

Goal Is Higher Profits

VALUE ANALYSIS PROGRAM IS ENABLING AXELSON TO REDUCE UNNECESSARY COSTS

Two years ago, Gordon A. Walker, chief executive officer of the USI Industrial Group, selected the Big Dutchman division to host USI's first seminar on value analysis.

Among the attendees were representatives of the Energy Equipment Company. One of them was Billy Ray Bruton, then an engineer for the Axelson division.

Bruton saw strong possibilities for the application of value analysis within Axelson. He summarized these in a memo to Glen H. Denison, then president of the Energy Equipment Company and now president of Axelson, as well.

"Value Analysis would help us save thousands of dollars at Axelson," Bruton's memo concluded.

Glen Denison agreed. A value analysis seminar was held at Axelson a few months later and a full-fledged value analysis program was underway.

The results of the past 16 months would have surprised even Bill Bruton. Axelson launched an intensive value analysis program which has resulted in a total gross potential annual cost reduction of nearly \$2.5 million.

In the process, Axelson has become one of USI's major proponents and users of value analysis techniques and Bill Bruton, whose title is now director, value analysis/value engineering & training for the Energy Equipment Company, is probably USI's most experienced practitioner of that new and exciting management tool called value analysis.

What Is Value Analysis?

Exactly what is value analysis and what is there about it that has recruited new enthusiasts throughout the Energy Equipment Company, as well as at Wyatt, Big Dutchman and other USI operations?

Value analysis, similarly known as value engineering, value control or value management, operates on a premise of staggering simplicity: To remove unnecessary costs from products, while maintaining their value to the user.

But, skeptics often ask, why bother? Why not apply the same effort to building sales, or expanding markets? Is this not, they ask, the aggressive, forward-looking view?

Adam Smith answered that question two hundred years ago in his classic work on economics, "The Wealth of Nations," when he pointed out that competition rested on the ability to produce goods at a cost which is equal to, or slightly below, the cost at which a competitor can produce an equivalent product or service.

"How simple it would be," Smith wrote, "to improve profits by paying less for what we buy, or by charging more for what we sell."

But in modern economic times, we generally can't buy for that much less and we generally can't sell for

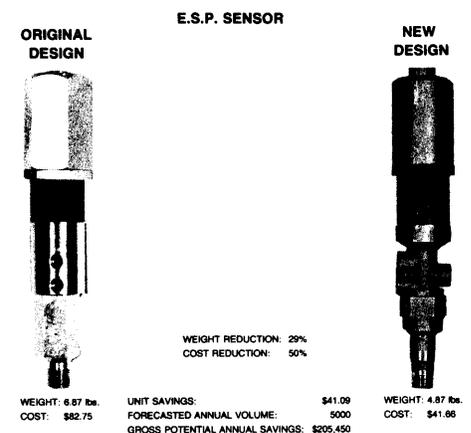
that much more. Consequently, one route that remains open is to identify and remove the areas of high and unnecessary cost within the operational structure.

That's what value analysis is all about—first finding, and then reducing or avoiding the unnecessarily high costs which add little or nothing to the real value of the product.

Glen H. Denison, for example, expects this of value analysis:

Remove Unnecessary Costs

"We expect to identify and remove unnecessary costs from our product manufacturing and paperwork procedures, while increasing value and efficiency. The goals and objectives are to produce improved products with increased profitability—products which are better than, or equal to, competitive products in function, dependability, serviceability, esteemed value and profitability.



This comparison illustrates the weight and cost reductions which Axelson has achieved in just one of the many parts it manufactures.

"Furthermore," Denison added, "value analysis should produce effective software procedures and better employee relations to assure optimum utilization of physical resources and maximum productivity".

The incentive for introducing value analysis to selected USI companies and divisions began about two years ago. The nation's economic climate was bad, and was expected to become worse.

C.R. Luigs, who had just been elected USI's president and chief operating officer, envisioned that profit-

able sales would be difficult to come by, and that margins would be under great pressure.

The most attractive option appeared to be cost reduction. Some costs, Mr. Luigs realized, could be reduced quickly, but only temporarily. Other, deeper-rooted costs could be reduced permanently, but it would take time. Thus, a systematic application of value analysis was introduced to get at those deeply imbedded costs.

The main target of a value analysis program is typically the manager—found throughout industry—who would say: “Don’t confuse me with facts. My mind is made up.”

Obviously, this kind of thinking has no place in industry. But all too often, managers attempt to solve problems solely on the basis of past experience or personal prejudices. In doing so, they are failing to consider all the facts that can be learned about the problem. As a result, the problem is usually not solved at all: Another problem is simply added to the existing one.

Determine All Facts

Value analysis holds that a problem can be defined only after all the facts are known, all the possible solutions are identified and evaluated, a decision made as to the best possible solution and the selection then put into effect.

Throughout its evolution, six basic steps have emerged as a typical value analysis job plan. These are: the information phase, the speculative phase, the analytical phase, the planning & preparing for action phase, the presentation and reporting phase, and, lastly, the action phase.

Axelson, like most other USI companies and divisions, received its primary introduction to value analysis via workshops and seminars conducted by Value Analysis, Inc., of Newport Beach, California. Since its founding nearly 20 years ago, Value Analysis, Inc., has conducted seminars and workshops for more than 300 companies, including 36 for Boeing, 13 for John Deere, 11 for United Aircraft and 23 for Zenith Radio.

“The first day of these seminars is critical because you have to cut through the fears, the myths and the resistance in order to establish a positive mental framework,” according to J.K. “Dusty” Fowlkes, co-founder and president of Value Analysis, Inc.

Fowlkes says he pays special attention to the first day indoctrination because experience has taught him that the concept of value analysis is widely misunderstood, and therefore widely feared.

“Most managers attending their first seminar think that value analysis is rooted in mathematical or scientific theory,” Fowlkes says. “They’re afraid that the concept will go over their heads and they’ll appear foolish in front of their associates and their bosses,” he adds.

So Fowlkes spends the first day explaining that the foundation of value analysis is nothing more than human psychology.

Using Psychology

Fowlkes uses psychology to teach psychology. He spends part of the first day breaking down walls of resistance and melting pockets of fear. He explains that as far as value analysis is concerned, a B.A. in history is as good as a B.S. in engineering, and a degree from the school of hard knocks is as good as either. He tells those who have brought slide rules and electronic calculators to put them away. They won’t be needed.

“The most difficult thing in the world to learn is that which is obvious,” says Fowlkes, “so we teach the managers to recognize that which is obvious. Then

we teach them why unnecessary costs exist and what they can do about them.”

Fowlkes explains that unnecessary costs usually exist for several reasons. These frequently include lack of an idea, lack of information, temporary circumstances, honest wrong beliefs, and habits and attitudes.

Fowlkes says the two most important elements to consider are “value,” which is the lowest cost to reliably accomplish a function, and “function,” which is what the product or service must do to make it work and sell.

“Don’t confuse cost with value,” Fowlkes cautions. Added materials, labor and overhead increase costs, but not value, he explains.

Armed with this initial exposure to the basic tenets of value analysis, Fowlkes then recommends the team approach to problem solving. At Axelson, a team assigned to a project typically includes an engineer, an accountant, a salesman, a purchasing manager and a manufacturing manager, says Bill Bruton.

Fowlkes urges these teams to dissect the ritualism and unquestioned repetition which, over time, tend to become an integral part of a procedure or a product.

“Start from the very beginning,” Fowlkes urges. “Ask yourself why a procedure is done, for whose benefit and at what cost. How can it be made shorter and simpler? Need it be done at all?”

Basic Ground Rules

Axelson’s 16-month experience with value analysis has enabled it to formulate some basic ground rules—some starting points which often yield up a workable value analysis solution.

These include:

- Eliminate the entire item or combine it with other items performing a similar function.
- Eliminate or combine functions within an assembly.
- Simplify parts or substitute standard items.
- Where possible, relax tolerances or specifications.
- Reduce quality inspection tests to practical levels.
- Look for improvements in the manufacturing, assembly and installation phases.
- Reduce inventories of spare parts and support material.
- Use specialty vendors to build at reduced cost.
- Reduce weight. Try to miniaturize.
- Eliminate unneeded finish operations.

Using these and comparable approaches, Axelson Task Group Teams have identified about \$2.5 million of gross potential annual cost reductions and has already released projects with a savings of some \$750,000 to the production phase.

By 1980, Axelson plans to achieve a gross value analysis cost reduction of about \$920,000 a year, giving it a 3.5% return on gross sales. It estimates that the cost of the value analysis program will equal about 10% of the gross savings.

“We are enormously pleased at what’s been achieved at Axelson through value analysis,” says Bill Bruton. “Every one of our managers has a good, working idea of what value analysis can do and they instinctively apply value analysis judgments in their thinking,” he adds.

“That’s all value analysis really is,” Bruton says, “A second, more critical level of thinking.”

In addition to his value analysis duties within Axelson, Bruton is now working with other divisions in the Energy Equipment Company to help them set up value analysis programs.

“It’s working well for us. It can work just as well for others,” he concluded.