# PW Principles of value analysis

## Basics of function analysis


**By Lawrence D. Miles**

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The essence of all value analysis technique is securing proper function for proper cost. In engineering, it is to secure proper function for proper cost by design. In manufacturing, it is to secure proper function for proper cost by processing. And in purchasing, it is to secure proper function for proper cost by buying. Buying function!

The purchasing value analyst's buying philosophy is predicated on function. He starts out by saying "I will not pay out my employer's money without knowing that it is bringing back needed function at proper cost. I will determine the function we need for each expenditure, and I will secure it for the proper cost." In short, he will do his best to buy function.

### How to buy function

What does "buy function" actually mean? In a classic example, a VA trained buyer was shown plans to make 48 costly, troublesome, silver-brazed joints at a cost of several thousand dollars. Based on appearances, the buyer judged that the brazed joints served no necessary function. If so, he would eliminate that cost.

The product was 12 large hydro-electric generators, each containing a 1,500 foot winding of rectangular copper bus. Five 300-ft. sections of copper bus were being painstakingly brazed to make up the 1,500 ft. needed. The joints seemed to add nothing to the operation of the generators. So the buyer asked if there was any engineering reason. The reply was, "no, but the maximum lengths we are able to obtain are only 300 ft. long." Next he checked with the manufacturing manager to see if there was any need for the brazed joints. Once again, the answer was no. And in fact, the manufacturing manager pointed out, the joints made some operations even more difficult.

Thus, the buyer confirmed his initial evaluation that no function was being served by the expenditure to braze the joint. It was a needless cost.

Obviously his next job was to find and negotiate for copper bus in 1,500 ft. lengths. On a tour of a copper mill he saw that copper bus was fabricated in a continuous length and cut into 300 foot lengths. It turned out that he could readily buy it coiled and shipped on a skid in the 1,500 ft. length he needed. What's more, the base price would be lower as well.

### More for less

The net result of this buyer's determination to buy function was to improve the product a little, simplify manufacturing quite a bit, and add thousands of dollars to company earnings through reduced costs.

Let's examine his specific actions in terms of value analysis:

(1) Determine function. In this case, the function was simple—join wire (always try to express function as a two-word, verb-noun phrase. It can almost always be done).

(2) Evaluate function. Here the idea is to determine the dollar's worth of the function to the company. In the case of the brazed joints, the value of the function was zero—although brazing performed the function beautifully the function itself was unnecessary.

(3) Secure function for proper cost. In this example, determining the proper cost was easy. Because the function itself served no value, the proper cost was zero. And in effect, that is what the buyer accomplished. Although establishing proper cost is not always simple, it is an integral part of the process. In a later column, I'll discuss some of the ways to go about establishing proper cost.

This three-part approach—determining function, evaluating function, and securing function for proper cost is essential for focusing in on areas of opportunity. But the approach very often is beneficial in just how you use your vendors. Rather than going to suppliers and saying, "here is an item we need, can you supply it?" try taking the function tack with them instead. Try something like, "here is a function we need to perform in large quantities that must be performed within such and such limits. We must have at least the same quality and dependability that we receive now, but we must have the function performed at a lower cost. If you make an important contribution, we will give you important business. With your expertise and skill, what do you propose?"

Sales people like this kind of approach. It gives them an opportunity to use their expertise, their specialized knowledge, equipment, and materials. But best of all, it allows them to use their resourcefulness competitively and profitably. One sales manager described this approach to me as being as good as a license to steal.

To the uninitiated it may seem to be just that. But this isn't a case of the buyer throwing himself on the vendor's mercy. The VA trained buyer knows the function that must be performed. He knows the value of that function to his company. He knows alternative ways of performing that function. What he is doing is rewarding the vendor who comes up with the best alternative at the best price. Any salesman who thinks he's stolen the business under those conditions is fooling himself.

But how does the buyer learn the functions of the materials or services he purchases? Simple. He asks questions. He looks. He reads. He pays strict attention to periodicals, attends trade shows, and painstakingly questions sellers who call upon him.

### Help from the inside

Eventually people in the buyer's own organization will come to him with their needs expressed in terms of function—like the manufacturing engineer who asked for help in lowering the costs of an appliance temperature control. "It costs $9 now, but we really have to get it for $5." And he presented a list of required functions, and their present and required costs.

*Next month Larry Miles will continue his discussion about function, and will explain some of the techniques used for buying function.*