

Partly cut up

The Challenges That Lie Ahead

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Keith Glegg has helped by setting a framework that will help us to deal with the future, the opportunities of the future, and the task of how to use value engineering and value analysis effectively.

Each year I learn more and more of the importance of having objects in a suitable framework in order to make them useful. We will find that, I hope. Most of you know that between 1947 and 1953 General Electric spent about a third of a million dollars a year for about five years in developing the basic techniques of value analysis. It spent about \$2 million to get this disciplined thinking system put together to accomplish its job.

I want to look back just for a minute. I want to pick out a few of the things that we know are good—and bad.

We know also that there have been negative results. We know that it has hurt technical professionals and management professionals who have built their reputation on doing things one way. We know it has hurt the administrator or professional who built his personal reciprocal favor with particular people by using certain systems, methods, or processes. We know it has hurt the seller who continues to sell his merchandise only because of his customers' ignorance. We know it has hurt the administrator who is measured by his superior principally by the number of heads he takes off the payroll during a crisis. We know it has hurt the people who report directly to the company president, who mistakenly believes that his top men were already doing about all that can be done to reduce cost without taking out quality; and we know it has hurt value analysts themselves who have shown themselves to be so effective in making improvements that it embarrasses their co-workers and their superiors.

From here, let's move into the future. We won't discuss the large amount of poor value analysis work which is done when people are only partially trained, or use the name only.

Now let's look down the pike. But first, let's get over our inferiority complex about value analysis. Because we have received so much direct or indirect criticism from responsible management people, we may feel we are second class citizens and that the system is not rugged and virile and something for the top of the deck. For the moment we're going to remove such thoughts from our mind; we're going to look at this positive, strong idea and see where we go from here, and what we do with it.

The basic question is: what do we really have in value analysis? What we have is a tremendous problem-solving system.

Another question: Is it useful in solving cost problems? The answer to that is, no; perhaps, yes. I'll tell you what I mean. I say "no" because the orderly, step-by-step thinking systems and the search systems which start with determining what we are really trying to do, regardless of any other condition, proceed with exhaustive development information. We then jell up the key problems which, when solved, will make lots of difference. We then move into the creative solutions, the judicial actions. This type of disciplined thinking fits all problem-solving, as well as the cost problem. For example, lighter weight, more performance, smaller size, better sales appearance, more sales, less noise, better management. A general manager, who took a 120-hour seminar wrote a three-page letter to the president of the company and said that "when our top management starts using these methods of value analysis in their considerations most of the problems that we spend most of our time on will disappear." I haven't seen anything that changes my views on that. It also shows that it is suitable for solving other problems.

I answer the question also "yes" because the present value analysis system of disciplined thinking has added to it much supplementary procedure and technique that is particularly adaptable to reducing costs, to getting functions for costs; so that if we

take the whole book and all the package of techniques we have, not just the "heart" problem-solving system, we see that we have attached to this heart a specific field of knowledge and of technique that is tailored to solving the cost problem.

There is no reason why other fields of knowledge, and other patterns of techniques suitable to achieving other objectives that are important to management, cannot be "attached" to this problem-solving system.

For example, take the subject of "light weight." I remember the first VA seminar we held on the GE J-79 jet engine. There was some apprehension that using value analysis techniques would add weight. As soon as the seminar was over there was the possibility of removing 30 pounds of weight, which came by accident, not by intention; ten pounds was immediately removed. When they were "frightening" us with the possibility that these alternatives might add weight, they said, "We will penalize you \$3,000 per plane per pound for any weight you add." I asked them how much credit we would get for any weight we removed, and they said, "None. That's just a side issue."

Let's not forget lower maintenance cost because of a simpler, better way of doing the job.

"Better appearance." I remember one project that had a cost of \$43. All engineering and manufacturing work were done in creating the new product and it was ready to tool. The general manager said, "Now, I want to find out if this problem-solving system will do even more." A couple of months later the cost was reduced to \$8 and the new product looked so much better than its predecessor that the sales department would have no part of it. Again, as a side objective, the appearance was drastically improved. What I am stressing is that we don't have to keep our technology just where it is and look only at cost with these other objectives being the side issue. Soon we are going to start fitting it in to solve these other problems faster and more efficiently.

You might ask the question: Why was value analysis first used in the cost area?

Cost decisions are relatively unscientific. They are often thought to be mixed in with a man's professional reputation and considered very personal. Often, they are not supported by meaningful and satisfactory data. There seemed to be, therefore, a greater need to use this problem-solving system in the cost area first. And that's essentially where it has stayed until now.

It is simple for me to understand why I used it first in the cost area. Removing cost was my job. But many people asked, "Can't I use this system to improve performance instead of to lower cost?" For 20 years I always said, "No." I am changing my answer today. I always said, "No," for "Political" reasons. I didn't want to put this young technology into full class competition with everything and with everybody. If we had said that it will help the engineer improve his performance, it would have been looked upon as a competitor to engineering.

This is the reason why until today I have always kept value analysis confined to the field of cost. I am saying that it is strong enough now to pull its own weight. Its methodology is well known, its problem-solving ability proven, so that the future will see men using it in many other areas. Perhaps they will call it by a different name, perhaps by many different names, but they will use this tremendous problem-solving system.

Now, I want to move to the other part of my discussion: What is ahead in the use of value analysis in its original field—the efficient identification of unnecessary costs.

I would like to use the analogy that is in the Conference Program, that we require good seed and good soil and proper nourishment. It was first necessary to put together something that would get results in favorable conditions, and this is not unlike the way any new plant is developed.

That has been done. We have the good

seed. Firms like Value Analysis Incorporated are teaching it with a thoroughness and with a skill that people can learn it.

Now it is time for the next move, to put this plant in soil that is not suited to it where it will not bring forth the fruit that it is capable of. The first steps we've been going through these years was to pick the places where the soil was fertile enough so that it could bear reasonable fruit and then, of course, by communication, endeavor to make the soil even more fertile.

We are now moving into the stage where the development of the soil and the development of the seed should proceed forward as one project. It becomes essential that we in value analysis work to help modify the management of areas into which the work will go. At the same time we must further change our approaches in value analysis so that we are modifying the seed and the soil together without taking the strength out of the problem-solving approach.

I am sure that the next five years will see us make changes which will allow us to fit it closer into the types of business management that we find, and that we can help to modify to fit it. So now the task is to modify both so that the real management problems become less and less as we look down the pike.

We must eliminate embarrassment. We must eliminate the feeling of competition between industrial engineering, and between engineering, and perhaps other functions. We must present it for what it is.

Now, back to the question of what it is. Value analysis is a superior problem-solving system. I am very interested in the framework set by Keith Glegg. He has indicated to us the high turbulence area, and left a real area of opportunity in the large range of matured products, like soup and soap.

Because we regard value analysis as a tremendous problem-solving system, the

place for it to be used is in the mature businesses. If a mature business uses the superior problem-solving system that is value analysis, quality will be maintained, and whatever weaknesses it has will be identified and minimized. Such a company will endure.

The best comparison to the use of value analysis to solve the problems due to the competition faced by the mature business is to think of it in terms of "coaching of champions." Do you know of any winning teams who, because they are at the top, don't have coaches? Do you think that the men who are superior golfers do not have coaches? Do you think that just because golf is a mature game, and that they are good at it, that they go into these tournaments without coaching?

In a certain respect, using value analysis in a matured business is like teams competing in the World Series. They are good or they wouldn't be in that matured business. Their competition is also good.

To me, this offers one of the greatest opportunities for value analysis. I would summarize my comments by saying that I believe we can communicate more effectively what value analysis is, and help in furthering its use, if we identify it in more general terms for what it is—a tremendous problem-solving system. I was so interested to hear Dr. Musmanno speaking of using it in the State of Pennsylvania. I would use different words than he did where he called it "just horse sense." It is horse sense, but it is also a tightly tailored system built around the way men's minds work and the way information must be gathered, the way the judicial part of the mind must be held back while we search for new systems. It is disciplined thinking. And that is what he is really using and applying to many problems in the State of Pennsylvania.

Next, the future will bring us the use of this problem-solving method for achieving other objectives. In the cost field, I can say that in the turbulent type of business, which I have not concentrated on because Mr. Glegg

did quite well, its place is quite well staked out. In the non-turbulent type of business, the highly competitive mature type of business, it will be considered as essential as the coaching of champions—a problem-solving system used by people who are making the decisions so that the one who has this coaching will stay in business and will be the winner.

Discussion

J. GORDAN KNAPP: You mentioned that your business at one time was cost reduction. How did you arrive at the term, "value analysis"? When was this cost reduction technique first called, "value analysis"?

MILES: In early 1948 I had much evidence of the effectiveness of this functional approach. We had the first few steps. My boss was the Vice President of Purchasing for GE. He set up a meeting with Harry Winne, the Vice President of Engineering. We showed him some results, hoping to get his support. We got his wholehearted support and he said, "What are you going to call this? This is the best method yet found to help engineers identify unnecessary costs, either before they design, or on redesigns."

I said, "I don't know what to call it." Harry Winne said, "What you are really doing is dealing with value because value has a performance and a cost part." And then he said, "Why don't you call it value analysis?" I was so pleased to get his support, I said, "Value analysis it is."

L. W. CRUM: One of the attributes of success my company believes in is the analysis of failure. We go to great expense and time to analyze the running of our engines and, in fact, we almost encourage them to fail. Have you analyzed the failures of value engineering?

MILES: I have not made a scientific analysis of the subject, but I do have considerable experience in it. Failure is usually due to one of two things: Men who

have not received enough management support to take a complete training course, somehow get a smattering of value analysis techniques, but they don't know enough about this problem-solving system, and they can't use it on the hard jobs.

The second failure comes about when they are in a management climate that is not right, where the management does not know

what they can do, doesn't expect them to do it, doesn't give them support and help to do it.

Of course, the two often work together. Management that doesn't understand value analysis usually will not hire the men who really know it. Then you have poor soil and you have poor seed, and you don't get the results.

