1)

UNIT

DATE 15 02 2014

VALUE :- "Value is the lowest cost to reliably provide the required function of service at desired time and place with an essential quality".

$$\text{Value} = \frac{\text{Function}}{\text{Cost}}$$

Ways of Increasing the Value :-

1) By decreasing the cost and maintaining same function $V = \frac{F \rightarrow}{C \downarrow}$
2) By increasing the function and keeping cost constant $V = \frac{F \uparrow}{C \rightarrow}$
3) By increasing the function and decreasing the cost $V = \frac{F \uparrow}{C \downarrow}$
4) By slight increase in cost and major increase in function $V = \frac{F \uparrow\uparrow}{C \uparrow}$

VALUE ANALYSIS :- (according to Lawrence D. Miles)

A Problem Solving, Organized System, which is an Creative approach which has its purpose of effective identification of unnecessary cost which provides neither quality nor use nor appearence nor Customer features.

VALUE ENGINEERING :-

The Value analysis techniques applied during the initial drawing stage of a new product. Then that is Value engineering.

VALUE MANAGEMENT :-

The Value analysis Techniques is applied to service industries like educational institutes, hotels, banks and other service industries then its Value mgt.

1)

Definition of Value:

Value has to do with how much something is worth, either in terms of cash or importance.

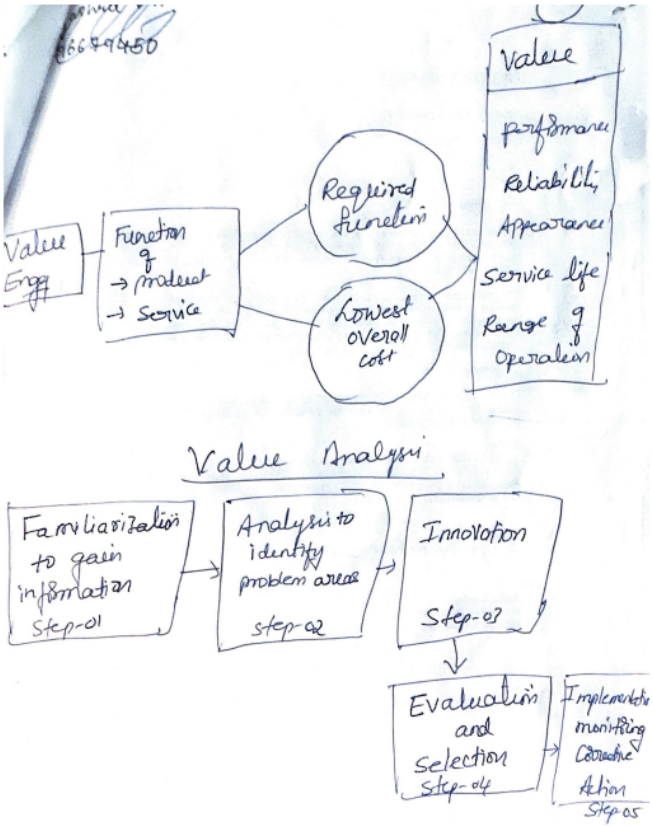
Verb: "Holding something in high regard" (like I value our friendship)

- how much somethings is worth like a prize valued at $200
- Value is the monetary, material of assessed worth of an asset, good or service.
- Value is providing a way for a person to accomplish their goal in a better way.
- value (economics) a measure of the benefit that maybe gained from goods or service

Value engineering is a systematic method to improve the value of goods or products and services by ~~examination of functions~~. that the project

$$\text{Value} = \frac{\text{Function or process produces.}}{\text{cost}}$$

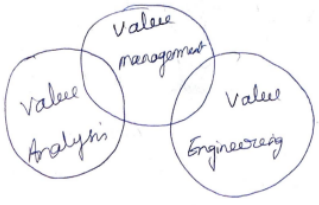
Value can be increased by either improving the function or reducing the cost



Value Engineering

An analysis of materials, processes and products in which functions are related to cost and from which a selection maybe made so as to achieve the desired function at the lowest overall cost Consistent with performance

- An Organized, Creative, Cost Search Technique for Analyzing the function of a product with the purpose of Value Enhancement Without Compromising with its quality, performance and efficiency



1)

Value analysis

Information phase

↓

Function Analysis phase

↓

Creative phase

↓

Evaluation phase

↓

Development phase

↓

presentation phase

Value management

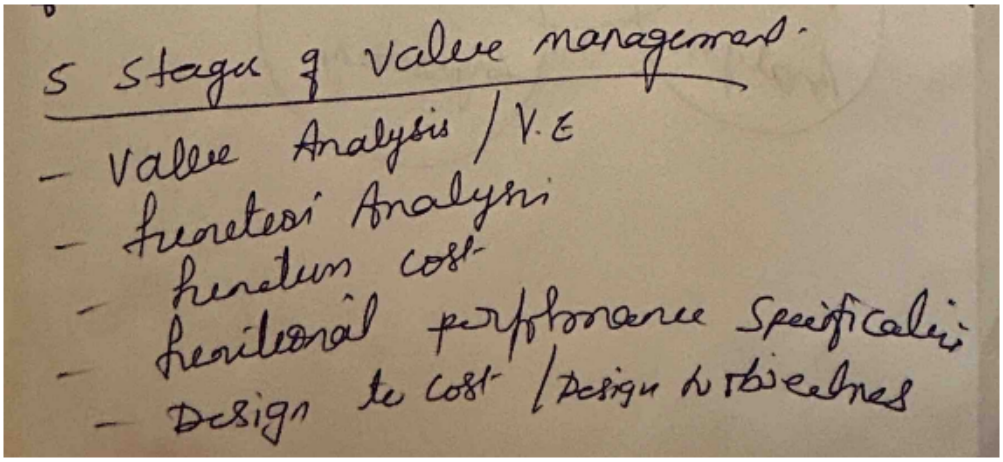
V.M. is a systematic and collaborative approach to understanding, defining and delivering value to stakeholders. It involves the identification of key objectives, analysis of functions, evaluation of alternatives and implementation of innovative solutions.

2)

Sure, here are the advantages of value analysis presented in neat points:

1. **Cost Reduction**:
    2. Identifies unnecessary costs and eliminates them without affecting the functionality or quality of the product.
3. **Improved Efficiency**:
    4. Streamlines processes and operations, leading to better resource utilization and productivity.
5. **Enhanced Product Quality**:
    6. Focuses on enhancing the value of the product by improving its quality, reliability, and performance.
7. **Innovation and Creativity**:
    8. Encourages creative thinking and innovation by challenging existing assumptions and exploring new alternatives.
9. **Customer Satisfaction**:
    10. Aligns the product features with customer needs and expectations, leading to higher satisfaction and loyalty.
11. **Competitive Advantage**:
    12. Helps companies offer better value products at lower costs, providing a competitive edge in the market.
13. **Cross-Functional Collaboration**:
    14. Promotes teamwork and collaboration across different departments, fostering a holistic approach to problem-solving.
15. **Risk Management**:
    16. Identifies potential risks and mitigates them through thorough analysis and evaluation.
17. **Sustainability**:
    18. Supports sustainable practices by reducing waste and optimizing resource use, contributing to environmental conservation.
19. **Continuous Improvement**:
    20. Encourages ongoing evaluation and refinement of processes and products, leading to continuous improvement and long-term success.

3)


5 stage of value management.
- Value Analysis / V.E
- Function Analysis
- Function cost
- Functional performance Specification
- Design to cost / Design to Objectives

4)

Explain Coaching of Champion Concept. (*) (10 M)

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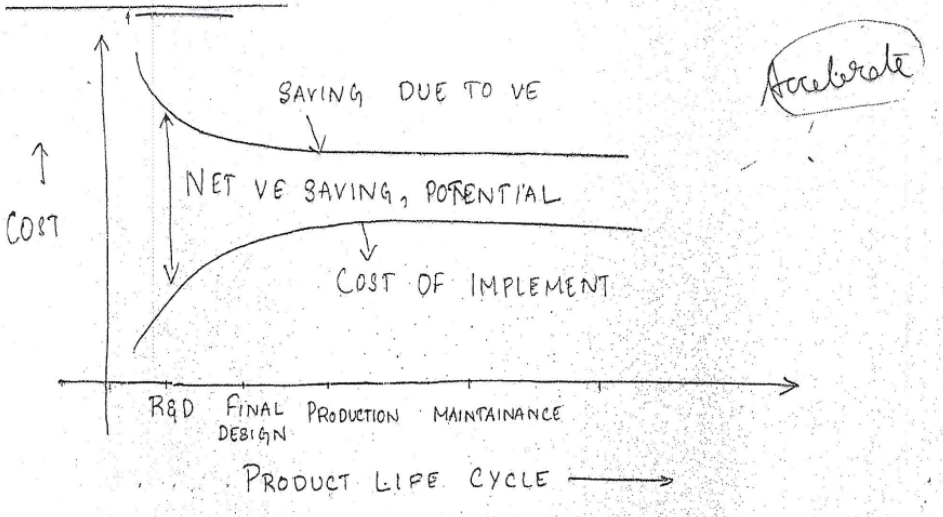
Project Implementation &

VA 3



Accelerate

Study about Nano Car . Diff b/w Nano & maruti 800

Coaching & champion Concept in Value Engineering?

In Competitive endeavor it is often essential to win. If a business doesnot "win" its share of sales Jobs are lost.

The best champion knows how to play the game effectively but still the Coach require to improve his specific skill for competition.

So whenever costs are too high" is the problem, Value analysis "coaching" is Specific to this need.

TO BE A CHAMPION
YOU HAVE TO
TRAIN WITH CHAMPIONS

5)

Value analysis is a systematic approach to improving the value of a product or process by examining its functions and finding ways to achieve those functions at the lowest possible cost without sacrificing quality. The phases of value analysis are typically divided into the following steps:

1. **Information Phase**:
    2. **Objective**: Gather all relevant information about the product or process.
    3. **Activities**: Collect data on costs, materials, specifications, performance, customer requirements, and existing design.
    4. **Outcome**: Develop a comprehensive understanding of the current state and baseline for further analysis.
5. **Function Analysis Phase**:
    6. **Objective**: Identify and understand the primary and secondary functions of the product or process.
    7. **Activities**: Define and classify functions, often using a verb-noun format (e.g., "hold liquid," "provide support").
    8. **Outcome**: Create a function model or function analysis diagram that maps out all identified functions and their relationships.
9. **Creative Phase**:
    10. **Objective**: Generate a wide range of ideas and alternatives to perform the identified functions at a lower cost.
    11. **Activities**: Use brainstorming, lateral thinking, and other creative techniques to develop alternative solutions.
    12. **Outcome**: Compile a list of potential ideas and solutions for further evaluation.
13. **Evaluation Phase**:
    14. **Objective**: Assess the feasibility and impact of the ideas generated in the creative phase.
    15. **Activities**: Analyze the cost, performance, feasibility, and impact of each idea. Rank or score the ideas based on criteria such as cost savings, ease of implementation, and potential benefits.
    16. **Outcome**: Select the most promising alternatives for further development.
17. **Development Phase**:
    18. **Objective**: Develop the selected ideas into practical solutions.
    19. **Activities**: Refine and detail the chosen alternatives, create prototypes, perform tests, and conduct feasibility studies.
    20. **Outcome**: Develop detailed proposals or plans for implementing the selected solutions, including cost estimates and potential impacts.
21. **Presentation Phase**:
    22. **Objective**: Present the developed solutions to stakeholders for approval and support.
    23. **Activities**: Prepare and deliver presentations, reports, and documentation that explain the proposed solutions, their benefits, and implementation plans.
    24. **Outcome**: Obtain buy-in and approval from decision-makers and stakeholders.
25. **Implementation Phase**:
    26. **Objective**: Put the approved solutions into practice.
    27. **Activities**: Execute the implementation plan, monitor progress, and make necessary adjustments.
    28. **Outcome**: Achieve the desired improvements in value by reducing costs and/or enhancing performance without compromising quality.
29. **Follow-Up Phase**:
    30. **Objective**: Ensure the implemented solutions deliver the expected benefits.
    31. **Activities**: Monitor the outcomes, measure the results against expectations, and conduct post-implementation reviews.
    32. **Outcome**: Validate the success of the value analysis efforts, identify any further improvements needed, and ensure the changes are sustained over time.

These phases provide a structured approach to systematically improving the value of products or processes, leading to cost savings, enhanced quality, and better overall performance.

6)

Difference b/w Value analysis & Value Engg. (4M)

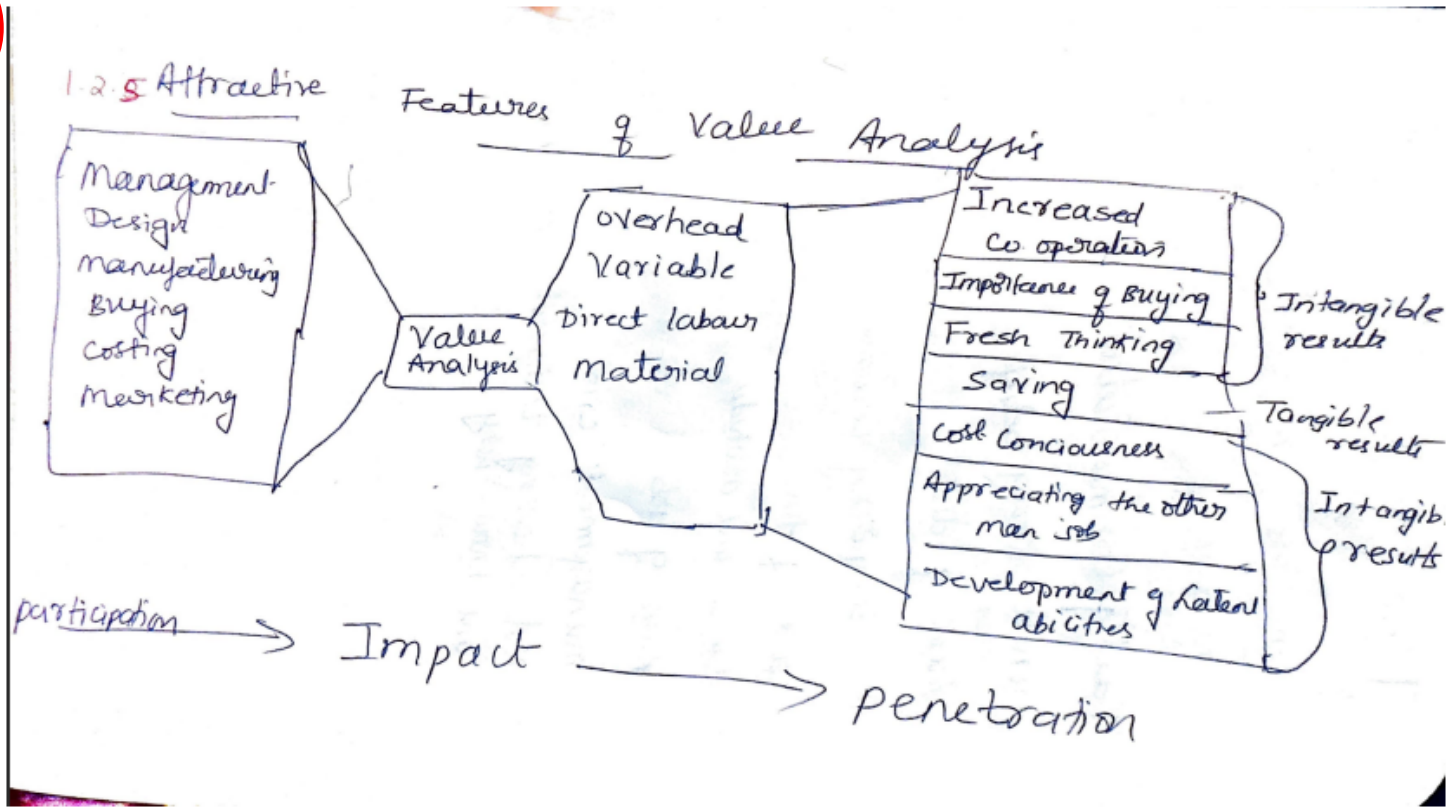
Value Analysis	Value Engineering
1) It's a process of determining the unnecessary cost in a system	1) It is process of determining the unnecessary cost at the initial stage
2) It is done on existing Product	2) It is done on a new product
3) It is reactive in nature	3) It is proactive in nature.
4) There will be product to analyse.	4) No product to analyse
5) Implementation cost is more in VA (Prodt manf already)	5) Implementation cost is less in VE

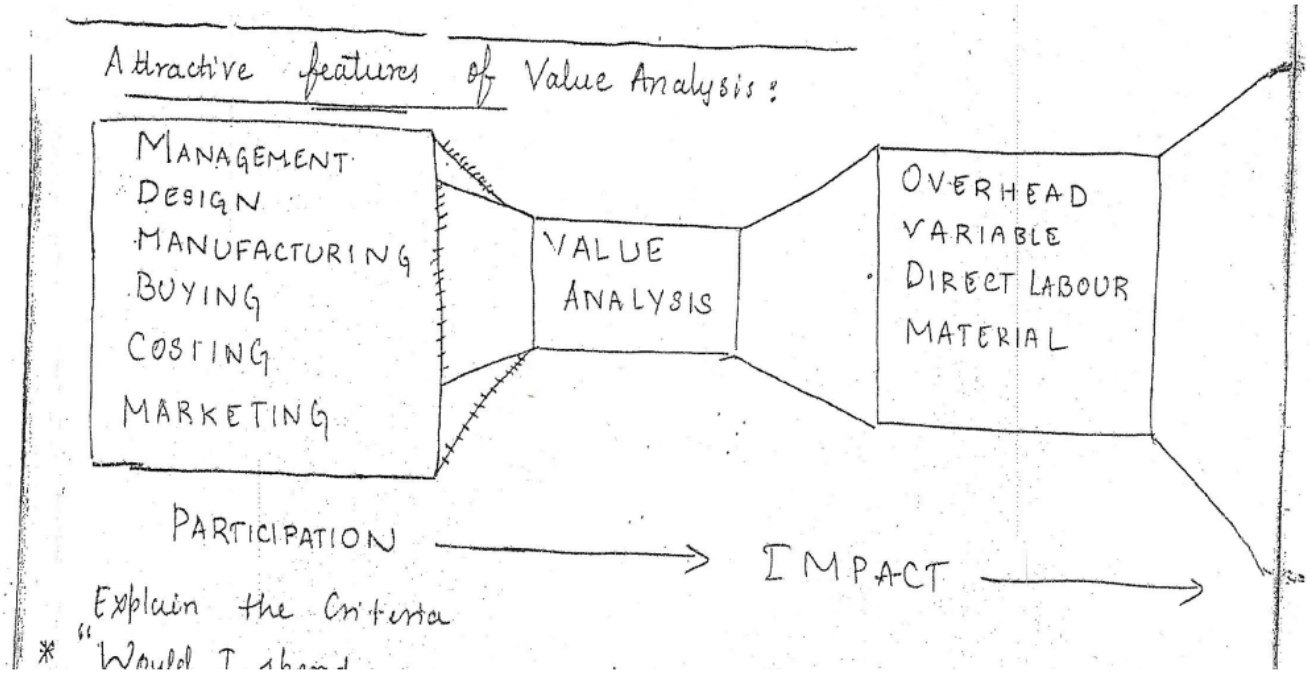
Basic comparison	Value Analysis	Value Engineering
Meaning:	Value Analysis is a cost reduction technique applied to the existing product with the aim of enhancing its worth	V.E is a technique used before product gets approved for fabrication
(2) Nature of process	Remedial process	preventive process
(3) Applied when	After the product is in introduction	At the design stage
(4) objective	To get better optimized commercial output	to get better engineering results
(4) Worked out	With the help of knowledge and experience	With the help of specific technical knowledge

Value Analysis Vs Value Engineering (5)

	V. A	V. E
Ensures	Elimination of unnecessary cost	prevention of unnecessary cost-
Change	may change the existing stage of the product & problem	changes by V. E are implemented at initial stages only.

7)





Explain the Criteria

* "Would I share

8)

Procedure by Simulation Method / 12 Question Method or GAUGE TECHNIQUE

1. The frame Work of Value Analysis is Contained in the following 12 Questions.

2) What does it Cost ?
3) How many parts ?
4) What does it do ?
5) How many required ?
6) Which is the primary function ?
7) What else will do ?
8) What will that Cost ?
9) Which three of the alternatives ways of doing the job show greatest difference between the Cost and used value ?
10) Which ideas are to be developed ?
11) What other functions, specifications, features must be incorporated
12) What do we need to sell our ideas and forestall roadblocks. ?

ex :- Duster.

1) What is it ?
   It is a Duster.
2) What does it Cost ?
   Its cost ~~is~~ ~~Gained~~ is ₹20
3) How many parts ?
   There are 3 parts. Plastic holder, fur and glue.

4) What does it do ?
   Plastic Holder → Holds the fur.
   Fur → To erase the board.
   Glue → Sticks ~~holder~~ fur to holder
5) How many required ?
   According to the forecast around 1 lakh pieces.

8)

6) Which is the primary function?

Cleaning the black board.

DATE

7) What else will do?

Cloth, sponge, paper, cotton, Hand, Water, broom. Brush, Fresh paint, Coir, Wiper, Tissue

8) What will that cost?

Cloth → ₹10 ✓
sponge → ₹5 ✓
paper → ₹1
Cotton → ₹15/kg
Hand → Free
Water → ₹2
broom → ₹15
Brush → ₹17
~~Broom →~~
Paint → ₹150
Coir → ₹40
wiper → ₹120
Tissue → ₹20

9) Which three of the alternatives ways of doing the job show greatest difference b/w the cost and end Value?

sponge — ₹5
cloth — ₹10
Paper — ₹1

10) Which ideas are to be developed?

sponge idea is to be developed.

11) What other functions, specifications, feature must be incorporated?

100mm length, 50mm width,

12) What do we need to sell our idea and forestall road blocks?

1) Cost effective.
2) reusable and washable.

The GAUGE technique is a systematic approach often used in various fields, including project management, quality control, and software development, to assess and improve processes, systems, or products. GAUGE is an acronym that stands for **Gather, Assess, Understand, Generate, and Evaluate**. Let's break down each step and provide an example to illustrate how the technique can be applied.

9)

6M Value Analysis	Traditional Cost Redⁿ Technique
definition 1) It is an effective tool for Cost Reduction yet it differs from all other Conventional and traditional approach to Cost Reduction such as Industrial Engg, Production Engg and so forth.	post production 1) It is Concerned with Post Production Stage but Value analysis can be used at Pre production as well as post Production stage.
designed products 2) Value Analysis on the other hand doesn't accept the designed products and its Component as is but advocates Cost reduction through identification of the function and subsequent redesign of products so as to make it perform its function at a lowest possible Cost. Value Analysis therefore challenges every design specs design requirements and design itself	2) Traditional approaches are method Centered they accept drawing of the part as it is and therefore said to improve the part through analysis of manufacturing methods, M/c, materials jigs and fixtures used.

cost centered

(3) Traditional Methods are Cost Centered while Value analysis in addition to Cost improvement its seeks improvement in quality, reliability, maintainability, safety performance, attractive features etc.

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more important (4) Value Analysis is most important than Traditional regular Cost reducing technique. Even after the application of the Traditional Cost reducing technique 10-20% of the Cost can be reduced by applying VA.

5) Cost reducing technique generally relates to existing products and is Concerned with attempt to manufacture them at lower cost by minimising the material Cost, changing the design of the part changing tolerances and so on. whereas Value Analysis begins with examination of purpose of the function of the product and is Concerned with establishing the means by which the purpose or functions can be fulfilled.

10)

Symptoms to apply Value Analysis :- (8M)

VA2

I) VA can be applied when one or more of the following symptoms are present.

Design 1) Design is more than 10 to 15 yrs old.

Profitability 2) Profitability is less.

competition 3) Product facing Severe Competition in the market.

cost 4) Increase in the material Cost.

complaints 5) Customer Complaints.

scrap 6) If the Scrap generation is more

government 7) Change in government rules and regulation.

technology 8) The change in technology (reluctance to adopt new tech)

imported 9) Imported items

product 10) Introduction of new product

complex assembly 11) Very Complex assembly.

ABC 12) Carrying out ABC analysis and selecting A items.

sales 13) If the Sales are poor

14) Too tight tolerances and unnecessary surface finish.

operations 15) Too many operations involved.

operational 16) Experiencing many operational problems.

17) Heavy rejection.

procuring 18) Difficulties in procurring raw materials.

test 19) Often failing in test.

20) Product involving high Inventiory

21) Too many parts and sub assemblies in the product.

22) Product Consuming high tooling Cost.

23) Functions/operations which are costing too much.

24) Product which show a fall in profit.

11)

UNIT - 2

24/02/2016

REASONS FOR UNNECESSARY COST

Reasons ⊛ (8M) (3a) (Qn)

1) Faulty Communication :-

Lack of Communication and ability to Communicate is undesirable and permanently linked with ones back ground, education, and training The major source for Core actions and wrong decision is miss understandings & miss interpretations lead to unnecessary Cost.

1) What I thought he said.
2) I understood him to say 3) the way I read it was.
4) What I meant was.

2) Honest Wrong belief

The ready acceptance of opinion, half truth speculations and theory without justifications & Verifications Some honestly believe that the best way of doing a job is like this without technical verifications. These belief although honest is not according to the existing facts.

3) Lack of idea :-

This is Caused by insufficient use and application of background knowledge, industrial knowledge, skills of the company, industrial specialization, standards, specialty products, creative thinking and time. We don't use our mind creatively. We don't consider & develop new ideas no matter where they come from. We don't accept the ideas of the solutions that comes from low level of hierarchy. Considering that the ideas will be baseless and silly.. on the other hand we will be on the toes to implement any ideas & solutions that comes from the top without even thinking about it.

④ LACK OF INFORMATION:

11)

4) A temporary Circumstances :-

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This Cause the continued application of solutions which are applicable to temporary conditions for set of conditions even after the condition is disappeared.

5) Lack of time :-

When there is lack of time the company's tend to find many short ways of doing work. Which obviously tend to increase unnecessary cost.

6) Habits & attitudes :-

The individual past experiences belief and traditions cause him to establish a particular habit pattern. in what he does and thinks. Habit makes him to solve similar problem in similar ways. Because of this gives a new solution being different from the normal pattern cause the attitudes to resist to change. It has been said that "habit takes us where we were yesterday and our attitudes tend to keep us there" Man is a slave for habits has a built in resistance to change The older, one becomes and particularly longer one works in that field a stronger are his habits and attitudes becomes. and the resistance to change are proportionally.

7) Rush of Job :-

8) Management Crisis

9) Not having technical know-how and know-why.

7) Rush of Job :-

When there is piling up of job, the worker tries to cut short the methods to finish the job at a faster rate. which leads to unnecessary cost.

8) Management Crisis :-

Lack of management or if the management system for new organisation is not working properly.

11)

sufficient amount of instructions and guidance to workers are not given which make the workers to work at their wish, The tendency of the worker is to finish the job and due to ~~lack~~ lack of supervision and guidance the work of job done is not up to requirement. which increases unnecessary cost.

g) Not having technical know-how and know why.

Following old traditional practices involving high cost and not being aware of new technologies and how to implement leads to unnecessary cost.

Type 7 Values (7)

12.1 Reasons for unnecessary cost of product

1. Faulty Commercialisation
2. Honest wrong belief
3. Lack of idea
4. A temporary circumstance
5. Lack of time
6. Habits and attitudes
7. Rush of job
8. management crisis
9. Not having technical know-how and know-why.

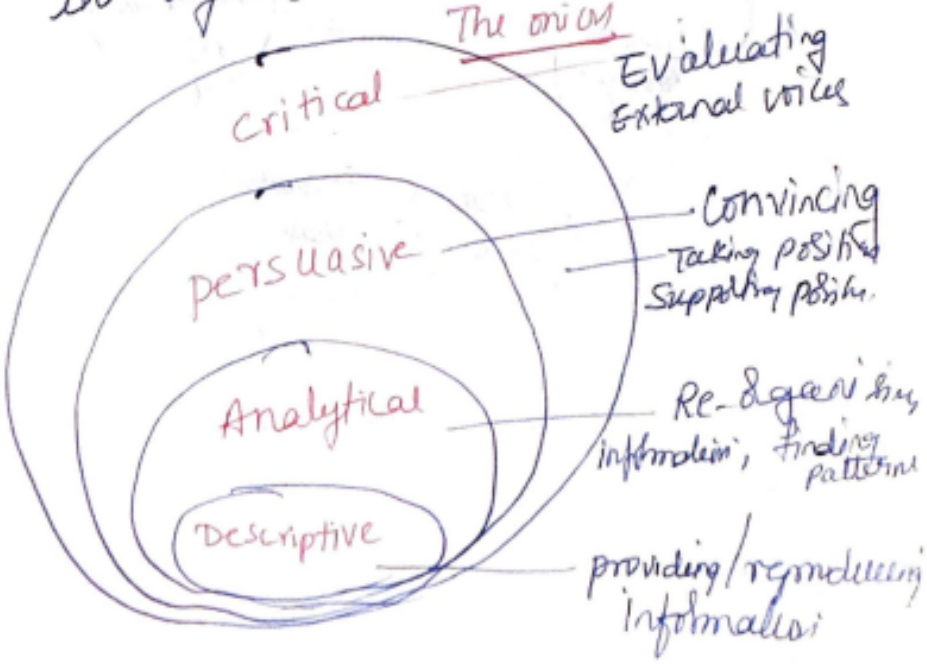
12)

1.22 Peeling cost onion concept (8)

The first step is an intensive deductive analysis of the capabilities needed to make their value proposition work.

We call this process "peeling the onion". It results in a detailed design of the capabilities system that explains how and why it will deliver the promised value.

onion peeling is an accepted method in the world of organizational psychology whereby layers of problems are removed until reaching the root of the problem. - the main barrier standing between the organization and success



12)

(*) System must locate unsuspected areas responsible for higher Cost.

↓ "Peeling Cost onion Concept"

1) Management Organization

If the Orgⁿ is not best suited to the task to be performed. It can only produce poorer performance in the product or extra Cost. If poorer performance results test will normally follow and it will be promptly corrected. If however higher Cost ~~Continues~~ results they often Continue.

2) Marketing Concepts

Customer functional understanding. If Consumer purchase a product to accomplish Certain function They are exclusively used and aesthetic function

DATE

to the extent that the Consumer has not clearly understood and Communicated exactly the function he wants and is willing to pay for and to the extent this information is not basic to the engineering and manufacturing process. Extra Cost remains on the System, product. ~~and~~ or Service.

3) Engineering Concept / approach.

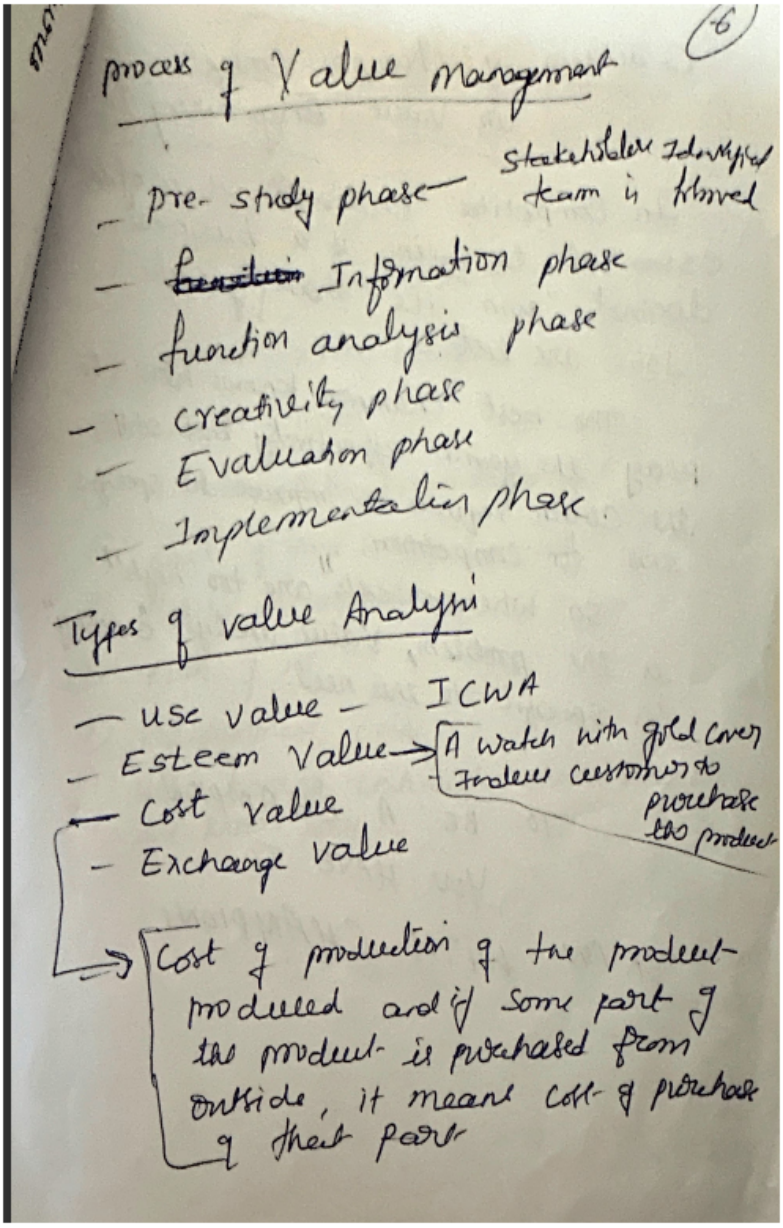
4) Engineering details

5) Manufacturing Concept or approach.

6) Manufacturing Operation.

7) Purchasing Raw material.

EXTRA



process of Value Management

- pre-study phase — Stakeholder Identified team is formed
- ~~function~~ Information phase
- function analysis phase
- creativity phase
- Evaluation phase
- Implementation phase

Types of value Analysis

- use value — ICWA
- Esteem Value → A watch with gold cover makes customers to purchase the product
- Cost value
- Exchange value

→ Cost of production of the product- produced and if some part of the product is purchased from outside, it means cost of purchase of that part

EXTRA)

Uses of Value Analysis:- VA1

1) To reduce the cost of a product
2) Better design of the product can be achieved.
3) Generates new concepts and ideas. for R&D work.
4) Better Understanging of their jobs makes the workers to give better effort.
5) Motivates the workers to come forward with innovative ideas.
6) Determines appropriate cost for reliable cost performance of essential function.
7) Creates cost conciousness among the operating ~~functi~~ personnel of different department.
8) Prevents over specification & stimulates wider interest in the company activities.
9) Provides information to the management regarding function wise expenditure on the product and the under investigations.

10) Offers resistance to change and accelerates the process of implemen
11) Provides good training for the future managers of the Company.