

TARGET COSTING

Project Design & Cost Management

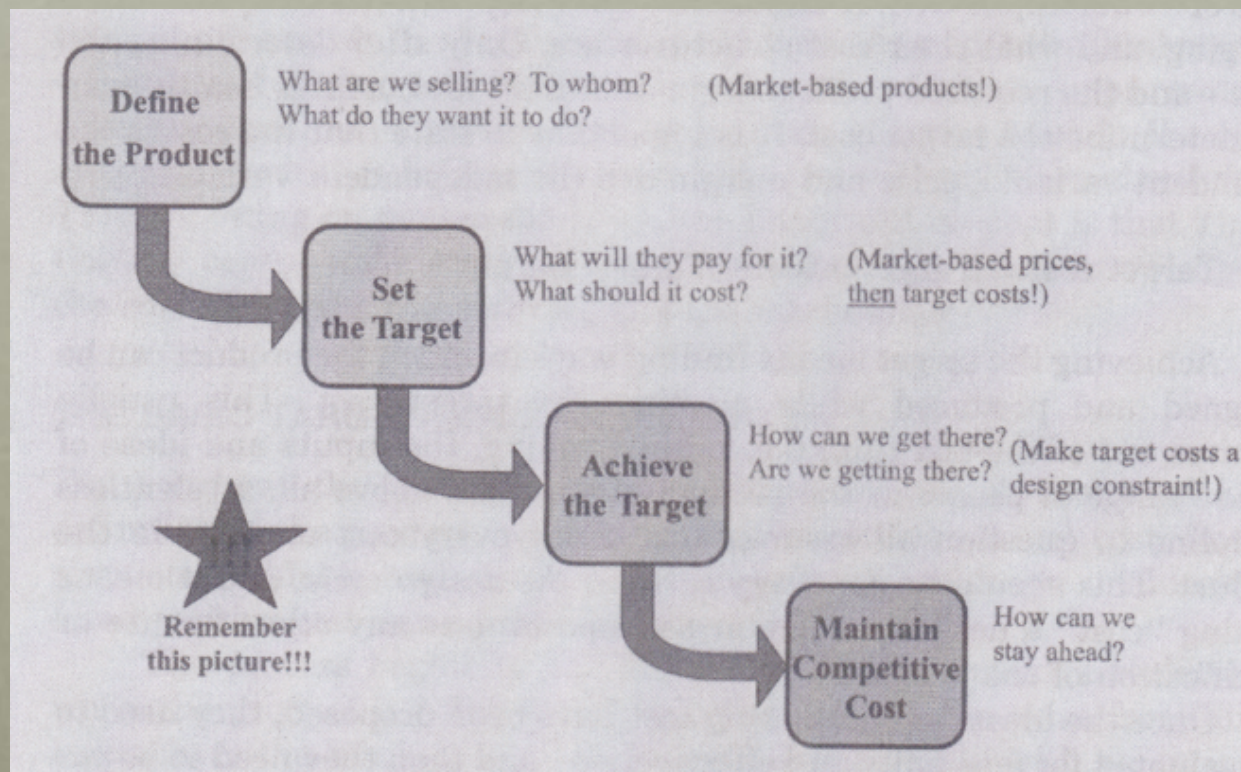
TARGET COSTING

- “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 price₁”
- Objective: “design costs out of products, not try to find ways to eliminate costs after products enter production₁”

Target Costing Process

- Define the Product
- Set the Target
- Achieve the Target
- Maintain Competitive Cost₂

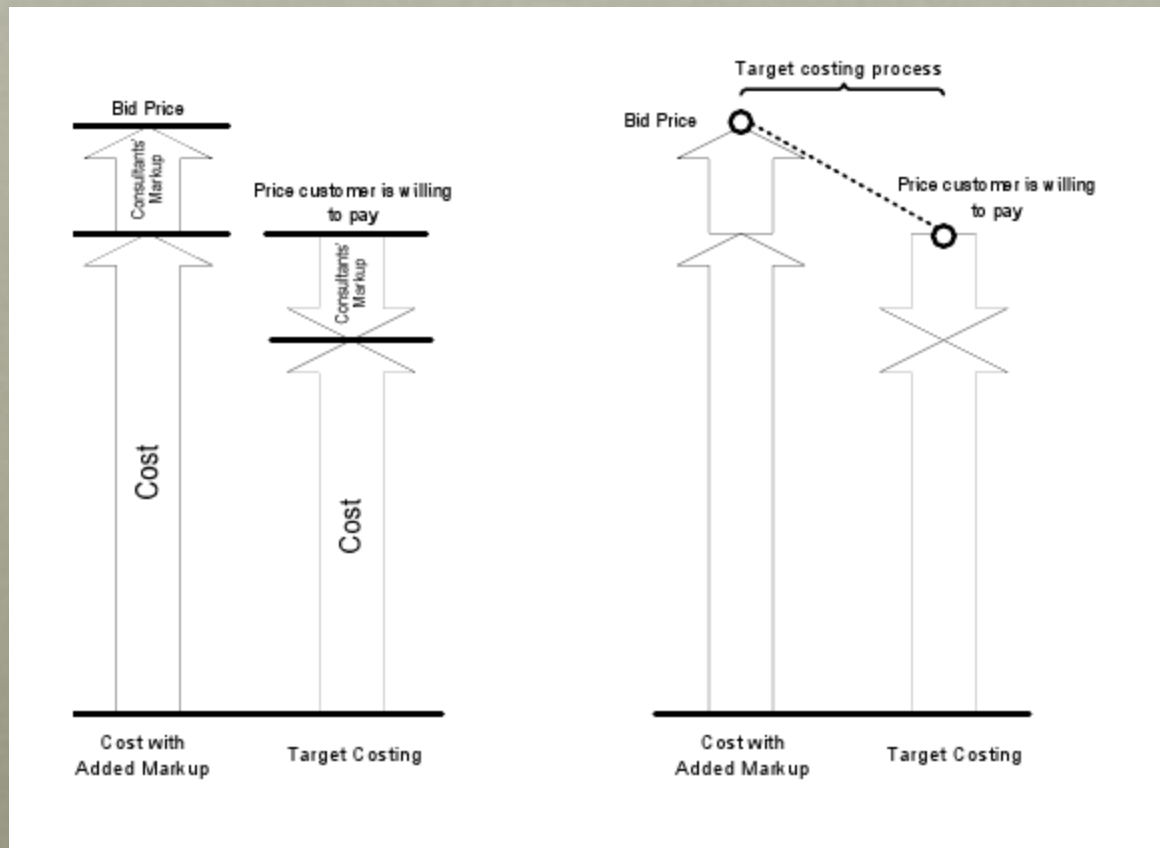
TARGET COSTING



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Target Costing Overview

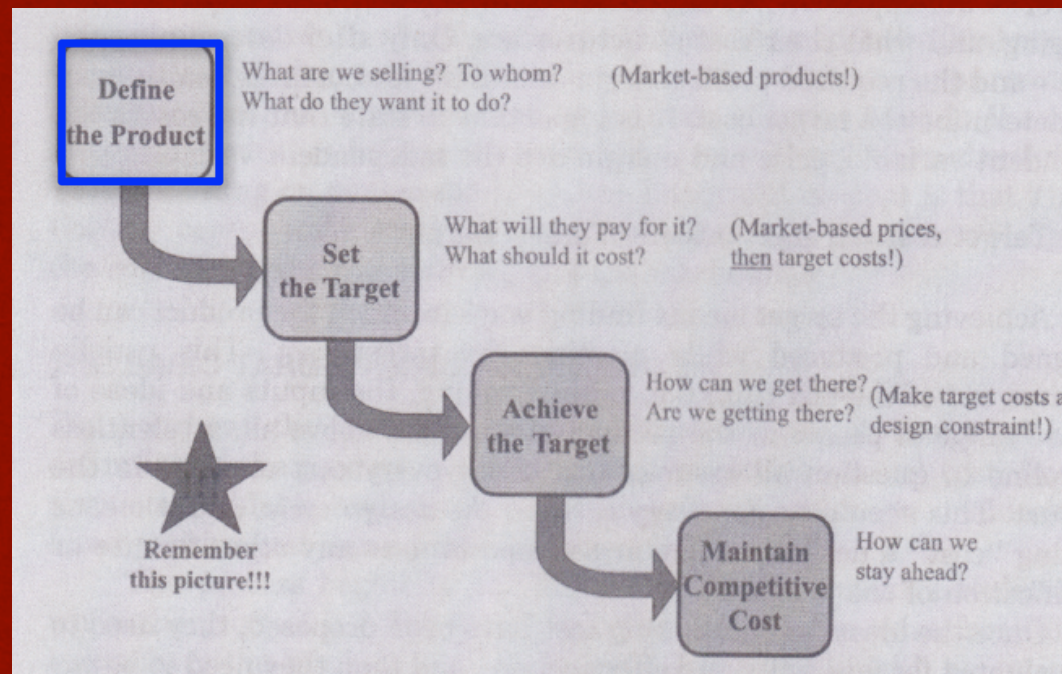
TARGET COSTING



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Target Costing Overview

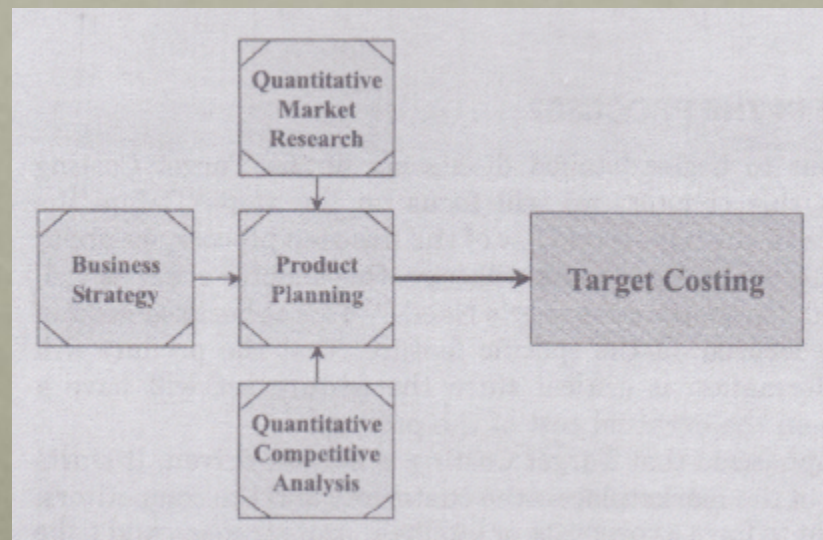
DEFINE THE PRODUCT



DEFINE THE PRODUCT

- **Competitive Analysis₂**
 - Competitive Price and Feature
 - Competitor Cost Structure
 - Reverse Engineering
- **Customer Knowledge₂**
 - Quantifying Needs
 - Conjoint Analysis
 - Feature/Price Data₃
 - Attribute/Price Data₃
- **Marketing Research₂**
 - Provides quantitative info about customer needs/wants
 - Reveal unrecognized niches₃
 - Public Information
 - Analysts' Reports
- **Product Planning₂**
 - Analyzing all three areas and determining what segment to concentrate on

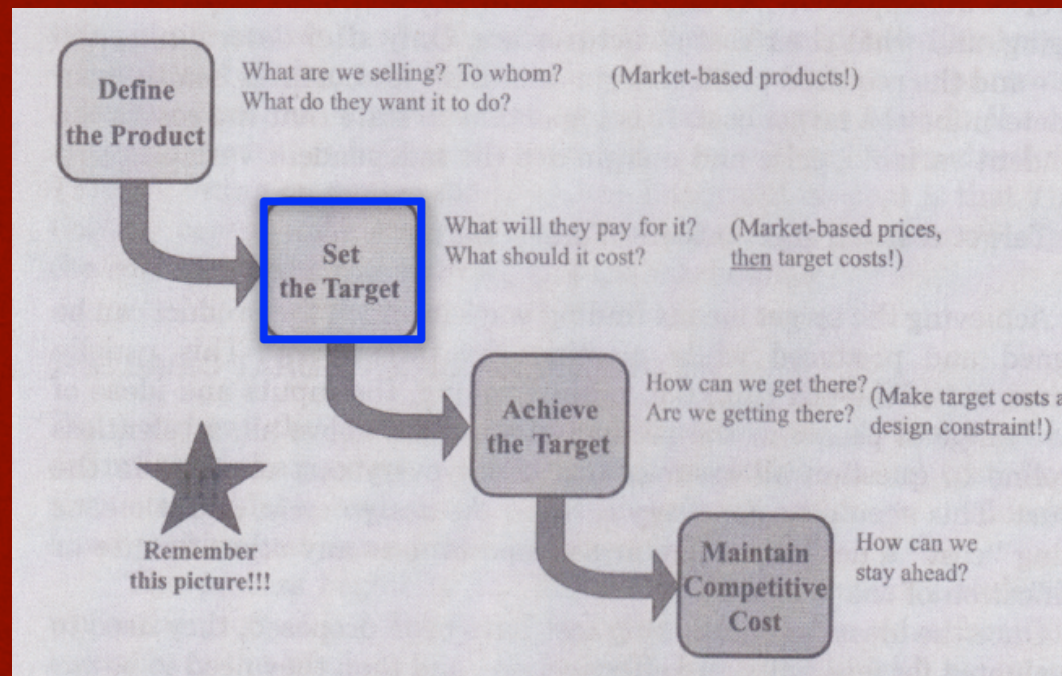
DEFINE PRODUCT



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Influencing factors in Defining the Product

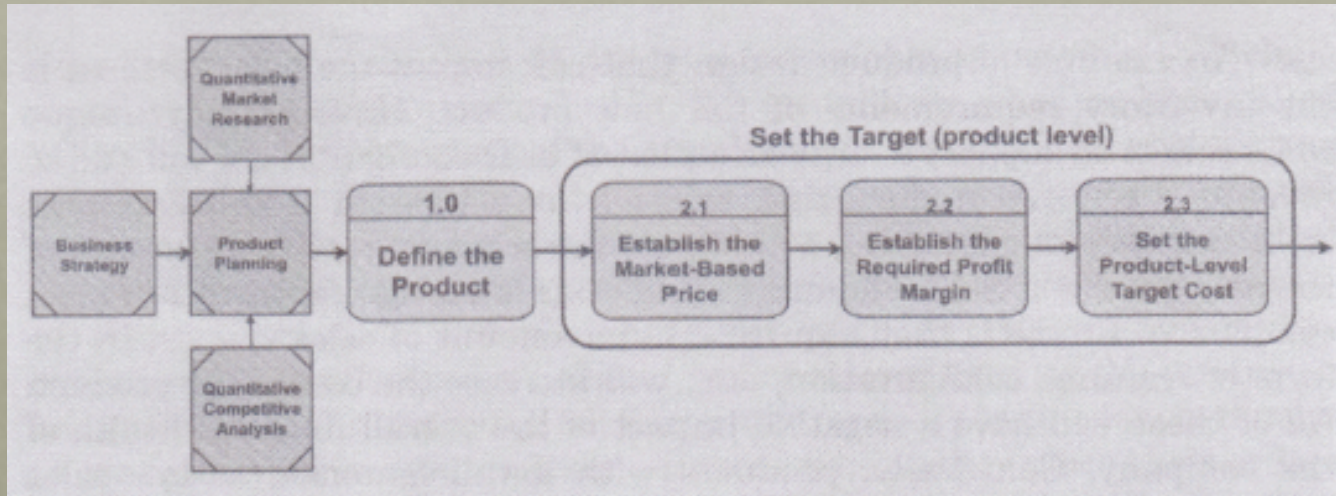
SET THE TARGET



SET THE TARGET

- Establish Price
- Know Costs
- Determine Profit Margin
- Develop Subsystems
- Functional and Cross Functional Groups

SET THE TARGET

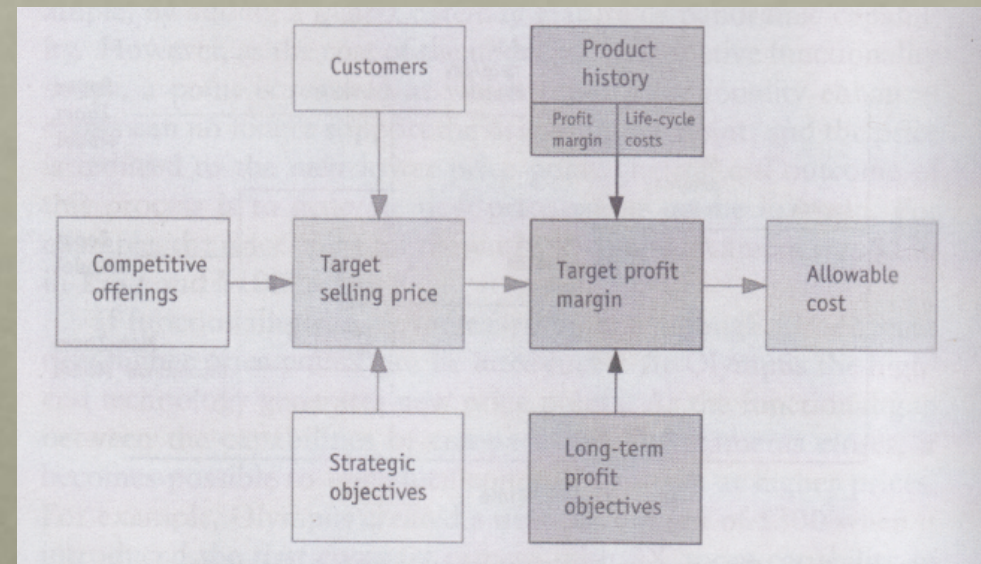


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Setting the Target: Price, Margin, Cost

SET THE TARGET

- Establish Price₂
 - Based upon the information gathered when defining the product
 - Experience Curves
- Determine Profit Margin₂
 - Corporate profit expectations
 - Competitive analysis
 - Historical results
- Know Your Costs₂
 - Look at all factors significantly affecting product cost

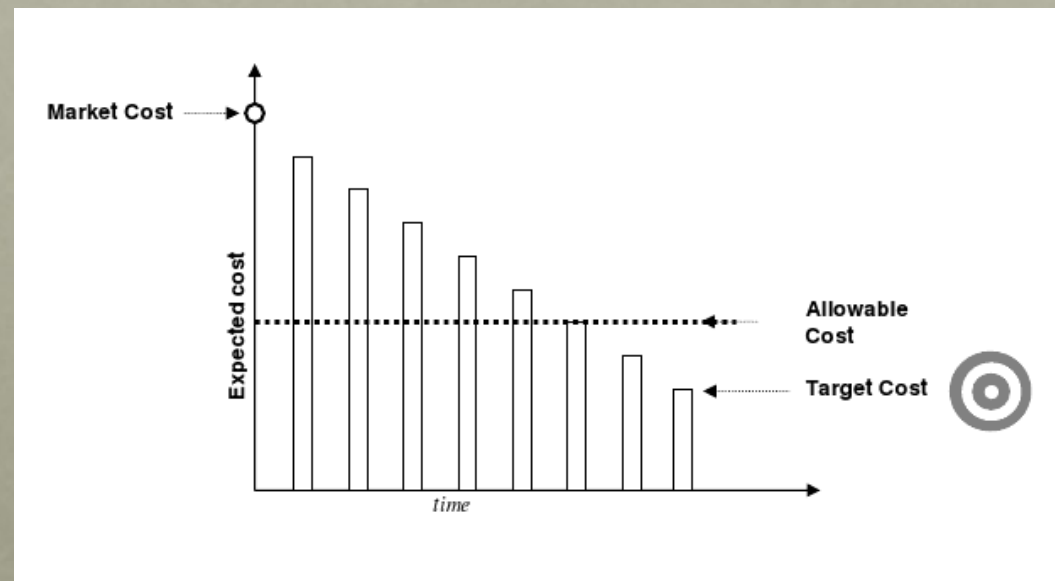


SET THE TARGET

Market Cost is a benchmark cost, cost for a comparable project₄

Allowable Cost is the maximum allowable cost to be financially feasible₄

Target Cost is equal to the Target Price minus the Target Margin₄

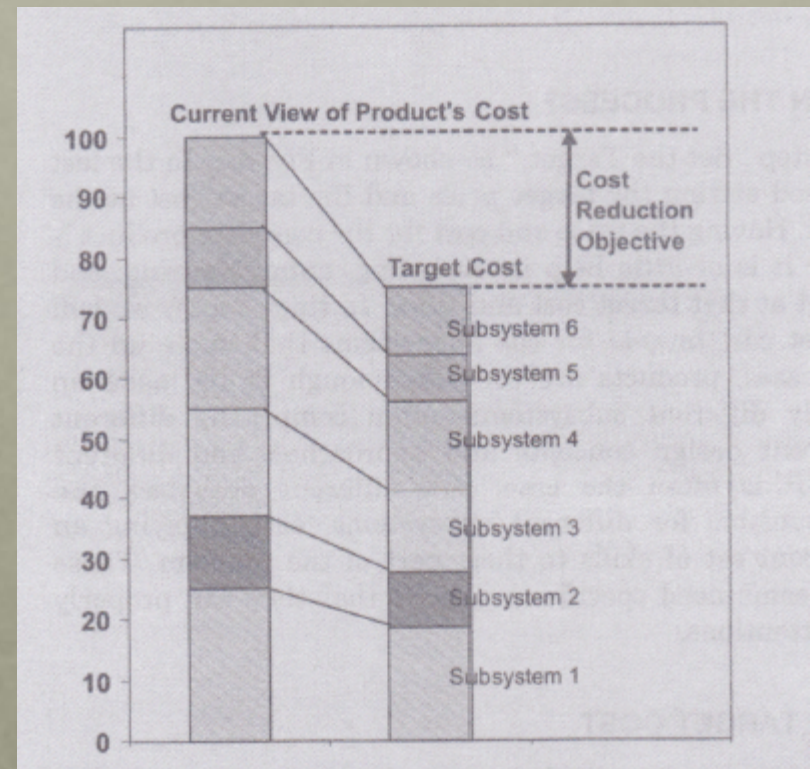


SET THE TARGET

Subsystems₂

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 for₂



SUBSYSTEMS

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

Customer Requirements	Customer Ranking		Relative Ranking (%)
	1 (not important)	5 (very important)	
Coffee tastes and smells like espresso		5	20%
Easy to clean		4	16
Looks nice	2		8
Has 6+ cup capacity		3	12
Starts automatically at designated time		4	16
Works well with different coffee beans	1		4
Keeps the coffee warm		3	12
Automatically shuts off		3	12
Total			100%

SET THE TARGET

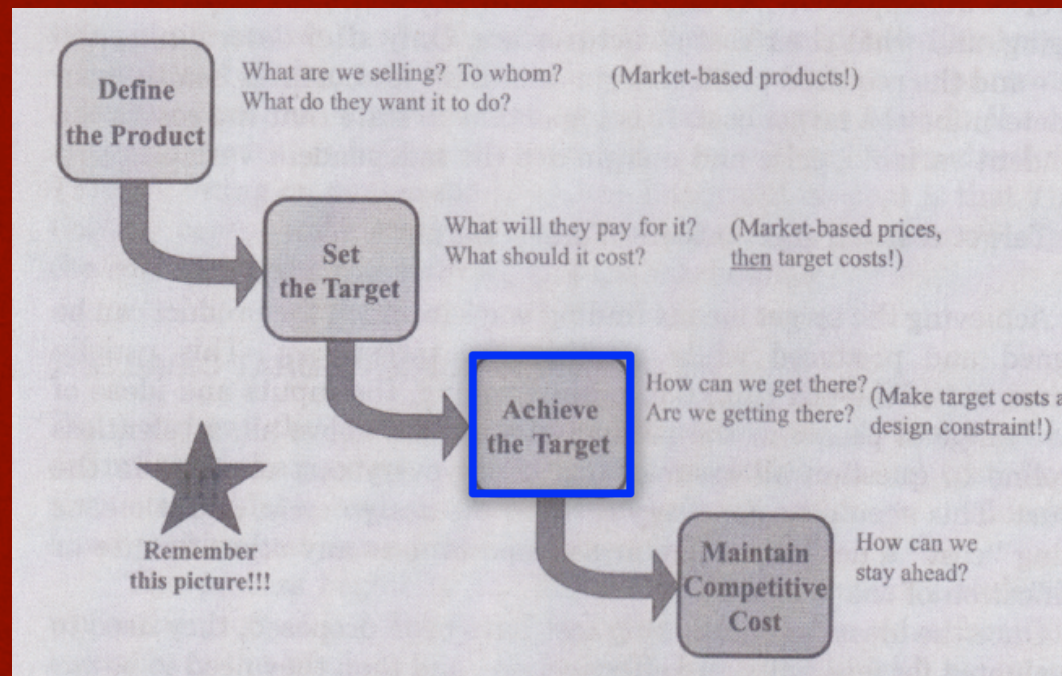
Functional Teams (Core Groups)₃

- 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 Teams₃

- 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 functional teams
- Keep up with most recent developments and improvements
- Facilitates planning, design, and problem solving

ACHIEVE THE TARGET



ACHIEVE THE TARGET

- 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 Gap₃

- 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

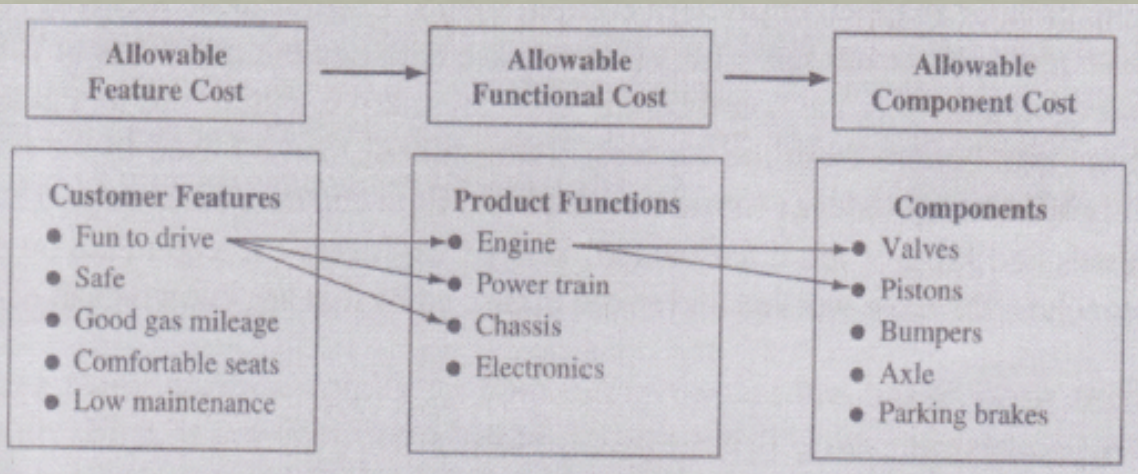
ACHIEVE THE TARGET

Perform Cost Analysis

“Customers think in terms of features but products are designed in terms of functions and components₃”

- 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)

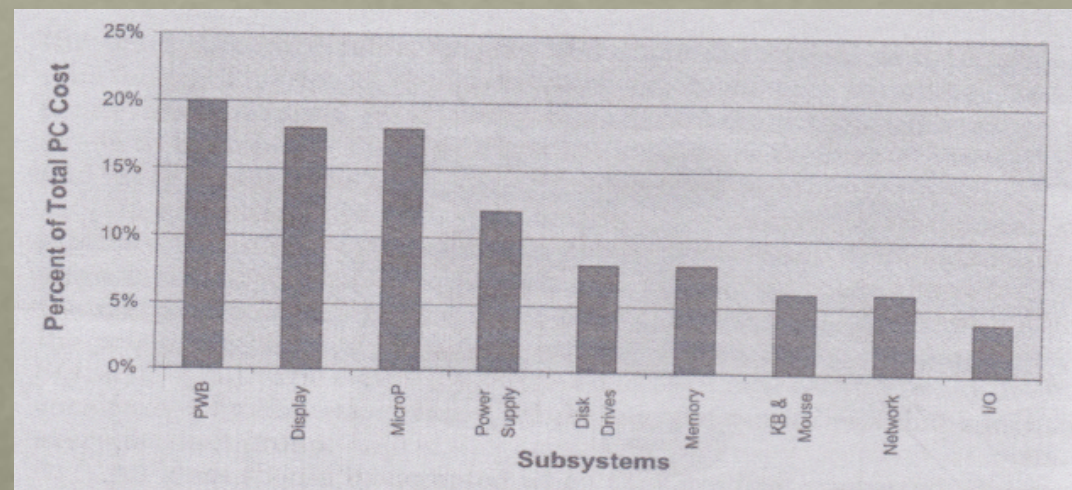
FUNCTIONAL TARGET COST



Feature to Component Breakdown

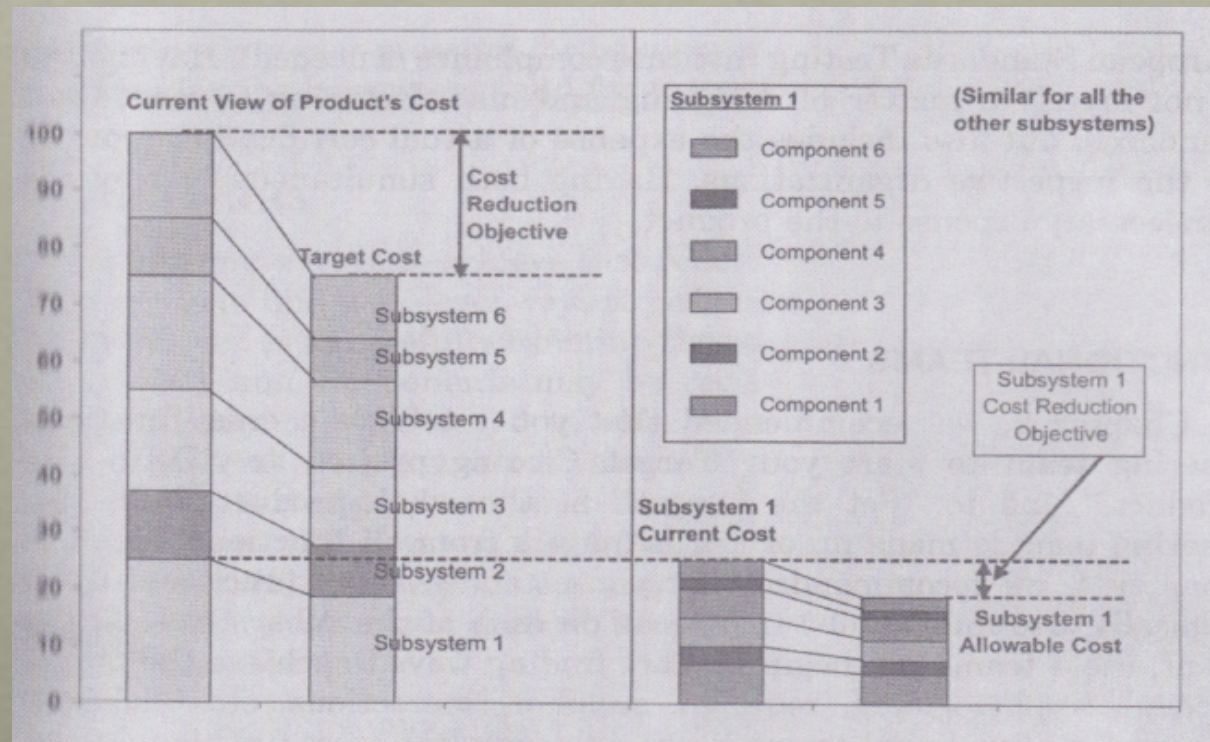
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Function Contribution Percentage



2

FUNCTIONAL TARGET COST



2

Functional Target Cost

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 essential₁”
 - 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

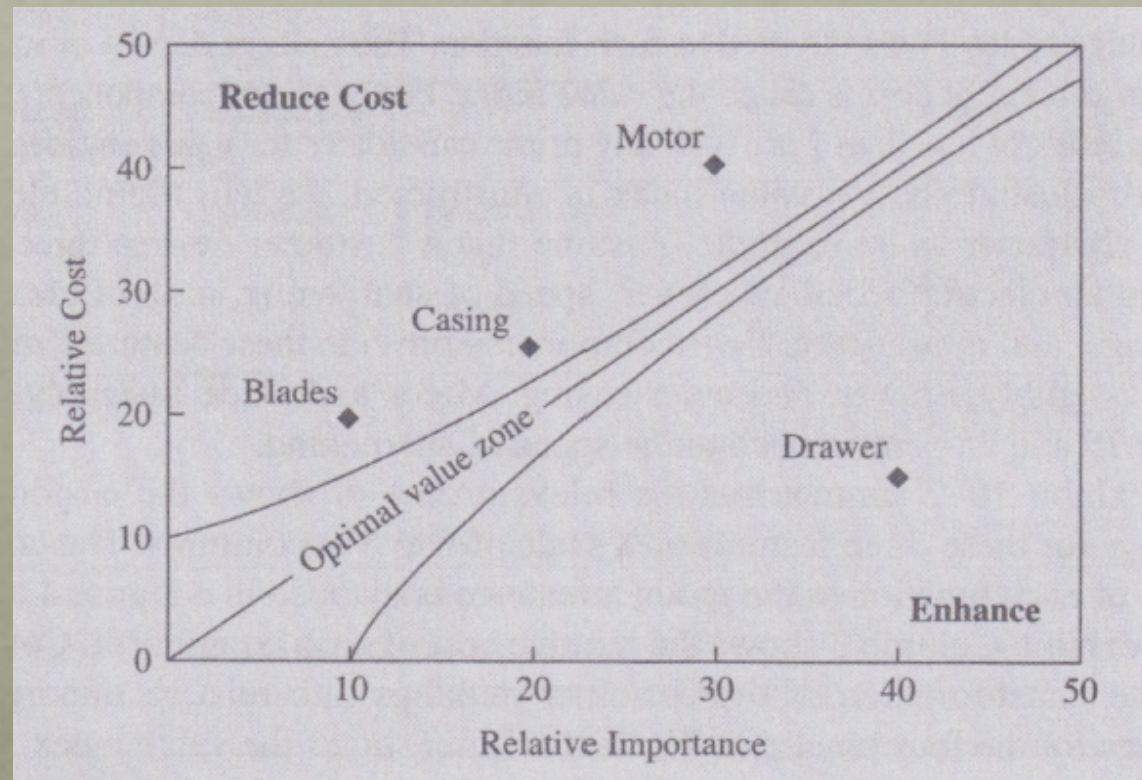
ACHIEVE THE TARGET

Achieve Target Costs

Value Engineering₃

- **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

VALUE INDEX



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Ratio = Degree of Importance :
% of Cost

ACHIEVE THE TARGET

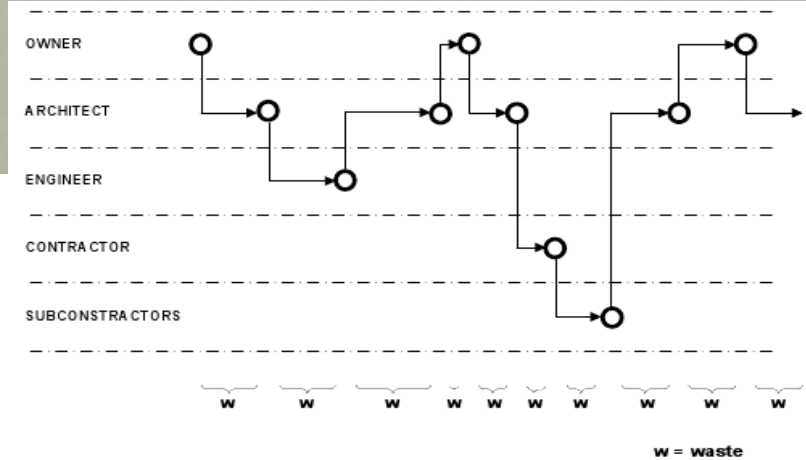
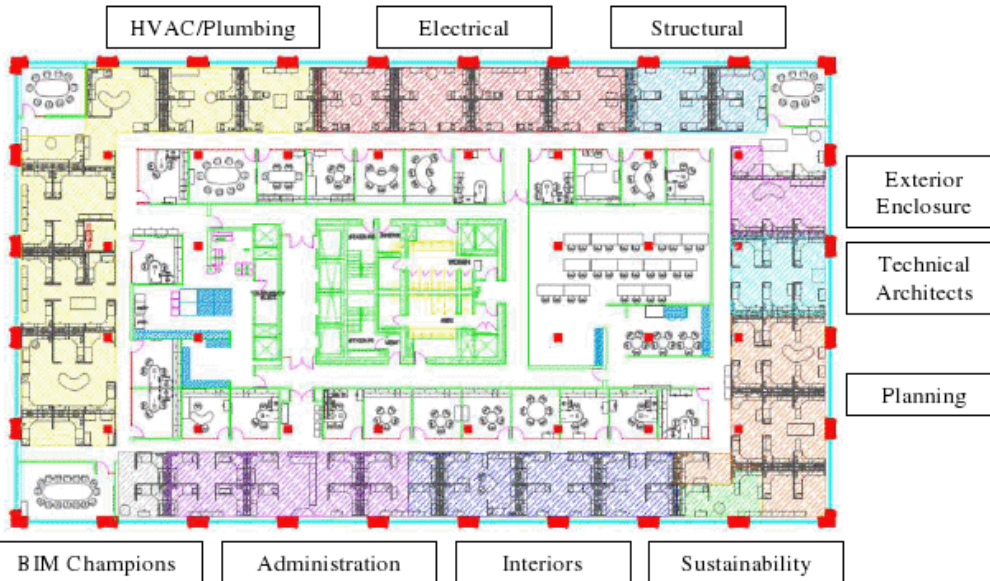
Achieve Target Costs

Methods of Achievement

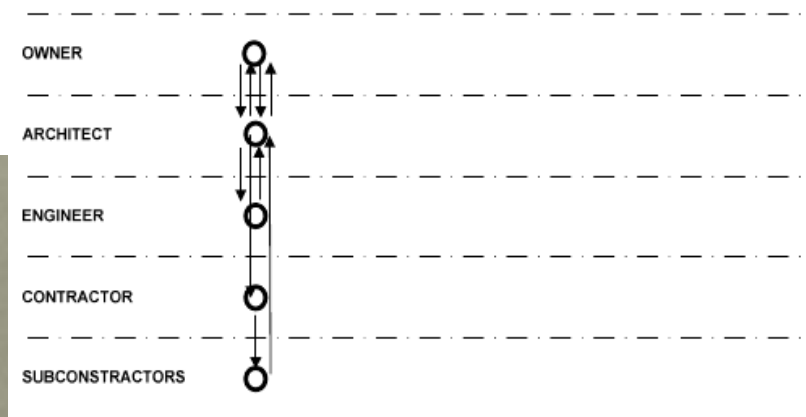
- **Big Room₄**
 - 1 **Bring together all teams members into large group settings**
 - Facilitates discussion
 - Provides means of addressing progress on product level
 - Idea development
 - 2 **Co – Locating teams**
- **Co – Location₄**
 - Physically locate team members in the same area (office floor) during design
 - Enhances communication
 - Maximizes collaboration
 - Information travel saves time
 - No waste

CO-LOCATION

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Effects of Co-Location: Communication



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Co-Location Example

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

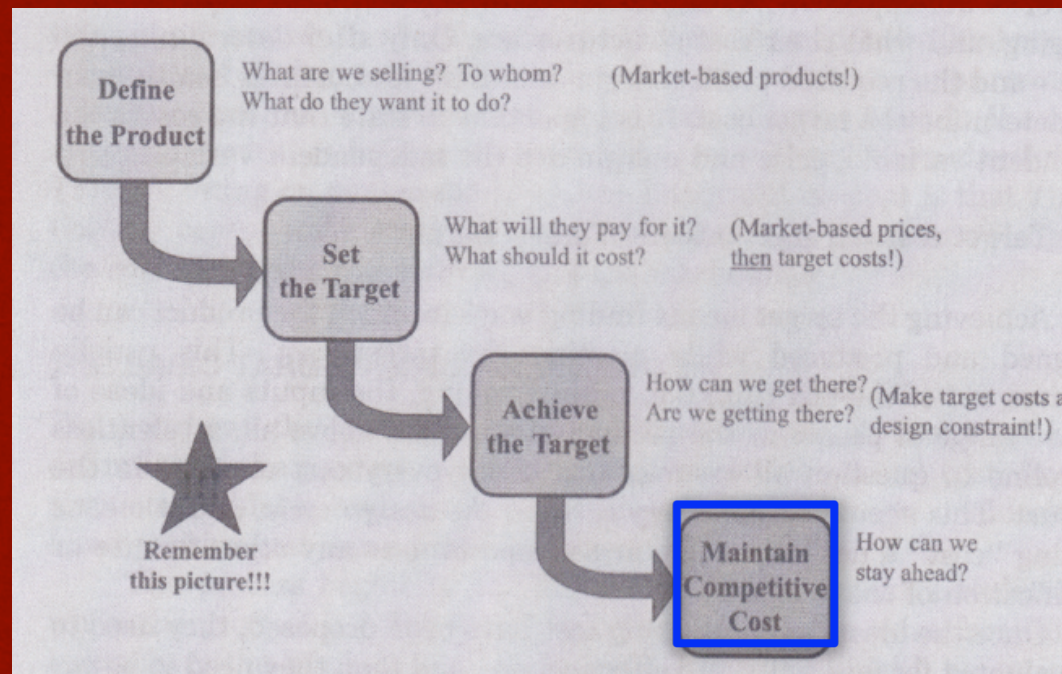
Design for “X”₂

- 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 TC₂

- 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



MAINTAIN COMPETITIVE COST

- Establish Cost Plan
- Monitor Progress
- Prepare to take Action
- Kaizen Mentality

MAINTAIN COMPETITIVE COST

Establish Cost Plan₂

- 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 Progress₂

- 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 Action₂

- 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

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- 4 Rybkowski, Z.K. (2009). "The application of root cause analysis and target value design to evidence-based design in the capital planning of healthcare facilities." Dissertation, University of California, Berkeley, Ca.