

Development and Application of Customer-Driven Value Engineering Training

Erik D. Bakken



Erik Bakken is a licensed professional engineer in the state of Wisconsin, and is an Industrial Engineer for the Value Engineering Division at the U.S. Army Industrial Operations Command in Rock Island, IL. He performs Value Management training and facilitates value-related studies in manufacturing and logistics. Mr. Bakken received a B.S. in Industrial Engineering from the University of Wisconsin-Platteville, Platteville, WI, in 1989. He has held I.E. positions at Norfolk Naval Shipyard (VA), and Rock Island Arsenal (IL). He is the president-elect and the Community Affairs Director at a local chapter of the Institute of Industrial Engineers.

ABSTRACT

The Value Engineering Division is responsible for overseeing the value engineering programs for all IOC installations. The installations include arsenals, depots, and Army ammunition facilities. Each installation must meet an annual savings goal through value engineering efforts. This paper will highlight the benefits of providing VE training that is developed with the customers' input.

BACKGROUND

Think about the goal of your value engineering program. What is its purpose? Is it designed to save money, reduce costs, increase competitiveness, or reduce cycle time?

Our Value Engineering organization's goals include:

- Use the VE methodology wherever possible to generate the highest obtainable dollar savings.
- Increase top management emphasis on VE.
- Increase the application of VE methodology in the development phase.
- Promote increased contractor participation.

To help us evaluate how well we are meeting our goals and to improve our VE program, we developed a Customer FAST.

CREATING THE CUSTOMER FAST

First, we had to come up with the task function that best describes our VE program. What is it that defines us as a success or failure? At first, we said, it

must be to give training, to get results, or to visit the installations. What is the one thing that we do that if we did not do, we would be a total failure? The answer is simple to state, but not so simple to do: verify savings obtained through the value engineering methodology as reported by our installations, reconcile those savings with our stated goal for that year, and pass that information on to our headquarters. Take everything else away—awards, training, site visits, helpful telephone calls—and we still are required to meet our annual goal, just as we require the installations to meet their VE goals.

BASIC FUNCTION

If our purpose is to achieve our VE savings goal, then what is our basic function? Let's try Receive VEP (Figure 1). A VEP is a Value Engineering Proposal. It contains the recommended changes to an existing product or process and explains the expected dollar savings. It also shows the steps followed to find and develop an alternate method. Now, going one step further, how do we achieve this task? To answer this question, let us first investigate the four criteria required of every VEP submission.

The first criterion is to identify the area under study before any work on the study. This is to assure that all savings result from the study of function analysis.

The second criterion is without a doubt the most important. The Value Engineering Proposal (VEP) must show evidence of function analysis. Without the study of function, there is no way one can go beyond the design and seriously investigate the concept.

The third criterion requires a qualified budget officer to verify savings generated from the VEP.

The fourth criterion requires management to review the VEP and concur with its recommendations.

So, how do I receive VEP? The VEP must meet four criteria: Identify Study, Investigate Function, Verify Savings, and Inform Management. In addition, the VEP should follow the Value Improvement Process (VIP)¹.

SUPPORTING FUNCTIONS

The four primary supporting functions and their categories are²:

- Assure Dependability—any function that facilitates maintenance and repairs.
- Assure Convenience—any function that makes a product/structure stronger in the opinion of the designer, and makes it easier to use.
- Satisfy User—any function that makes the basic function desired or wanted by the owner/user.
- Attract User—any function that projects a favorable image, fulfills visual expectations, or utilizes materials or methods preferred by the owner.

The FAST diagram in Figure 1 contains some of the important functions involved in meeting the annual VE goal. Training people in VE was identified as assuring a dependable flow of Value Engineering Proposals. Talking to the installations and assessing their needs prior to giving VE training helps in identifying areas that are important to them, such as:

- Using live studies in the workshops.
- Informing management to gain their support.
- Briefing the installation Commander on the status of training and requesting support for further VE work.
- Understanding the students' skills and work experiences to focus on areas that provide the most benefit.
- Requesting comments from students.
- The training location best fits the students needs.

LIVE STUDIES

A live project is a new study not been previously worked. The study is a real-world exercise because

its final recommendation is will improve an existing item or process. For a live study to be useful, the facilitator must gather as much information about the project as possible. Do not be surprised if during the class exercise students discover the need to gather more information.

Factors to consider when selecting a live study:

- The time available for the students to work on the projects—Live projects generally require a lot of time gathering information and reviewing the steps or procedures.
- How well the live project relates to the student's work place—Live projects have a greater impact on learning when the study subject comes from the student's work place.
- The completeness of information gathered on the project—Regardless of the project, applicable costing and routing information are required.
- The job experiences of the students—Choose live projects that best fit the experiences of the students.
- Consider the travel distance from the classroom students will travel to gather more information.

REQUEST CUSTOMER WANTS AND NEEDS

Request comments and implement recommendations into future training. In a recent survey, some of our customers provided feedback on their wants and needs:

- People need incentives to do value studies after training is finished.
- Value studies require management support and participation.
- Emphasize function analysis and FAST diagramming.
- The course should be designed to allow adequate time to learn material.
- Trainers should offer their assistance on future value related projects.
- Use updated training materials.
- Use live studies.
- Instructors must also be knowledgeable in topics related to Value Management.

SUMMARY

The objective of training an organization is to provide them with the tools needed to initiate and complete VE studies. Consideration of customer's

wants and needs, and considering VE training requirements by SAVE, International, will result in quality VEP's.

Evaluating your VE program by identifying the functions performed, then developing a Customer FAST diagram will:

- Serve as a baseline to make improvements.
- Help analyze, speculate, and evaluate.
- Determine high-cost functions that have little value to the customer.
- Aid in developing training geared toward the customer.

REFERENCES

1. Karcher, T.D., "The Value Improvement Process," Society of Value Engineering, SAVE International Conference Proceedings, 1997.
2. Snodgrass, T. J., and Kasi, M., "Function Analysis, The Stepping Stones to Good Value," 1986.
3. Society of Value Engineering, SAVE International Conference Proceedings, 1992 - 1996.
4. Handbook of Industrial Engineering, 2nd Ed., .. Edited by Gavriel Salvendy, Institute of Industrial Engineers, John Wiley & Sons, Inc., 1992.

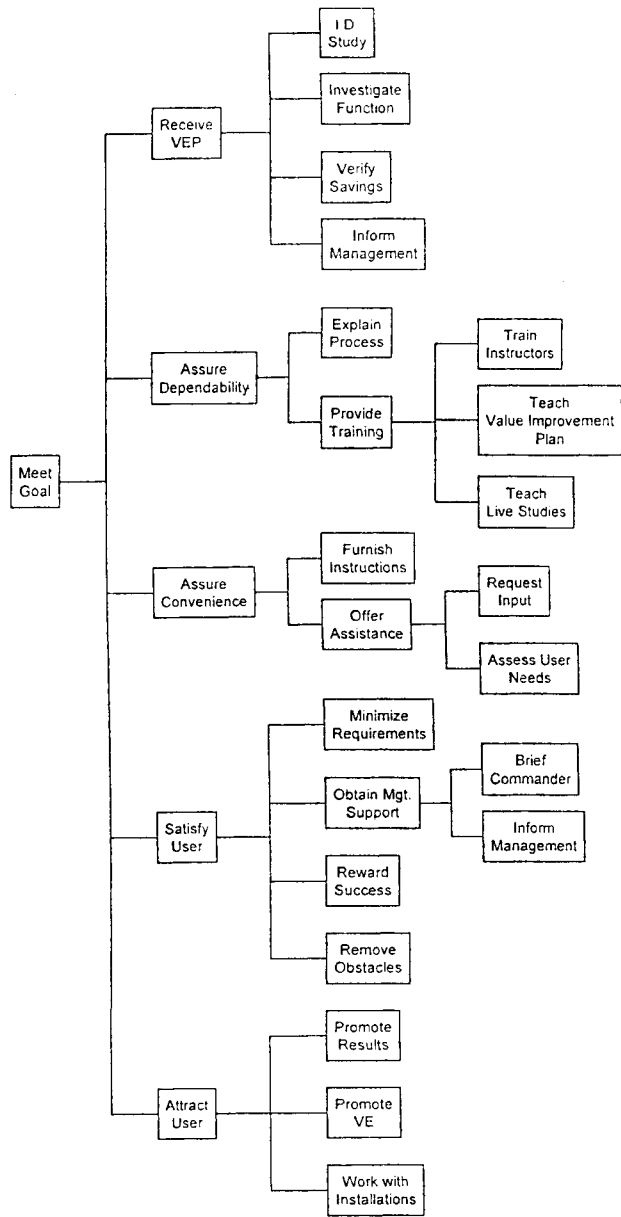


Figure 1. Customer FAST--Meeting VE Goal