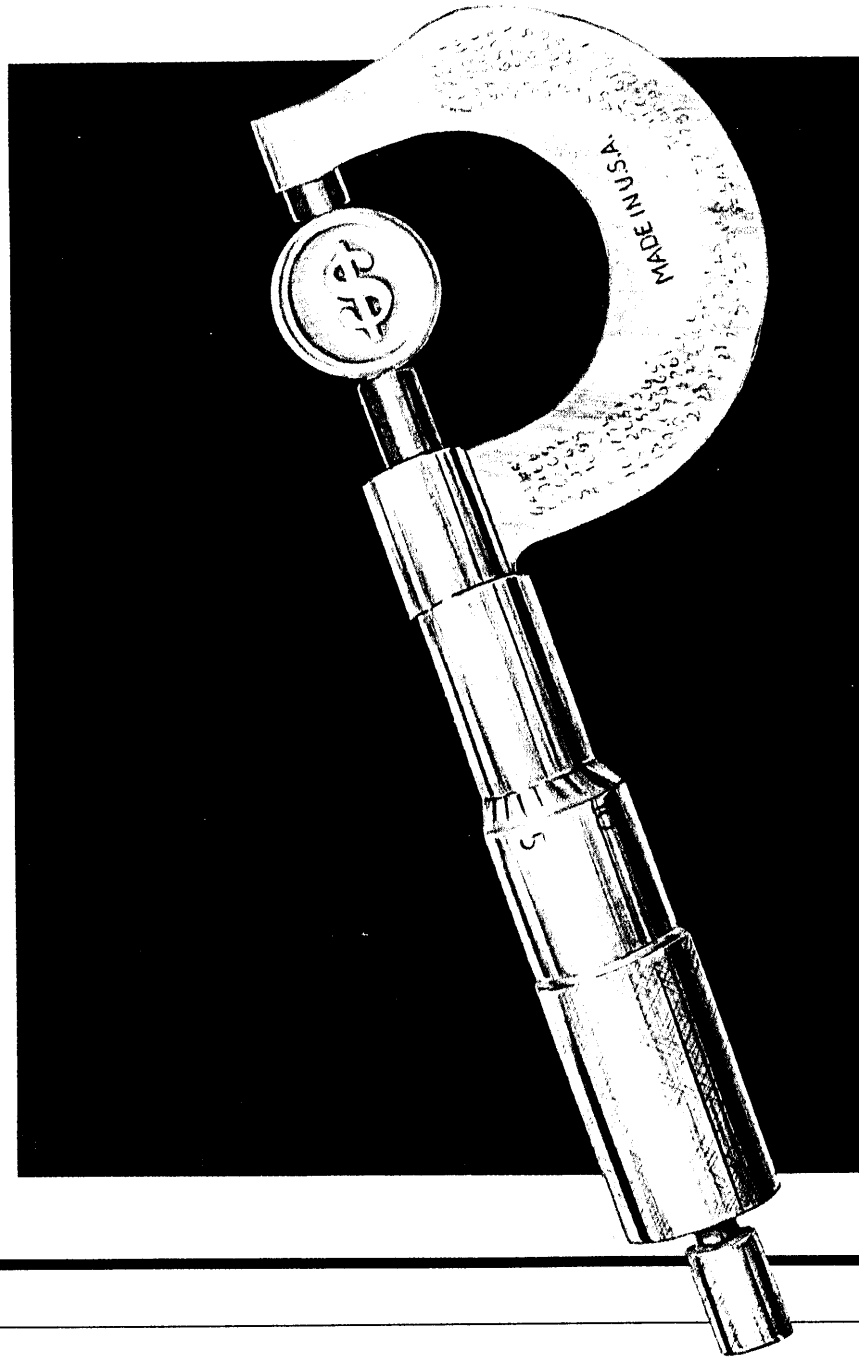

How PMs can take the full measure of profits

James A. Lorincz, editor-in-chief

VALUE ANALYSIS

Value analysis (VA) has been hailed worldwide by industry as one of the most powerful analytic techniques devised to help companies improve the quality and competitiveness of their products. It is one of the purchasing department's most valuable tools.

VA specialist Dean Ammer describes the technique as "the study of the relationship of design, function, and cost of any product, material, or service with the objective of reducing its cost through modification of design or material specifications, manufacture by more eff cient process, change in source, possible elimination or incorp ration into a related item."

Another value specialist calls t process simply "engineering unn cessary cost factors out of a pu chased item." Buyers may quibb over such definitions, but not ov the results it produces. Purchasi departments throughout the indu trialized world have been savi their companies hundreds of m lions of dollars every year by usi VA principles and techniques fi

developed by the late Lawrence D. Miles when he was on the purchasing staff of the General Electric Company. Later, as a VA consultant and the consulting editor on value analysis for *PurchasingWorld*, Larry Miles championed the valuable contribution that the value analysis/value engineering technique offers to industry.

Larry Miles was *The Master*, and much of what follows are his best thoughts on how you can start putting good value thinking to work for your company.

Let's begin with a quiz. The measure of just how healthy your current value analysis program—or any properly functioning VA program—is, can be found in your answers. Even one "no" answer could indicate that your VA program is heading for serious trouble—or worse yet, is moribund!

1. Does your company have a formal value analysis program in operation?

If your answer is no, then...

2. Would management be willing to support a value analysis program if a coherent program were presented to it?

If your answer to question 1 was yes...

3. Does management support the program actively, openly, and with its fullest prestige?
4. Does a committee from purchasing, marketing, engineering, and production assign priorities and act on recommendations?
5. Are targets of opportunity systematically selected?
6. Are cost savings and other signs of progress formally reported to top management?
7. Is the program's structure such that it does not discredit executives or other individuals who have championed the benefits of VA if objectively selected targets of opportunity are not achieved?

This latter point is extremely important. To be successful, VA programs must work across departmental lines, discovering the real "functional" needs of customers, whether they are internal requisitioners or end user customers. And the VA technique thrives in an environment that unlocks creativity, taps all possible sources of solutions, and encourages participation in the process.

What VA is...and isn't

Maybe this should be the starting point. Value analysis isn't just common sense, Larry Miles was fond of saying. Once he was asked by an alert young buyer about the nature of VA principles. The buyer had been told by a senior buyer that they already used VA in their buying, but it just wasn't called by that name.

The young buyer questioned...

Q) Is analyzing bids VA?
A) No.
Q) Is getting suggestions from suppliers VA, or is it learning the way our materials flow through the vendor's plant?
A) No.
Q) Is a company suggestion system or negotiations with bidders for a better price VA?
A) Again, no.
Q) Is searching very hard for just the right vendor VA?
A) No, that's just good purchasing; good buyers always have done that.

"Then," said the buyer, "just as I thought, I have not been using VA. What should I do differently?"

"Nothing," Miles told him. "You would continue all of your good purchasing procedures; but you'd add some others. You have already fulfilled the first requirement—willingness to invest extra energy to do an extra good job for your employer."

What value analysis is not, however, isn't as important as understanding what it is, how it works, and what can be accomplished with it. VA involves the study of function and function/cost relationships. Value is achieved when the proper function is secured for the proper cost. The buyer must take the necessary actions to know the proper functions and costs. This procedure leads to some rather fascinating areas of inquiry. The buyer has to discover and understand what functions the user wants—not just what material or service he has requisitioned.

How value analysis works

You have to be creative in everything from development of resources to sorting out what is important by communicating with people with a wide range of technical, cultural, and emotional make-ups.

Through such investigation, the buyer learns how much functions are worth. He develops experience in evaluating functions—in dollars and cents. Because functions can be accomplished in a number of different ways, the lowest cost way of fully accomplishing a function establishes its value.

Information to help buyers establish this cost/function relationship—value—comes from many sources, including suppliers, business and trade magazines, technical literature, R&D and engineering studies, and the experience of users and buyers.

But nothing is ordered until the purchase has been approved by the requisitioner. After all, value, in a real sense, is in the eyes of the beholder. And so Miles would often be asked these questions about value:

Qualities of value thinkers

Ability to motivate others
Sincerity
Creativity
Desire to learn
Analytical thinking
Product knowledge
Good communicator
Business knowledge
Situational analysis
Diplomacy
Perseverance
Salesmanship
Persuasiveness
Aggressiveness

Q) What constitutes value in a product or service?
A) Good quality which costs as low as (or lower than) the competing products or services.
Q) Who causes good value, or poor value, in a product or service?
A) Anyone. Good quality results when your answers are better than your competition's.
Q) What does VA try to do?
A) End all costs that do not contribute to either use or aesthetic functions.
Q) How does it work?
A) By studying ALL functions and creatively developing alternative, less costly ways of producing them.
Q) What is its methodology?
A) Systematic development of information for analysis and application of creative judgment in solving specific problems.

Getting started

The first step in applying value analysis principles is to identify function. This is the basis from which all VA principles follow. Because it is so basic, it is often said to be "common sense" or "exactly what engineers are trained to do." Nothing could be further from the truth.

Value thinking works only when old habits of thought and accepted ways of doing things are questioned, challenged, and creatively answered. That is central to VA thinking—creative efforts from many different disciplines must be brought together at the point where cost can best be affected. And that point is function.

Value analysis begins by naming these functions—using a verb and noun. For example, use functions associated with an aerosol spray can of paint would be: actuate switch, contain gas, dispense fluid, etc.

This naming task, which on the surface, seems to be such a simple task, is, in reality, very difficult because it requires the ability to break complex things into their simpler component functions. Detailed engineering knowledge may indeed be required, but precise thinking, expressed in precise language, is the key to unlocking creative solutions.

Value specialist, not engineer

The professional designation of the Society of American Value Engineers (SAVE) is that of the Certified Value Specialist, or CVS. SAVE is careful to point out to its members that unless they are indeed licensed engineers, there is a danger in calling themselves "value engineers," advertising or promoting themselves as such, and/or offering value engineering services. For that reason, this article has retained Larry Mile's own terminology—calling the discipline Value Analysis, and its practitioners, value specialists or analysts. It's value engineering for engineers.

The secret to naming functions is to begin by stating the function in exact sentences and then selecting meaningful verbs such as *contain, move, shorten, support, protect, ignite,* and *mount* to describe the use functions. Nondescript verbs such as *provide* should be avoided.

By now, problem solvers should see that Miles has formulated a direct and simple way of focusing on "what we are trying to do." Every component could be systematically analyzed for its value contribution to the product or procedure under study.

To Larry Miles, there could never be a reason not to bring the full force of analytic powers to bear on what might seem (to the untrained) to be a small or inconsequential functional component of a larger system.

Six steps to VA buying

Once function is established in sentences of verb/nouns, you can follow these six steps that Miles formulated for VA procedure:

Step 1. Gain an understanding of the situation. Don't let this one throw you just because it appears to be self-evident. Not only is it important to be able to state the function in exact terms, but it is important to gather all relevant facts about the manufacturing and use environments.

Step 2. Understand the function. Each component has its own unique reason for being. The danger here is in overlooking some not-so-obvious functions.

Step 3. Develop function/cost relationships. The rationale on this point is as simple as the efforts we make not to ship air. Everything which contributes to function should bear a cost that is proportionate to its importance.

Step 4. Compose and write the main problem for which a solution would bring positive results. The buyer is looking for a cure to a problem and is preparing for the creativity step which must follow. He states the problem in words that lead toward a solution. He will always start the sentence with the words "How might we...?" so that it will be easier for many people to produce more ideas.

Step 5. Promote innovation by sparking real creativity. If the problem under study is technical, get technical help. Creativity takes many forms and comes from many sources. Remember: Solutions come from the interplay of the right disciplines tackling the problem at the right point.

Step 6. Select the best option and take the best action. Once a list of possible alternatives is developed, it's a lot easier to pick the ones that look most promising. A little brainstorming, using the talents of specialists from each department, can turn up some interesting options. Remember not to be judgmental when developing the alternatives. But once good ideas emerge, it's time for action. And that's the point at which real cost-saving solutions and quality improvement are possible.

Quality and VA mix well

There are many reasons for implementing VA programs. Cost reduction may result from standardization of componentry, eliminating redundancy, substitution of newly developed materials, or even adapting new concepts in product

packaging and distribution.

But one of the greatest demands being made upon value analysis programs today is meeting the challenge to increase quality while reducing cost. Here's how VA impacts quality:

Q) How do VA principles and approaches reduce cost without lowering quality?

A) By concentrating on the function the customer wants, getting it at competitive cost, and eliminating cost that is not essential to customer function.

Q) What is use function?

A) Use is the utilitarian function the customer gets from a product or service. A bottle, for example, contains liquid.

Q) What is the aesthetic function?

A) Aesthetic is the function that pleases the customer, communicates product quality, attracts purchasers, but does nothing to achieve the utilitarian function—a decorative bottle for perfume, for example.

Q) What is the basic function?

A) The basic function is the purpose for which the customer buys the product or service. A refrigerator preserves food.

Ask what they want

The buyer's understanding of quality and value concepts can lead to significant gains in a company's profitability. "Value" in a product or service means appropriate cost and performance. Appropriate cost is as low as, or lower, than the competitor's cost. Determining appropriate quality is more involved. It depends on what functions the customer needs and wants. It can have many variations in weight, size, durability, color, and other properties.

Before purchasing, engineering, sales, and others can improve quality, they must first learn just how the customer wants the desired functions performed. Buyers must be inquisitive, Miles believed, because that is how they can learn what functions the customer wants, and what the customer defines as "higher quality." Remember, the functions that the customer really wants may not be stated in the original requisition.

If buyers go through these steps, they will provide what the customer really wants—at substantial savings to the company. *PW*

PurchasingWorld invites you to send in examples of how value analysis helped your company. Send your success stories to PurchasingWorld, 6521 Davis Industrial Parkway, Solon, OH 44139.

Resources for value thinkers

Following are resources that may prove valuable to you in your efforts to take the full measure of product quality and cost improvement through value analysis.

The Lawrence D. Miles Value Foundation

The Foundation's goal is to improve productivity and cost performance in government agencies and businesses throughout the world. Projects include the development of a national center for public training and education in value techniques, and the development of educational programs such as its Value Engineering Theory and Basic Value Analysis correspondence courses. The Foundation also looks for new applications and new fields such as health care, energy and utilities, computers, and legal systems. Further information on the Value Foundation can be obtained by contacting Mrs. Eleanor R. Miles, R.5, Box 840, Easton, MD 21601, or **Circle 336**

The Society of American Value Engineers (SAVE)

SAVE is the professional group for American value specialists. In addition to its certification program, SAVE sponsors an annual conference and offers educational materials on value analysis theory and practice.

☐ Catalogue of books and publications. **Circle 337**

☐ Directory of consultants. **Circle 338**

Standard references

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Fallon, Carlos. *Value Analysis.* (2nd revised edition). 1980.

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Periodicals

Value World quarterly magazine. **Circle 339**

Value Digest. Defense contract newsletter. Monthly, $150 per year. **Circle 340**

***PurchasingWorld* Reprint**

You'll find the theory of value analysis sketched in *PurchasingWorld*'s reprint, *Miles on Value Analysis.* Many of the hundreds of case studies illustrating how VA works in practice were first described to *PurchasingWorld*'s readers by Larry Miles, our consulting editor on VA for more than 10 years. The two-volume reprint is now available from the *PurchasingWorld* Reprint Library for $17.95, plus one dollar for postage and handling. Write to: *PurchasingWorld* Reprint Library, 6521 Davis Industrial Parkway, Solon, OH 44139.