

1st UNIT

DATE

(05) (02) (2014)

VALUE :- Value is the lowest cost to reliably provide the required function or 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 & Creative approach which has its purpose of effective identification of unnecessary cost which provides neither quality nor use nor appearance 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 are applied to service industries like educational institutes, hotels, banks and other service industries then its Value mgmt.

SELF EDUCATIONAL
FORMING SPANISH

HARSHINI
SIVI.V.S

SILVER



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Difference b/w Value analysis & Value Engg.

(4 M)

Value Analysis

- 1) It's a process of determining the unnecessary Cost in a system
- 2) It is done on existing Product
- 3) It is reactive in nature
- 4) There will be product to analyse.
- 5) Implementation Cost is more in VA (Prod^{ns} manf already)

GM

Value Analysis

- 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.
- 2) Value Analysis on the other hand doesn't accept the designed product 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.

Value Engineering

- 1) It is process of determining unnecessary Cost at this stage
- 2) It is done on a new prod for performance
- 3) It is proactive in nature
- 4) No product to analyse
- 5) Implementation Cost is less in VA.

5) Cost

is concerned

minimising

Traditional Cost Redn Tech

- 1) It is concerned with Post Production stage but value analysis can be used at Pre production as well as post production stage.

- 2) Traditional approaches are centred they accept drawing of the part as it is and therefore fail to improve the part through analysis of manufacturing methods, i.e., material jigs and fixtures used.

1) To re

2) Better

3) Gene

4) Better effort

5) Mo

6) Det

fun

7) Cr

of c

8) Pr

Con

9) P

ext

- ③ Traditional Methods are Cost Centered while
Value analysis is addition to Cost improvement DATE 
it seeks improvement in quality, reliability, maintainability, safety, performance, attractive features etc.
- ④ Value Analysis is most important than 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.

Uses of Value Analysis: / VAI

- 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 understanding 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.
- Cost Consciousness among the operating function personnel

(iv) causes resistance to change and accelerates the process of

11) Provides good training for the future managers of the Company.

Symptoms to apply Value Analysis:

8M

VA1

Explain Coach

Project Imple

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

- 1) Design is more than 10 to 15 yrs old.
- 2) Profitability is less ~~item~~.
- 3) ~~Profitable~~ Product facing Severe Competition in the market.
- 4) Increase in the material Cost.
- 5) Customer Complaints.
- 6) If the Scrap generation is more.
- 7) Change in government rules and regulation.
- 8) The change in technology (reluctance to adopt new tech).
- 9) Imported items.
- 10) Introduction of new product.
- 11) Very Complex assembly.
- 12) Carrying out ABC analysis and selecting A items.
- 13) If the Sales are poor.
- 14) Too tight tolerances and unnecessary surface finish.
- 15) Too many operations involved.
- 16) Experiencing many operational problems.
- 17) Heavy rejection.
- 18) Difficulties in procuring raw materials.
- 19) Often failing in test.
- 20) Product involving high inventory.
- 21) Too many parts and subassemblies in the product.
- 22) Product consuming high tooling cost.
- 23) Functions/operations which are costing too much.
- 24) Product which shows a fall in profit.

↑
Cost

Stud

Qu

1)
2)
3)
4)
5)
6)

APPROACH FOR VALUE ANALYSIS/VALUE ENGINEERING

COACHING OF CHAMPIONS CONCEPT

Productivity is one of the most laboured words to-day in any part of the industrial world especially in developing countries like ours. This is not surprising because well being and prosperity of a nation depends largely on the ability to produce goods and services of a desired quality at a cost which is reasonable. This condition requires the most efficient use of manpower, materials, machines and other facilities.

Today what an average family process is the perquisites of the only dream of a past aiming at a high standard of living. And the living standards yet to be realized in generation ahead will in strong likelihood diminish all that has gone before.

Right from the days of industrial revolution till date where Robotics are replacing the presence of the human being; people concerned have been constantly exploring new approaches to improving their performance in designing, making and selling their products.

To keep abreast or ahead of the competition to service in the fierce competition, an industry must strive to be more effective in operating its business than ever in the past. As never before, unusual effort must be applied to keep the organisation moving towards a common goal.

In competitive it is often essential to win. If a business does not 'win' its share of sales, jobs are lost. Life's earnings are lost.

When "costs are too high" is an actual or potential reason for losing competitive business some direct action is essential. It is evident that a coach cannot change a poor fighter into a champion. It is presented that when "costs are too high" is the problem, value analysis coaching is specific to the need.

Value analysis approaches and techniques will help the persons involved to obtain a better answer to their problems that determine costs; in competitive business, this difference can change the organisation from being just "good" to being the "winner".

Value analysis offers a planned, cooperative approach and broadened viewpoint in arriving at many of the basic decisions of an industrial enterprise.

It is one of the tools which any rational management should deeply consider in manipulating the resources under its control.

It is a selective process whereby all valuable alternatives are considered and the best are thoroughly examined before a course of action is chosen. The object is to determine which alternative will produce the best value which design, for instance, will give the most reliable performance and / or the best sales appeal for the lowest cost.

Some of the value analysis parameters are:-

1. Pitch the exposition very strongly upon function and time work.
2. Espouse and follow the forward value job plan.
3. Spell out the format for indoctrination and training programmes at all levels.
4. Furnish the mathematical tools for realistic decision making.
5. Emphasize the science (and art) of scheduling.
6. Avoid an aura of magic and cultism in the value analysis concept.

Unit - 2

REASONS FOR UNNECESSARY COSTS

Unnecessary costs are those costs which do not meaningfully contribute to the product to which they occur. Following are the reasons for unnecessary costs.

Lack of Time :-

Every designer has a due date to deliver his final product. If he does not deliver, his reputation suffers. The designer also has only a limited amount of time to make every possible cost comparison in order to achieve the most desirable degree of value. The lack of time is one reason unnecessary costs gets into a design.

Lack of Information:-

This is caused by nonaccumulation of accurate and detailed facts regarding, for instance, costs and specifications. It may also result from misinterpretation or misunderstanding of the requirements or from non-accurate definition of the problem.

If specific information relating to cost and specification of the design technique, optimal materials, and new refined, improved and economic methods of production, processes and systems are available, a portion of unnecessary costs may be reduced.

Lack of Ideas!

This is caused by insufficient use and application of background knowledge, industrial knowledge, the skills of company and industrial specialists, standards, speciality products, creative thinking.

(1) Black
guru's

(2) sub
ordinates
never
hesitated
to

(3) bad
solutions
high
right

and time. we do not use our mind
creatively. we do not consider and develop
new ideas, no matter where they come from.
we do not accept a solution to a problem
because we know it will be alright from
the performance point of view, without seeing
the economic aspects.

If a relevant solution is brought out by
a concerned person at the low level of the
hierarchy, we consider it rather silly,
obscure and basic. If on the other hand
an irrelevant solution is thought about
by a person at a high level, everyone is
be on his toes to see that his suggestion
is implemented to ~~make~~ see that how economic
the solution is.

(4) Honest and wrong beliefs.

These may be the result of the above
conditions as well as from the ready acceptance
of opinion, hereby, half truths, speculations
and theories for whole facts without justification
or verifications. Some, honestly believed
that would best or may be the only way to do
the job. Old established and completely honest
beliefs, even on technical matters can be
wrong. These beliefs, although honest were
incorrect and not in accord with existing
facts.

(5) Temporary circumstances

These cause the continued application
of solutions which are applicable to a
temporary condition or set of conditions
after the condition has disappeared.

P 17 is missing

(6) Habits and Attitudes

In the individual's past experiences, belief and traditions cause him to establish a particular habit pattern in what he does and thinks, and habits make him to solve similar problems in similar ways. Because of this, a new solution being different from the normal patterns, cause the attitudes of "resistance to change". It has been said that "Habits take us where we were yesterday and our attitudes tend to keep us there."

Man is a slave for habits. He's built resistance to change. The older one becomes, and particularly are longer one works in one field, the stronger are his habits and attitudes becoming, and the resistance to change rises proportionately.

(7) Faulty COMMUNICATION

This category of unnecessary costs is not merely additive, but is a multiplication of the effects of the previous categories. Lack of communication and inability to communicate, understanding and permanently linked to ones background, education and training.

The major sources of poor actions and wrong decisions, misunderstandings and misinterpretations due to what we thought he said.

Understand him to say:

The way I read it was:

What I meant was:

Again, this condition is not one which can be simply isolated as it at first

THE PROCEDURE BY SIMULATION

The framework of value analysis is contained in the twelve questions:

1. What is it?
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 alternative ways of doing the job show the greatest difference between 'cost' and 'use value'?
10. Which ideas are to be developed?
11. What other functions (work or sell) specification features must we incorporate?
12. What do we need to sell our ideas and forestall roadblocks?

Value analysis identifies unnecessary cost and indicates ways of reducing unnecessary cost.

These twelve questions can be regarded as a drill for tackling a problem in hardware. These represent a simplified model of a very sophisticated network of techniques.

The essential procedure can be formed as / twelve questions that have to be answered.

1. What is it?

Selecting the article for study. This implies that products to be tackled will depend mainly on potential saving, technical considerations and human reactions.

Technical considerations will affect the choice of the value analysis team for a particular study, so that people with relevant and contrasting knowledge are brought to bear on the function, but technical considerations will not affect the selection of the subject.

for the same reason Human reaction will not affect the selection. At the time the hardware for study is chosen the nature of any change is unknown. It will emerge after speculation and development of promising ideas.

2. What does it cost?

The factory cost.

Profit	
Commercial Administrative and other charges	
Factory overheads	
Direct Labour	
Bought out Raw material and components	

Total cost

The total cost of a product includes commercial and administrative charges.

Value administration will take care off this portion of the cost.

Factory overheads 34%	
Direct labour 13%	
Bought out Raw material and compo- nents 53%	

Manufacturing cost

The manufacturing cost comprises of three basic elements,

1. Cost of raw materials and bought-out components.
2. Direct labour cost
3. Factory overheads

The percentage will vary from product to product and factory to factory.

Many other cost reducing techniques share a common limitation in that they necessarily concentrate their efforts of the reduction of direct labour. Value analysis concentrates on the much wider field of materials and methods.

3. How Many parts?

~~It is not always time, but more often than not it is time, that to reduce the number of parts brings a saving.~~

(a) Of the many individual part functions only few may be basic to an individual part.

(b) There may be cases where one part performs multiple functions necessary to the present assembly. At the same time, many parts perform the same function.

4. What does it do? (List all the functions)

This functional approach comprises three distinct yet inter-dependent techniques i.e., defining the function, evaluating the function relationships and developing functional alternatives.

5. How many required?

Current usage

Forecast

In order to avoid wasted work on a dying product; to allocate change costs such as tools per article; and to evaluate unit savings, this question is asked in order to ensure that there is some gold in the mine that is about to be worked.

6. Which is the primary function?

The primary purpose for a product or service.

Redundant functions can be seen throughout the assembly and all are suspected of adding unnecessary costs.

There are at least two levels of second degree functions; those required due to specifications and requirements and those due to present approach.

7. What else will do?

List out all ideas, however big (odd, eccentric, grotesque, silly, basic, absurd) that arise from speculation about other ways of accomplishing the primary functions.

8. What will that cost?

The pricing of the new ideas should be a separate and subsequent activity from question 7 - best pricing difficulties impede speculation. Research may be necessary to find a price, but a sound idea of what the factory would have to pay is often sufficient.

9. Which of the alternative ways of doing the job show the greatest difference between cost and use value?

Critical and objective review of the functionally developed solution must be made.

The developed solution should incorporate all the required functions and governing parameters, specifications.

Although the developed idea is quite low in cost it should work.

Even though the idea will work would it ever sell.

10. Which ideas are to be developed?

The challenge of use value is the first guide. Also depend on

- (a) Marginal costing
- (b) Reducing the number of parts
- (c) Choosing an appropriate sub-assembly, ranked cost analysis approach, Pareto curve as a display
- (d) Separation of functional areas approach

- (e) Simplify statement of function if possible.
- (f) Recognise time-lag effect on savings
- (g) Speculate about each function separately.

11. What other functions (work or sell) and specification features must be incorporated?

Look for minimum amount which must be spent to achieve the appropriate use and esteem factors.

List out all governing factors and the appropriate approaches.

There are two groups of requirements to be considered.

The specification features skinned off when determining function and any secondary function that was not envisaged in the brain-storming.

The other to ensure that items are not accepted uncritically.

12. What do we need to sell our ideas and forestall road-blocks?

Consider (a) model (b) sketches (c) full drawings (d)
Product cost comparison (e) Capital cost change (f)
Revenue cost change.

These are always wanted. There may be much more work to be done to suit to the circumstances and policies.

(Refer page No. 57 for a list of road blocks also called as killer phrases).

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