

A

Seminar report

On

Value Analysis

Submitted in partial fulfillment of the requirement for the award of degree
of MBA

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Preface

I have made this report file on the topic **Value Analysis**; I have tried my best to elucidate all the relevant detail to the topic to be included in the report. While in the beginning I have tried to give a general view about this topic.

My efforts and wholehearted co-operation of each and everyone has ended on a successful note. I express my sincere gratitude towho assisting me throughout the preparation of this topic. I thank him for providing me the reinforcement, confidence and most importantly the track for the topic whenever I needed it.

Introduction

Value analysis is an ongoing process in which a product is subjected to various techniques designed to determine how much “use” or “value” the product has. The primary goal of value analysis is to offer a superior product at a minimal cost. An emphasis is placed on keeping things that are useful for the customer while removing aspects that add no real or perceived value to the product.

Products and services are assigned value based on their *usefulness* and the *perception* that consumers have. While two products may do the same basic task (such as sanitizing a counter), resulting in an equal degree of usefulness, customers may perceive one cleaner as superior for a variety of reasons. Any business which must compete to attract customers must, by necessity, focus on perceived value.

Any hospital in a given region may be able to perform most medical treatments, but a hospital that is known for being cleaner, having a more friendly staff, or is otherwise perceived as somehow “better” will be the preferred location, resulting in more business. Similarly, medical equipment that is perceived as being faster, safer, or more reliable will be purchased more often than slower, less safe, or notably unreliable products.

Why is it used?

To determine and improve the value of a product or process by first understanding the functions of the item and their value, then its constituent components and their associated costs, in order to reduce their costs or increase the functions value.

When is it used?

Value Analysis should be used:

- For analysing a product or process, to determine the real value of each component,
- When looking for cost savings, to determine components that may be optimised,
- Only when the item to be analysed can be broken down into subcomponents and realistic costs and values allocated to these.

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How it works — detailed review

To understand Value Analysis it is necessary to understand some key concepts:

Value:

the ratio between a function for customer satisfaction and the cost of that function.

Function:

the effect produced by a product or by one of its elements, in order to satisfy customer needs.

Value analysis:

Methodology to increase the value of an object. The object to be analysed could be an existing or a new product or process, and it is usually accomplished by a team following a workplan.

Need:

something that is necessary or desired by the customer.

Figure 1 Basic rationale used in Value Analysis

Functions may be broken down into a hierarchy, starting with a basic function, for which the customer believes they are paying, and then followed by secondary functions, which support that basic function.

The purpose of functions may be aesthetic or use, and basic functions may be either or both of these. For example, a coat may have a use function of making you warm and an aesthetic function of 'looking attractive'.

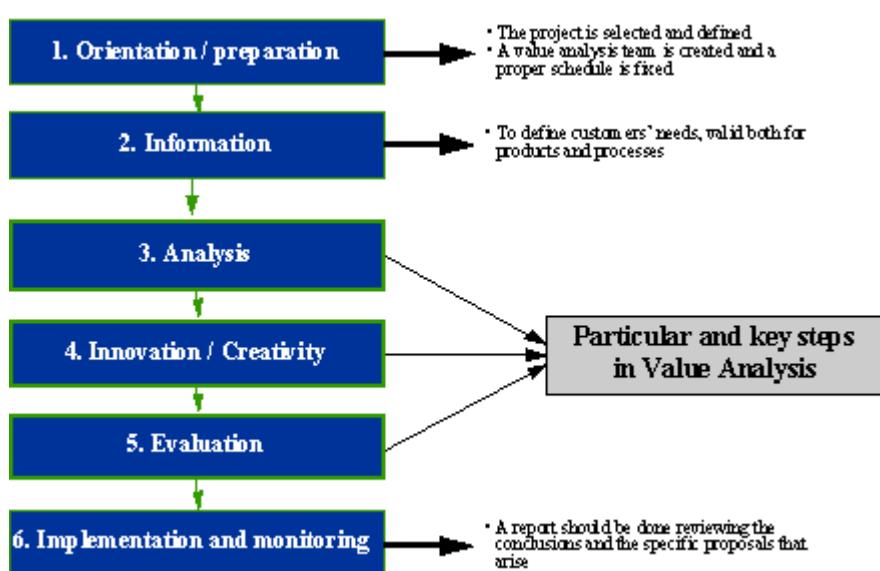
The product or process may be broken down into components, which can be associated with the functions they support. The value of the product or process may be then increased by improving or replacing individual components. This also applies at the whole item being analysed, which may be completely replaced with a more functional or lower cost solution.

Although this is a simple-sounding Tool, it can be quite difficult in practice, as it requires both deep analysis of the product or process to be improved, and also an innovative approach to finding alternatives.

The Value Analysis process

Value Analysis is based on the application of a systematic workplan that may be divided in six steps, as shown in.

Figure 3
Steps involved in the application of Value Analysis



1: orientation/preparation

Identify what is to be analysed. This will typically be one of:

- A manufactured item. This can be anything from a screw to an engine, although a more complex item is likely to result in a more complex and time-consuming analysis.
- A process or service. Again, all levels can be analysed, from a hand assembly process to a complete customer service organisation.

2: information

Identify and prioritise the customers of the item from step 1. This may include external customers, such as 'auto suppliers' and internal customers, such as 'finance manager'.

Note that external customers are usually more important than internal customers, and that seniority does not necessarily equate with priority. A customer's preference for a product feature should be more important than the opinion of a senior designer.

3: analysis

In this phase the functions of the product are analysed by Functional Analysis, which is aimed at identifying functions given by a product or part of it. Functions have an importance (weight) and a cost. These costs are quantified and this leads to a list of functions ordered by their importance and value. This means that there is an analysis of how each function satisfies customer needs, and then, an analysis of what the cost of those functions is.

This phase of Value Analysis may be considered as the key one of the whole methodology as it represents the translation of needs to functions (see the specific technique).

4: innovation/creativity

For this phase it is necessary to use creative techniques that generate alternatives. Starting from the analysis of functions and costs, there is a search for means that allow elimination, change or improvement of components and functions.

It is important to look for different ways of satisfying the basic functions, even if it means rejecting the current approach and starting again with a clean drawing board. This requires the product or process to be 'mentally destroyed' and then rebuild a new one.

5: evaluation

It represents a confrontation of ideas, a collection of information about the feasibility and cost of those ideas, and measures the value of the best alternatives.

This analysis or evaluation uses the same techniques of value measurement that have been used in previous steps. At this point an examination is done about the grade of functional accomplishment and the economical analysis of those alternatives that offer the higher value. Some of the techniques are well-known such as Cash-flow analysis and break-even point.

The team involved in Value Analysis needs an objective analysis of the ideas generated through the innovation phase. The evaluation phase is carried out in two main steps:

- A qualitative analysis of value regarding objectives in design, cost, implementation facilities, etc.
- A quantitative analysis using numerical techniques of value measurement that leads to a few alternatives of high value that will be analysed in depth.

This process usually involves determining the cost and select those ideas that can be practically implemented. This may include work to develop and refine promising ideas into practical and optimum solutions.

6: implementation and monitoring

In this phase it is necessary to prepare a report that summarizes the work that has been done, including conclusions and specific proposals. It will be also necessary to describe actions plans for implementation, in which project management techniques would be useful.

Finally a plan should be included for monitoring of the actions. This should be based in the accomplishment of objectives.

The application of Value Analysis only needs to make use of Basic Techniques such as matrixes, pareto chart, pert and gantt diagrams, etc., in most of the Value Analysis steps.

Types of Value Analysis

The term, value is used in a broader sense and it has different meanings for different persons. For example, for a designer, value means quality of the product designed and efficiency of the product produced; for a salesman, it would be the price of the product at which it can be sold in the market; and for the management, value would be the return on capital employed.

An industrial product may have the following types of value:

a. Use Value:

There are certain characteristics of a product which make it useful for certain purposes. For example, a book of Cost Accountancy if written for ICWA—Inter students, has a use value provided it serves the purpose of such category of students. It measures the quality of performance of a product. Use value may be primary use value, secondary use value and auxiliary use value.

Primary use value indicates the attributes of a product which are essential for its performance as engine, steering wheel and axle in a motor car without which car cannot run. Secondary use value refers to such devices as bonnet or the mudguard or the windscreen without which motor car can be driven but these are necessary for the protection of engine and other parts.

Auxiliary use value is essential for better control and operation as speed meter, electric horn etc in motor car.

b. Esteem Value:

Certain properties of a product do not increase its utility or performance but they make it esteemable which would induce customers to purchase the product. For example, a watch with gold cover has esteem value. A rich customer may prefer a watch with gold cover although a watch with a steel cover may serve the same purpose of keeping time.

Some products may have both use as well as esteem value and yet both may be important. For example, a fountain pen with a gold plated body will have both use and esteem value as it will not only look better but will also last longer.

c. Cost Value:

This value is measured in terms of cost involved. In case of a manufacturing concern it refers to the 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.

d. Exchange Value:

Certain characteristics of a product facilitate its exchange for something else and what we get is the exchange value of that product. It is equivalent to its sale value. All these values play an important part in our personal lives, but in value analysis, we are mainly concerned with use value and to some extent to the esteem value.

Phases of Value Analysis

As an exercise, the phases of value analysis are:

1. Phase of Origination:

In the first phase, a value analysis study team is constituted. The project is selected and clearly defined. The team examines in detail the product and its components to understand thoroughly their nature.

2. Phase of Information:

After familiarisation, a functional analysis is carried out to determine the functions and uses of the product and its components. The cost and importance of each function are identified. A value index is calculated on the basis of cost benefit ratio for each function. A list is being prepared in which the items of functions are arranged in decreasing order of value.

3. Phase of Innovation:

This is the creative phase concerned with the generation of new alternatives to replace or removing the existing ones.

4. Phase of Evaluation:

Each and every alternative is analysed and the most promising alternatives are selected. These alternatives are further examined for economic and technical feasibility.

The alternatives finally selected must be capable of performances the desired functions satisfactorily. These must meet the standards of accuracy, reliability, safety, maintenance and repairs, environmental effects and so on.

5. Phase of Choice:

In this phase, report is prepared. This report contains a summary of the study, conclusions and specific proposals. The decision makers choose the alternative. The programs and action places are then developed to implement the chosen alternative.

6. Phase of Implementation:

The chosen alternative is put to the actual use with the help of the programs and action plans so developed in advance.

7. Phase of Review:

The progress of analysis changes in continuously monitored and followed up in order to provide assistance, to clarify any misconceptions and to ensure that the desired results are achieved.

Merits of Value Analysis

Value analysis is really a very valuable technique of cost reduction and quality improvement. The specific merits of its are:

1. Improvement in Product Design:

It leads to improvements in the product design so that more useful products are given shape. Now in case of ball points, we do not have clogging, there is easy and even flow of ink and rubber pad is surrounding that reduces figures fatigue.

2. High Quality is maintained:

High quality implies higher value. Thus, dry cells were leaking; now they are leak proof; they are pen size with same power. Latest is that they are rechargeable.

3. Elimination of Wastage:

Value analysis improves the overall efficiency by eliminating the wastages of various types. It was a problem to correct the mistakes. It was done by pasting a paper. Now, pens are there and liquid paper is developed which dries fast and can write back.

4. Savings in Costs:

The main aim of value analysis is to cut the unwanted costs by retaining all the features of performance or even bettering the performance. Good deal of research and development has taken place. Now milk, oils, purees pulp can be packed in tetra packing presuming the qualities and the tetra pack is degradable unlike plastic packs.

5. Generation of New Ideas and Products:

In case of took brushes, those in 1930's were flat and hard, over 60 to 70 years brushes have come making brushing teeth easy, cosy and dosy as it glides and massages gums.

6. Encourages Team-Spirit and Morale:

Value analysis is a tool which is not handled by one, but groups or teams and an organisation itself is a team of personnel having specification. A product is the product of all team efforts. Therefore, it fosters team spirit and manures employee morale as they are pulling together for greater success.

7. Neglected Areas are brought under Focus:

The organisational areas which need attention and improvement are brought under the spot-light and even the weakest gets a chance of getting stronger and more useful finally join's the main strain.

8. Qualification of Intangibles:

The whole process of value analysis is an exercise of converting the intangibles to tangible for decision making purpose. It is really difficult to make decisions on the issues where the things are (variables) not quantifiable.

However, value analysis does it. The decision makers are provided with qualified data and on the basis of decisions are made. Such decisions are bound to be sound.

9. Wide Spectrum of Application:

The principles and techniques of value analysis can be applied to all areas-man be purchasing, hardware, products, systems, procedures and so on.

10. Building and Improving Company Image:

The company's status or image or personality is built up or improved to a great extent. Improvement in quality and reduction in cost means competitive product and good name in product market; it is a good pay master as sales and profits higher and labour market it enjoys reputation; it capital market, nobody hesitates to invest as it is a quality company.

Limitations

Like any other cost reduction technique, value analysis has its own limitations. The most common limitations are that the man made excuses are the blocks in implementing these plans of value analysis.

The most common excuses given are:

- (a) Lack of motivation
- (b) Resistive to change
- (c) Inertia
- (d) Lack of knowledge and patience
- (e) Attitude of 'It will not work in India'
- (f) We are very small or very big
- (g) This has been tried earlier and failed
- (h) The change is too big
- (i) 'Let competitors try before we try'
- (j) Difficulty of teams meeting or team meeting for getting consensus.

These limitations are man-made and can be over-come one the company divides to implement. However, they should be educated of the plus and minus points and the main beneficiaries are those that are to be told and they are to be taken into confidence.

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.
- To conclude, we can say that benefits of value analysis include,
- Reduced production cost,
- Materials and distribution cost,
- Improved profit margin,
- Increased customer satisfaction.

Reference

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