L. D. MILES
SEDGEFIELD
RTE. 8, BOX 848
EASTON, MD. 21601
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80-15

To Sybil Parker

DATE 11/15/80 SUBJECT

Dear Sybil Parker;

I never cease to be startled by deletions of vital knowledge.

PURCHASING was deleted, as a field of Value Analysis application.

Note these facts:

1. PURCHASING WORLD magazine has had a full page on it in each monthly issue for four years - 50 pages.
2. PURCHASING magazine has a full issue on Value Analysis every year, as well as more on it scattered thruout the year.
3. I enclose a recent report - Oct. 1980 - in which a poll of purchasing people named Value Analysis as their No. 1 tool for inflation fighting.

In the interest of basic truth, I certainly expect the word PURCHASING to be put back in.

Sincerely,

Larry Miles

KWIK-MEMO

L. D. MILES
SEDGEFIELD
RTE. 5, BOX 848
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PH. 301 - 822-3271

To

Sybil P Parker, Editor in Chief
Encyclopedia Div.
McGraw-Hill Book Co
1221 Ave. of the Americas
New York, NY 10020

DATE 11/15/80 SUBJECT

Dear Sybil Parker;

Please give my compliments to your editors for pretty much telling it like it is in all areas of Value Engineering and Analysis excepting one - Creativity.

There, they not only did not tell what was right, they said much that is wrong.

The essence of VE is blending knowledge with creativity, Superior knowledge with superior creativity. To blank the article on creativity is too great a loss to tolerate.

I have one suggestion. If you are too hard pressed for space to put in a proper basic paragraph on Creativity, take out the weak and wrong statements which are there now, and handle as follows:

Creativity Step See Vol __, page # ___, Applied Creativity.

(or whatever name you use in the encyclopedia for it).

Sincerely,

Lawrence D Miles

GALLEY PROOF OF YOUR ARTICLE

Enclosed are galleys for your article that will be published in the ENCYCLOPEDIA OF SCIENCE AND TECHNOLOGY, 5th edition. Please note that in cases where additions are being made to old articles, only the new material has been set in type, and not the entire article. Please mark all corrections clearly and make only essential changes. The galleys should be returned to our office within 2 weeks.

Value

~~Value~~ engineering

A thinking system (also called value management or value analysis) used to develop decision criteria when it is important to secure as much as possible of what is wanted from each unit of the resource used. The resource may be money, time, material, labor, space, energy, and so on. The system is unique in that it effectively uses both knowledge and creativity, and provides step-by-step techniques for maximizing the benefits from both. It promotes development of alternatives suitable for the future as well as the present. This is accomplished by identifying and studying each function that is wanted by the customer or user, then applying knowledge and creativity to achieve the desired function. Resources are converted into costs to achieve direct, meaningful comparisons. By using the methods of value engineering, 15 to 40% reduction in the required resources often results.

Application. Value engineering has applications in five broad areas: in design and manufacture of products; in administrative groups, private or public, where the task is to achieve accomplishment through people; in all areas of social service work, such as hospitals, insurance services, or colleges; in architectural design and construction; and in development and research.

→ Purchase

because it pleases the user. Value engineering uses a planned approach for intensive and effective utilization of every applicable technique. It requires the development of sufficient skill in the application of enough techniques to bring into clear view a liberal number of value alternatives. Each function is systematically understood, identified, clarified, and named.

Value. Value is defined as the proper function for the least resources. Best value, then, is the attainment of the full function desired for the lowest cost achievable. The value of a function becomes a vital measure, being the lowest cost of securing the function. After arriving at this measure, high effort is made to achieve a function near its value.

The system is used to improve value in either or both of two situations: (1) The product or service as used or as planned may provide 100% of the functions the user wants, but lower costs may be needed. The system then holds those functions but achieves them at lower cost. (2) The product or service may have deficiencies, that is, it does not perform the desired functions or lacks quality, and so also lacks good value. The system aims at correcting those deficiencies, providing the functions wanted, while at the same time holding the use of resources (costs) at a minimum.

Evaluation of function by comparison. Once the functions have been identified, clarified, understood, and specified, the following question must be answered: What is the lowest cost which, under the present conditions, would provide the described function? The answer is developed by comparisons to the past. These values are established by other valid comparisons, such as: How might an important portion of the function be accomplished, and what would that cost? How would that function be accomplished in a different industry or a different country, under very different conditions, and what would it cost? These values have to be compared with larger, smaller, and similar items or services and their costs. If there is no comparison, there can be no evaluation.

Often this task of creatively evaluating the function of itself brings a good answer to the problem. For example, the Navy was building 1000 landing crafts. One function was to "contain 200 gallons of gasoline." A noncombat life of 8 years was desired. The best quotation for each landing craft was $520. The function was evaluated by comparisons. How else could 200 gal be contained and what would each cost? Four 50-gal drums would have cost $25. A standard 250-gal oil tank, often used with oil burners in homes, cost $30. The $30 figure is selected as a base. Additional costs were considered for some connections, piping, and perhaps coatings that would be needed, so the value of the function was selected to be $50. As a result of the evaluation, the Navy elected to use four drums, separated into two groups of two, at a unit cost of $80. Thus, the cost for the job was $80,000 instead of $520,000.

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Minimizing normal human negatives. The system, with its intense emphasis on functions, deep searches for knowledge, and constant effective creativity, built into step-by-step techniques, offsets many human traits which retard or prevent beneficial change. Some of the human negatives which act as retardants are: (1) Thoughts tend to follow habit patterns. (2) A decision to change, if proved wrong, may bring embarrassment. (3) Making a change may bring personal risk to the decision maker. (4) Decisions based upon sound general criteria often do not fit the specific instance. (5) The required good decision may be contrary to what is "normally" done. (6) Subjective coloring of attitudes of important people in the area makes good decisions difficult without sound objective data. (7) Decisions vital to profitability are often made by people not accountable for profits. (8) Obscure cause-and-effect relationships in some matters that create costs allow decisions to be made that will injure value. (9) While feelings are strictly personal, they may influence and often control decisions affecting value. (10) Most environments are hazardous to anything new, or to a change. Sound, objective alternatives developed by the value engineering problem solving system do much to overcome these human retardants.

[illegible] "trained" to work on

gathering extensive information about the problem area; (2) analyzing the information for meaning and sense of direction; (3) doing the essential creative work; (4) judging the results; (5) creating a development planning program. The first four steps all require a different mental activity, and each has to be thoroughly completed before proceeding onto the next step.

Information step. In this step, all the facts and pertinent information (such as costs, quantities, and specifications) have to be obtained because only through complete understanding of the situation can valuable assessments be made. Assumptions have to be sorted out and reviewed to determine if they can be replaced or supported by facts. Long-standing assumptions have to be especially checked for validity.

Analysis step. This step involves the development of "function" thinking. From the information collected in the first step, functions are developed to answer such questions as: What are the problems involved, and which must be solved first? Are the solutions to these problems reasonable? What goals should be aimed for, and what steps should be taken in order to achieve them? Is any more information needed? Have any assumptions been overlooked, and are all assumptions already noted still valid? Have the best approaches to these problems been developed and, if so, what savings or benefits will result? Should better solutions be sought? What problems, if presented with better solutions, would produce even more beneficial results for the project?

Creativity step. This step requires the use of the imagination to generate every possible solution to the problems involved. This is accomplished with maximal result by being aware of every bit of information dealing with the problem at hand and then joining these pieces of information into one unified concept. The result should be the most beneficial approaches to the situation.

Judgment step. This step involves ~~evaluating the conclusions drawn~~ in the previous step. No ideas should be thrown out. Rather, they should be developed and improved into better ones. Ideas involving monetary value should especially be studied closely and objectively in order to seek out their limitations and to try to lessen, overcome, or eliminate any negative aspects. It may be necessary to send certain ideas back to step one and to run them through the entire process again. Some ideas may have so many advantages that the lessening of their drawbacks may become the principal point of concern. And those ideas which appear to be completely thought through and seem capable of providing the greatest yield are sent on to step five.

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THIS IS ABSOLUTELY NOT CREATIVITY.
It would be shameful to put it into
the encyclopedia. Creativity must b
Free Rolling, with all judgement
deferred, or the best solutions are
not brought forth.
Either use material from what
I sent to you, or get one of
your editors who knows what it
is, to take something from one
of Alex Osborns books, or some
of your own books on CREATIVITY.

NO

creatively studying the

ideas presented

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Development planning step. In this step the best specialists and vendors are selected for consultation, and an investigation program is established to provide the most recent information on and the most current capabilities of any of the approaches that show potential.

VECP (value engineering change proposals). When this thinking system is used on government or military supply or construction situations, the same or better quality is usually secured for millions of dollars less in cost. To make it profitable for the manufacturer or contractor to hire value engineers and make this contribution to the government, a percentage of the savings [illegible]

training and qualification. Skilled consultants and some universities teach the techniques of value engineering. A professional society, the Society of American Value Engineers, with chapters in many cities, sets standards, gives examinations, and awards the citation of "Certified Value Specialist" to qualified people.

World status. Extensive application of value engineering is growing in the United States, Japan, Germany, Sweden, France, Canada, and England. Important application is growing in Norway, Italy, Spain, Korea, Taiwan, South Africa, India, and other places. Professional societies exist in the United States, Japan, Scandinavia, France, and South Africa. *See* INDUSTRIAL COST CONTROL; INDUSTRIAL ENGINEERING; METHODS ENGINEERING; OPERATIONS RESEARCH; OPTIMIZATION; PROCESS ENGINEERING; PRODUCTION ENGINEERING; PRODUCTION PLANNING.

[LAWRENCE D. MILES]

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(the 1971 Fallon book is o
out of print now)

C Fallon, Value Analysis,
2nd revised Ed.

initials?

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