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YOU CAN ACCOMPLISH 25% MORE THROUGHOUT THE SEVENTIES IF YOU LEARN AND USE VALUE ANALYSIS TECHNIQUES.

My son Robert, age 23, while 150 feet up, on the magnificent four mile long "Bay Bridge" at Annapolis, Md., looked down upon two dozen assorted craft in the water below. Some were pile drivers, some cement mixers, some steelhandlers, some assorted materials, all working at building a parallel span. A 2 mile gap remained- which required construction 200' high. He said, "I can't conceive of men being able to build such a bridge", then added, "And the men who get the job done are no smarter than you and I". Then his next comment struck home to me- "It's the System that does it".

How often do we have exactly the right system--and a complete system--for making all cost related decisions, keeping ALL "customer" quality, and minimizing un-necessary costs? We could correctly say never!

Often have I -- when observing the startling results in ending costs which brought no benefits, accomplished by the same people, but who now used the Value Analysis System-- thought, "Truly the results from fully using the right system at the right time, almost transcend understanding".

## SYSTEM FOR IDENTIFYING UN-NECESSARY (UN-WORKING) COSTS

Created for one specific purpose--the identification of unnecessary costs, Value Analysis is a system, a complete set of techniques, properly arranged, for the sole purpose of efficiently identifying unnecessary cost, before, during, or after the fact. Some of the techniques are familiar, some modified, some new. The effectiveness in utilizing this system depends upon the understanding, training, and skill of the users, as well as the understanding of all business people in the environment in which it operates.

### THINKING IS EXCLUSIVELY IN DISCIPLINED STEPS

It is a disciplined action system, attuned to one specific need,--accomplishing the functions which the customer needs and wants, whether these functions are accomplished by hardware, service, a group of people, professional skills, administrative procedures, or other, at the lowest cost..

in its disciplined thinking, it has specific mind setting, problem setting and problem solving systems. These systems will assist any one who has the task of providing more of what the customer wants, for less cost, to do so.

VALUE ANALYSIS is the name applied to this disciplined, step by step thinking system, with its specific approaches for mind setting, problem setting and problem solving.

VALUE ENGINEERING is often the name correctly used by qualified engineers, in engineering work.

## MIND SETTING, PROBLEM SETTING AND PROBLEM SOLVING

Parts of the system require four separate kinds of thinking.

As the system is illustrated, it will require four separate kinds of thinking, preceded by "Mind Setting", and followed by "Development and Refinement Planning".

--Depth thinking on "What are we (in this specific project) Really Trying to Accomplish"--

1. -Exhaustive accumulation of "Information" surrounding it. Identification of assumptions and improvement of assumptions.
2. -Penetrating Analysis. What senses of direction does this information provide us? What specific problems will, when solved, bring important cost benefits?
3. -Creative mental activity, in which all judgement is temporarily deferred, to form the roots of a variety of different solutions to each of the specific problems developed in the proceeding analysis.
4. -"Judgement Type" mental activity, in which the results of Creative thought are searched for "Idea Roots", whose disadvantages can be minimized and advantages maximized sufficiently to meet the need for cost and/or operation improvement.

--Development and Refinement of the improved answers to the established problems--

SYSTEM HAS PROCEDURES TO LOCATE UN-ESTABLISHED PROBLEMS.

The system must have procedures which locate the often un-suspected areas of real cost improvement opportunity.

It must contain techniques which will identify the "Stoppers", usually un-suspected, in the work toward lower costs, and deal effectively with them.

### ALL COST IS FOR FUNCTION

To help achieve better solutions to problems, sooner, some different "building blocks" are needed. These must cut to the heart of the basic problem and keep penetrating thinking in the heart area. This is vital, or side issues, which are apparent, will draw action from the main issue.

#### Customer Wants Use Function and Aesthetic Function.

The heart of the situation is "The customer wants a FUNCTION". He wants something done. He wants someone, perhaps himself, pleased. He wants something enclosed, held, moved, separated, cleaned, heated, cooled, or whatever, under certain conditions, and within certain limits. And/Or he wants a shape, color, an aroma, a texture, a sound, a "precious" (costly) material, or whatever, to bring pleasure to himself, or others he wishes to please. That is ALL he wants. That is ALL he cares about.

So, the language of function is the language of the heart of the problem.

The customer wants two, and only two, types of function, in varying degrees in different products or services.

USE function, and Aesthetic function, serve his needs.

USE function performs some "action" that he wants performed.

AESTHETIC function pleases him, or some one he wants to

have pleased.

Many products and services require both Use and Aesthetic Functions. Some require only Use, while some require only Aesthetic Functions. The refrigerator, the automobile, the dress, the shoes, the pipe, the flower vase, all require both Use and Aesthetic functions in varying ratios. The nail within the walls of the building, the concealed wire in the motor, the oil in the automobile, require only Use functions. The "Rembrandt", the diamond, the perfume, have only Aesthetic function.

Intense concentration of mental work on these Functions, even what appears to be Over-concentration on them, forms the basis for un-expected steps of advancement of "Value" in the product or service.

Identify, Clarify, Name and Evaluate Functions.

The process includes:

Identifying

Clarifying

Naming

Evaluating (Setting appropriate cost)

What, really is the Function which the customer or user wants?

MIND TUNING EXPANDED

A very clear understanding and "feeling" of "What we are really trying to do" is vital, then later actions and inactions are more readily understood. In effect, this tunes the one or more minds to exactly the task, and perhaps more importantly, to exactly the same task, at the same precise time.

It is often startling how much more effectively a group will work if group mind "tuning" or mind "setting" has been thoroughly accomplished.

"On this project, what are we really trying to do in relation to":

The competitor	Our market position
Our earnings, long range	Our earnings, short range
Our sales costs	Our sales prices
Our product	Our investment
Our management	Our design engineers
Our good technology	Our standardization
Our quality	Our product obsolescence
Our quantities	Our pride in past work
The service we provide	How we provide service
Those receiving service	Competing services
The functions of the building	The cost to produce building functions
Architectural design practices	Codes controlling const.
Ultimate cost of construction to users	
Increased material cost	Increased labor cost

Now with a clear and complete "Feeling" of what it is that is to be done, proceed with the job plan for problem solving.

#### PROBLEM IS "SET" IN ANALYSIS STEP

After the Information thinking, in the Analysis thinking, the precise problem or problems to be solved are "Set".

#### THE VALUE ANALYSIS JOB PLAN

In the Job Plan the problems are recognized and faced with the functions to be accomplished clearly in mind.

Information surrounding the problem area is intensively and extensively secured. It is thoroughly analyzed for meanings and for "Sense of Direction". Exact problems to be solved are established. The essential creative work is done. Alternatives which meet the needs of the business or service are chosen and their disadvantages minimized. Then plans for refinement and use are completed.

## S U M M A R Y

Value Analysis is a system containing techniques specifically arranged for efficient problem locating, problem setting and problem solving.

Problem solving proceeds by the use of one "Mind tuning, or setting" period, followed by four periods in which totally different types of "Mental Work", are separately accomplished to utter completion, before proceeding to the next type.

In mind tuning the question is asked and discussed "Exactly what are we trying to do"? It usually requires from a half hour to a half day to get all minds involved in the start of a project in good tune, with what, at that stage seems to be exactly the right problem, whose solution will bring real opportunity.

The four different types of thinking in the Value Analysis Job Plan, each of which is exhaustively completed before starting the next are:

1. Information thinking in which the search is for "What happens? What has happened? What facts? What valuable related facts? What assumptions? What quantities? What costs?, What facts are needed, obtainable, but not present? etc.

2. Analysis thinking in which a belief in the meanings contained in all of the information is developed. Functions are established. "Solvable and comparable groups of functions are established. Functions are evaluated. The exact problems to be solved in succeeding thinking are given precise wording.



3. Creativity thinking in which all judgement steps of thinking is deferred, the precise problems set in the analysis. Step are individually used, and the widest possible range of possible approaches to the solution are listed.

4. Judgement thinking in which the listing from the Creativity step is searchingly, thoughtfully and creatively combed, basically by one man, to provide one or two new approaches which, after minimizing disadvantages will meet the needs of the business or service.

This is followed by Development Planning in which definite plans toward implementation are taken.

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