

VALUE ANALYSIS & VALUE ENGINEERING

Value Analysis is an effective tool for cost reduction and the results accomplished are far greater. It improves the effectiveness of work that has been conventionally performed as it questions and probes into the very purpose, design, method of manufacture, etc., of the product with a view to pinpointing unnecessary costs, obvious and hidden which can be eliminated without adversely affecting quality, efficiency, safety and other customer features.

VALUE AND VALUE ANALYSIS

Let us consider at this stage what is meant by "Value". 'Value' is itself is some what difficult to define. It means different things to different people. Also, it is often confused with the cost and price of a product or service. One way of defining the value of an item is:

$$\text{Value} = \frac{\text{Worth to you}}{\text{Price you pay}}$$

This means that if you feel that you have your money's worth, then you have received 100 per cent value. Which indicates that 'Value' has a subjective aspect, for what is good value for one person need not necessarily be so for another. In general, if for any function or a product or a service, you feel you are paying too much, or it costs you more than you think it should, there is scope for improving its 'value' into it. This leads us on to another useful way of looking at 'value'.

Value is the least cost that can accomplish reliably a function or a service. This implies that in achieving reduced cost, the quality and performance of the item are maintained. It follows, therefore, that value analysis is a technique which builds "Value" into an item.

Value can also be defined as that combination of quality, efficiency price, and service which ensures the ultimate economy and satisfaction of the purchaser. Value Analysis can be understood as a technique which helps everyone to determine this combination.

It can be seen, therefore, that several components make up 'Value'. There is value arising from the function or end use of an item, and from its ability to perform a useful function reliably. There is the subjective aspect of value in terms of esteem or prestige value or artistic value; for example, the extra chrome

and styling used to sell automobiles, or the neck-tie or diamond ring you may wear. Again, there is the cost value made up of the material and labour costs, overheads and any other costs incurred in producing the item.

However, in the popular mind, this is closely associated with esteem value, as there is a mistaken belief that because something costs more it is worth more. Finally, there is the resale or exchange value which may be taken as the ability to part with money for possessing a particular product. In addition we have place value with regard to the usefulness of a product at a particular place.

VALUE ANALYSIS JOB PLAN

Several versions of the VA Job Plan can be found in different literature. Some give five, others six and yet many other seven phases. It is the systematic approach which is more important to achieve the desired objectives.

The phases of VA Job Plan are as follows:

SELECTION & ORIENTATION ANALYSIS RECORDING IDEAS SPECULATION INVESTIGATION RECOMMENDATION IMPLEMENTATION

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| 1) | SELECTION &
ORIENTATION | - | to select those problems areas where a potential for net higher Savings is expected |
| | | - | use the common pareto's ABC analysis |
| | | - | general scope, restrictions and aims of the study is defined |
| 2) | ANALYSIS | - | to examine the data at a co-ordinated syndicate meeting |
| | | - | to appoint a secretary to record the minutes |
| | | - | to apply the Tests for Value |
| | | - | to propose further actions |
| 3) | RECORDING IDEAS | - | the secretary writes clearly the minutes of the analysis meeting and circulates them to syndicate members |
| | | - | it includes the agenda for the next meeting |
| 4) | SPECULATION | - | to hold additional syndicate |

- meetings in order to discuss the ideas analysed and any new information obtained.
- to speculate upon practical measures for reducing costs and increasing value.
- 5) INVESTIGATION
- to investigate suggestions for reducing costs and to make them practical and acceptable
 - to obtain definite prices and costs in order to estimate savings accurately.
- 6) RECOMMENDATION
- recommended practical savings to management for implementing
 - to present the recommendations as a comprehensive report
 - to appoint a member to act as an implementation consultant.
- 7) IMPLEMENTATION
- to decide on future plans for the company for which the authority of the management is needed
 - to implement the recommendations acceptable to the management.

APPLICATION OF VALUE ANALYSIS

Value analysis can be applied universally, i.e., to everything – materials, methods, processes, services, etc., where it is intended to bring about economics. One should naturally start with items where the maximum annual saving can be achieved. This immediately suggests that items whose total annual consumption in Rupees is high should receive top priorities in the application of Value Analysis. In the same manner, scarce materials, imported materials, or those difficult to obtain should also receive the attention of the value analyst. Bearing this in mind, Value Analysis can be systematically applied to categories of items, such as those listed below in order to bring about substantial cost reduction.

1. Capital goods – plant, equipment, machinery, tools and appliances;
2. Raw and semi-processed material, including fuel;
3. Sub-contracted parts, components, sub-assemblies, etc;
4. Purchased parts, components, sub-assemblies, etc.,
5. Maintenance, repairs, and operational items;
6. Finishing items such as paints, oils, varnishes, etc.
7. Packing materials and packaging;
8. Printing and Stationery items;
9. Miscellaneous items of regular consumptions;

10. Power, water supply, compressed air, steam and other utilities (services) and
11. Materials handling and transportation costs.

As mentioned earlier, items where the saving can be substantial should obviously be taken up first. Also, items which are imported, or difficult to obtain, and monopoly items, should receive high priority.

However, even if no economy can be effected immediately by Value Analysis on any particular item, then usefulness of the technique should not be forgotten altogether. The item should be taken up again for value analysis after six months or a year, the period being dictated by the findings of the investigation.

New ideas may come to your mind at some other time. Also, it should be noted that the conditions in the market keep on changing fast, and new materials, new suppliers, and new processes come into existence rapidly as a result of phenomenal technological progress taking place at present.

A frequent and systematic review of the items already value analyzed, with advantage, may result in further economies.

ORGANISATION FOR VALUE ANALYSIS

Value analysis is a staff function like, for instance, Industrial Engineering, and should be organized as such. It should be directly under a high-ranking officer from the Senior Management of an undertaking. This is necessary because Value Analysis concerns all departments, and the analyst must have access to them and to their records, performance, costs, etc. Depending upon the size of the undertaking and its scale of operations, there can be a Central Value Analysis Cell to co-ordinate the work of individual analysts attached to the design, purchase, production, and engineering departments. Where there is only one Value Analyst, he may be attached to the Industrial Engineering Department or to the Purchase Department.

Value Analysis is essentially a team effort. What particular items to be taken up for value analysis, and what action is to be taken is usually decided by a small committee comprising representatives from the Design, Production, Purchase and Accounts Departments. Any other departmental representative can be co-opted if and when necessary.

It is the Purchase Manager (or Material Manager) who has to initiate action, convene meetings at regular intervals, and see that substantial results are obtained. A large share of the initial phase of the Value Analysis work will be done by the Purchase Manager, or by other departments, at his instance. It is his responsibility to seek the maximum value when a product requirement comes up to the point of purchase. It is his duty to challenge wasteful and avoidable costs inherent in the items he is asked to buy. It is, therefore, inevitable that a large part of whatever Value Analysis work is done is initiated by the Purchase Manager.

VALUE ENGINEERING

Value engineering is the term applied to value analysis done the design and prototype stage of a product. The potentials of saving are a more in case value analysis is done at design stage. Other advantages is that any changes at this stage are less costly than to effect the same at a latter stage, when the production is in full swing. There are a few limitations however on value engineering work. At the design and proto-type stage, the time is rather short since a company wants to put a new product in the market before any of its competitors can set in and value engineering will have a very short time to apply their techniques. Evaluation of the value at this stage becomes difficult in absence of any customer reaction and opinion.

WHEN VALUE ANALYSIS

A product goes through 3 stages (1) Developmental (2) Growth and (3) Maturity before being out of date. Consider now the design efforts put on a product. At developmental stages the design effort is the maximum. At the growth stage the effort is much less and is mainly modifications and changes. At maturity stage hardly any design attention is needed. The value of the product slowly increases in development and growth stages as more features are added and desired changes and modifications are effected. At maturity stage the value increases to peak and then slowly starts reduction because of competition, change of customer tastes and other factors till the product falls out and becomes out of date. It is this stage where value analysis can, still enhance the value by cost reduction and lengthen the Maturity period of a product. Thus when the design effort is diverted to other products, it is the time for value analysis to be undertaken. The success of value analysis for one product of course be made use of in the design of other products by development wing.

CONCLUSION

Value analysis is a technique with immense possibilities, and systematically employed, it can achieve great economies and increased efficiency. Although good results have been obtained in several individual cases in some industries, only a large scale and systematic application of this technique in all industries, and in defence production, can result in substantial economies on a national scale.

This valuable technique, if systematically employed, promises rich dividends, and, among other things, enables greater use of indigenous raw materials and equipment by import substitution. It is, therefore, of special significance to a developing country like India which has adopted a programme of rapid industrialization in the face of paucity of foreign exchange and other handicaps.