outside the product or project
  - Provide Fresh Ideas
  - Better development and product road maps

Cross Functional Teams[3]

- Develop initial product concept & test feasibility

- Steer the functional teams in the right direction

- Cuts time to market by reducing design reviews & engineering changes

- Maintains technical info and expertise that can be used to assist fictional teams

- Keep up with most recent developments and improvements

- Facilitates planning, design, and problem solving

ACHIEVE THE TARGET

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- Compute and Decompose Cost Gap

- Perform Cost Analysis & Assign TC to Functional Teams (Core Groups)

- Achieve Target Costs

ACHIEVE THE TARGET

Compute and Decompose Cost Gap$_3$

- Current cost estimate based on current cost factors

- Gap between current market cost and the allowable cost decomposed by:
  - Life cycle
  - Value chain

- Findings show firms which areas are in need cost reduction efforts the most

- Life cycle
  - Total product cost broken up into categories from "birth" to "death"
  - Requires estimates from R&D, manufacturing, marketing, distribution, repairs and support, and disposal.

- Value Chain
  - Separates cost on whether incurred by firm or value chain member
  - Requires estimates from firm, suppliers, dealers, and recycler

ACHIEVE THE TARGET

Perform Cost Analysis

"Customers think in terms of features but products are designed in terms of functions and components$_3$"

1. Identify features most desired by customers
   - Feature ranking method
2. Identify what functions make those features possible
   - Percentage of Contribution
3. Identify what components make up those functions
- Multiply the TC per feature times the function contribution percentage to reveal the TC for each function (Functional Team)

ACHIEVE THE TARGET

Achieve Target Costs

- Each Functional Team (Cluster Group) has a TC for their subsystem

- All groups should collaboratively progress to obtain product TC goal

- "Good communications are essential$_1$"

- Cross-Functional Groups:
  - In charge of approving trade offs between functional groups

Methods of Achievement:

- Value Engineering

- Big Room

- Co – Location

- Function and Component Analysis

- Design for "X"

- Supplier TC

ACHIEVE THE TARGET

Achieve Target Costs

Value Engineering[3]

- Functional Analysis
  - Determine what function an item performs, what it cost, and what it is worth to the customer
    - Value Index : ratio of the degree of importance to percentage of cost
      - ◆ VI > 1 = enhancement needed, not spending enough on feature
      - ◆ VI < 1 = Value engineering needed, spending too much

- Creative Thinking
  - Brainstorming about cost reduction ideas for each function
    - Evaluated if it can be eliminated, simplified, or reduced while still delivering function

- Analysis
  - Ideas most likely to reduce costs indentified for further study
    - Must be technically feasible and acceptable to a customer

- Idea Development
  - Convert ideas into concrete proposals for product or process changes

ACHIEVE THE TARGET

Achieve Target Costs

Methods of Achievement

- Big Room$_4$
  1. Bring together all teams members into large group settings
     - Facilitates discussion
     - Provides means of addressing progress on product level
     - Idea development

  2. Co – Locating teams

- Co – Location$_4$
  - Physically locate team members in the same area (office floor) during design

  - Enhances communication

  - Maximizes collaboration

  - Information travel saves time

    - No waste

ACHIEVE THE TARGET

Achieve Target Costs

Function and Component Analysis

- Examine all parts and functions of each subsystem to reveal additional opportunities for cost improvement

- Subdivide down to the appropriate component level to obtain costs for each of the components

- Identify components that contribute to most cost
  - The function of each major component reveals opportunity for cost reductions
    - Excessive capabilities
    - Functional redundancy
    - Alternative sources
    - Commercial components over custom

ACHIEVE THE TARGET

Achieve Target Costs

Design for "X"$_2$

- Process that ensures the requirements of a specific product life-cycle stage/stages are addressed and satisfied

- A tool that can be used to help achieve the product's TC, especially the full-stream costs

- Examples:
  - DFM – Manufacturing
  - DFI – Installation
  - DFR – Recycling
  - DFS – Safety

Supplier TC$_2$

- Suppliers can help identify component or subsystem adding costs without significant benefit

- Alternative approaches with adequate capabilities at a lower cost

- Learn from suppliers and validate the targets and design choices you have made

MAINTAIN COMPETITIVE COST

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- Establish Cost Plan

- Monitor Progress

- Prepare to take Action

- Kaizen Mentality

MAINTAIN COMPETITIVE COST

Establish Cost Plan$_2$

- Plan developed from sum of sales in different regions
  - Account for each products price trend and the required profit margin
  - Profit margins vary base on:
    - Customer
    - Region
    - Stage of life cycle of product

Monitor Progress$_2$

- Track actual costs in comparison to the cost plan
  - Must account for areas such as:
    - Changes in Volume
    - Changes in Mix
  - Other areas to monitor for costing purposes:
    - Spare parts
    - Options
    - Other low volume areas

MAINTAIN COMPETITIVE COST

Prepare to take Action$_2$

- Keep eye on market, competitor development, and product enhancements

- If actual costs are not meeting the plan, action must be taken to fix it
  - Identify root causes
  - Propose remedies
  - Implement improvements

Kaizen Mentality

- Develop and support culture that encourages continuous improvement

- Reward ideas that develop into practice

- Encourage employees to approach management with improvement ideas to save time & money, promote employee well being or improve the product

REFERENCES

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