

The Trowel and The Sword

LAWRENCE D. MILES

Miles Associates

It is my opportunity tonight to chat about past, present and future. I will emphasize the future.

In the beginning, 1947, twenty years ago, there were good profitable, growing companies; there were failing companies; there were companies in between. Their effectiveness in using the approaches, techniques, and management tools around them determined their group. There were then, twenty years ago in top management, good techniques in management, in manufacturing, in sales, in engineering; and in the second level excellent techniques in design, in manufacturing methods, in industrial engineering, work simplification, quality control, cost control, management forecasting and measurement. All of these techniques existed when value analysis or engineering came into being.

It was accordingly born in a fine, successful, and really quite well developed industrial community. Then the question was, "What else would help," "What is needed?"

It appeared that something could be provided that would make a good company better and allow some of the in between companies to come into good profitable operations.

Research began and in about five years a group of management approaches, which you well understand, were started. They have been progressively improved by the tremendous work of value engineering people during the past fifteen years. So much for the past.

What is the present? We have a system of management approaches and techniques, which

you already understand, which, when needed and properly used, get good results. So much for the present.

The question now is "How to apply them?" "How to make greater achievement in the years to come?" "Where do we go from here?"

Unexpected difficulties, which increase as results increase, are being encountered. "What is the essence of them? How can we accomplish more results more effectively by understanding the course of these difficulties?"

To establish a background of reality I would like to first give you two examples. Then we will study the philosophy. We will then talk about some of the situations involved. We will later have two more examples, and observe the development of the retarding factors.

The first is a control device which had lost two-thirds of a large market because of high costs, and was in a loss position. It was examined, as the result of a "Marketing Department" request, using value engineering techniques. It was soon seen that costs in the order of 25 per cent could be eliminated with no quality deterioration and actually some slight improvement.

What happened? The manager went to the vice president and asked that the work be stopped.

The second example: When a company with about \$5 million business per year lost its profit position, the Vice President of Engineering, as a member of the President's Council who was very much concerned at this depreciating condition, came to me. He had heard of Value Engineering

and he wanted my help in finding a good Value Engineer. I helped him get one and a seminar was held. In the seminar, among others, one purchased item was included. A large casting represented \$500,000 of purchasing cost per year. Four changes could be made and were put into effect immediately after the seminar, saving \$160,000 each year.

What was the result: The Vice President of Engineering, who had sought my help, hired the Value Engineer and to whom he reported, prevented the Value Engineer for the succeeding two years from getting a raise, let him know that he was unwelcome in his office, and then shifted him to a lower level of reporting in the organization.

Understanding the "why" of these decisions will give us better guidance in how to deal in the real life environment in which Value Engineering will be growing in the next twenty years.

Let's look again at Case Number 1, the control. All responsible management people knew that this control was in "trouble," and that management committees had completed cost studies and "found nothing significant could be done." There had been a full time program in engineering. Everything had been done that could be done. Also, full time work in manufacturing, and in purchasing. They had completed their work and it was not possible to do anything substantial without lowering the quality.

Recognize now the predicament these people are in—if a different system comes along, a different approach, a different type of thinking that doesn't require extensive investment, or extensive research, and shows that 25 per cent can be removed with no quality reduction. The manager can consider himself in a very bad position, and he probably is.

We will use the word "embarrassment" for want of a better word. He may suffer embarrassment beyond his endurance. Naturally, he wants to put an end to the approach before it goes too far.

We will take Case Number 2, the casting: All of management and peers knew that the large casting was the sole responsibility of the Vice President of Engineering. He handled that item. When the seminar was set up, he recommended against putting it in. He said, "I have handled that myself; nothing whatsoever that could be

done has been left undone. It's really a waste of time to include it in the studies." The Value Engineer said, "That is only one of six projects and we would like to give the wide range to our people. Also it represents \$500,000 of cost. Unless you specifically request that it be taken out of the seminar, we would like to have it in." He did not request it taken out. So \$160,000 of cost came out.

Now, apparently the Vice President of Engineering felt, shall I say, professionally naked. Naked in what way? He felt embarrassed and defenseless and hurt. His reaction is probably very much to be expected, probably very common.

What is the real problem? In both of these cases they were desperate for help. In both cases they got it. In the second case, the Engineering Manager himself asked for help. It reported to him. Both got the earnings needed. It appears that their problem is one of "Embarrassment of professional people." It appears that the pain of personal embarrassment to a professional person is much, much, more important to him in decision making than the amount of profit of the company or his operation.

May I now say that throughout my entire discussion, I am not intending in the slightest to criticize professional people. We act the way we must act in the environment in which we live. These are all examples of excellent, successful companies and management personnel. If you, for a minute, feel that any of these managers are low caliber people who "Deal emotionally instead of logically," (like we do?), then I have ceased to communicate. These are top successful people. Can we help to establish an environment which will save them from this painful — and hurtful — predicament?

I was interested in a comment of Paul Robbins, who said companies used to have management and labor, but "Now they have — management, labor and brains." This sets it up a little differently. Are the "Brains" group particularly sensitive to the injury from embarrassment? Probably "Management" and "Brains" merge as professional people. He said they deal constantly in discretion and judgment. Perhaps there is something in "Embarrassment" that is lethal to a man who establishes his reputation on the basis of discretion and judgment.

Does embarrassment in his work actually destroy the reputation of the professional man? Does it make it impossible for him to advance to the higher levels of jobs for which he is qualified? In examining this subject, I would like to bring forth some broader thinking.

What is this embarrassment, or the factor with which we are dealing? I am not sure that ultimately we will call it embarrassment. There may be a better word for it, but right now that is the best handle I can put on it. Embarrassment seems to be involved when I am expected to do something and don't. I am then embarrassed. When I am expected to know and I don't, I am embarrassed. What I am expected to do and I don't, I am embarrassed. When I am expected to be and I am not, I am embarrassed. When I am expected to be properly dressed, according to what my peers and superiors expect and I am not, I am embarrassed. When I am expected to be ready and I am not, I am embarrassed. When I am expected to go, if I don't, I am embarrassed. It seems that whenever the expectation of others is present, the specter of embarrassment stands out. We expect this child to make certain grades; if he doesn't, he may be embarrassed. We expect the General to be called a General, if he isn't somebody may be embarrassed. We expect a salesman to make certain sales. If he doesn't he is embarrassed.

There is something I would like to learn—is there any situation in which embarrassment can result where there are no expectations?

What are the antidotes for being expected to do something? How do we react? How do we try to overcome it? A child has poor grades. Reaction could be rebellion. A college student is expected to get acceptable grades. He doesn't. He rebels against the teacher, he rebels against society, or against his parents. This is one reaction. A business professional is expected to do something, to be something, to accomplish something. Probably one most common reaction is rationalization. The market changed. The competitor did some unexpected thing. Or the business professional may fight it. Get rid of these techniques, get them out. Sometimes defeatism is the reaction. How would a housewife react if her husband comes home and says, "I am starving but this food is only half cooked."? She would fight it. She would pick it

up and throw it in his face, at least the kind of wife I want would.

How would we start to end or control or limit the influence of embarrassment on important decisions?

How do we attempt to control in other areas? If we want to control the speed of a car, we find out where the sensitive control is. We get hold of it and undertake to handle it. Of course, it is the accelerator. If we want water from a spigot, we learn that the sensitive control is the valve handle. Beauty in women! How do we control that? Perhaps by the number of times they go to the beauty shop, or perhaps by the use of the masculine imagination? Anyway when we find what the sensitive factor is, we control it. Then get the results required. What we need to do then in connection with embarrassment is to find the variable and deal with it, and it just seems at this stage that the variable is expectations.

What is the source of expectations? They certainly come from the boss in many cases. They come from the peer group, and they come from subordinates. I don't know, perhaps they come from ourselves. Perhaps we ourselves have an image of ourselves, and expect ourselves to do something or be something.

Now, in this frame of reference, I want to relate two more examples. Perhaps we can observe how embarrassment enters.

The product on one large job was produced and sold at cost in competition with the world market at a relatively low figure. This company — and I am reporting on four different companies in these and examples — decided they wanted Value Engineering to make possible a reasonable earning. They got two Value Engineers.

Among other equally significant work was a copper bus project. Five 300-foot pieces of copper bus were braised to form a continuous winding 1500 feet long for large generating equipment. The Value Engineer arranged with a copper producer to ship it in 1500-foot lengths, greatly simplifying manufacturing, improving the product slightly and decidedly reducing costs. The result? The "scope" of the Value Analysis and Engineering function in that company was reduced, and their budget further limited. What happened?

Engineering knew that 300 feet was the maximum length available in copper bus. Manufacturing knew that 300 feet was the maximum available length. Purchasing people knew that 300 feet was the maximum length and got out the handbook which proved it. They probably had discussed longer lengths before, and each time they would get the handbook out which says "No," only three hundred feet. Now, when the Value Engineer couldn't see the functional or economic reason for cutting it off at 300 feet in the mill, and went out to the supplier who agreed, made the shipments, lowered the price, it embarrassed them all.

In the next example, two Value Engineers were invited to take the challenge of increasing the annual "cost reduction yield" in a large company, at a time when it was "hurting" for earnings. In two years they increased the annual cost reduction contribution to earnings from \$3 million to \$6 million. They were then "made available" as surplus personnel. What happened?

How do we take \$3 million more out of costs? To accomplish this amount of added earnings, dozens of large actions, and hundreds of small ones—similar in nature to those just reviewed—had to be brought into play and had to have objective action. There were no large tooling expenditures, it was something that could be done by a penetrating thinking process. In all cases, it could have been done before. This cruel thought brought embarrassment to the men making the small and large decisions alike. Add to this the fact that the company was not now "hurting" so badly for earnings. The "Logical" management action was to send them on the way.

THE "EXPECTATIONS" OF THE BOSS

We are studying these cases, where management people wanted results and got them, were embarrassed by them and ended the techniques, so we can learn better how to deal with them. It appears that the boss has a very important part to play in what is expected throughout the whole organization.

In November of 1964, I had the good fortune to start with an excellent client company that had a very superior president. He had been president of this company for a year or two. It was a diversified company with some thirty-five or so plants. His one basic operating belief and premise is "I

know my people could make every product we are making for about one-half the cost, with all the custom features, all the performance and all the quality. He told them he expected them to do it. It was not a threat. Nobody would be fired. But at every meeting he told them he knew they could do it and he expected them to.

Before he became president, he was the manager of one of the company's departments. They took charge of this product, and they did take out half of the costs and improved it. He was therefore on very sound ground. So his men, his engineering managers, his manufacturing managers have no doubt in the world of what was expected of them, right from their top management. He knew they could take out half the costs. It was just a question of whether they got the approaches, the techniques, the thinking and search processes. I might add that the company stock now sells startlingly higher than it did in November of 1964.

There are many things I don't yet understand about embarrassment. If we live in a neighborhood, we must do what is expected of us within that neighborhood. If our neighbors all mow their lawns, we might be embarrassed if we didn't mow ours. I used the word "might" because there is a grey area perhaps where we can learn something.

I saw a cartoon that amused me very much. It showed one neighbor's lawn which was just immaculate. The man was out there sweating away over the lawn mower, his wife was down on her knees, snipping around the hedge. Right next to this well kept lawn the grass was two feet high and all seeding out. A sportsman came out of the door at his home with a big cigar in his mouth, golf clubs over his shoulder, and a big smile on his face and walked out to his sport's car headed for the golf course. For some reason he was not embarrassed.

Perhaps we can elect either to be or not to be embarrassed. Maybe we accept (or could reject) the yoke of embarrassment. Perhaps some engineers, some professional people, some managers do not elect to accept the yoke of embarrassment on the basis of what is expected of them. We hope to later learn.

Let me summarize. Second and third line professional people often react violently against good profit improvement work which directly benefits

their activity, if it is in an area of their previous discretion, even though they requested the work and supervised it. It appears that they believe their boss could have expected them to have previously done it. It appears that they are, therefore, deeply embarrassed. It appears that they probably believe their future opportunities under this boss will be limited as a result. It appears that the specter of personal loss through this embarrassment is a much larger factor in decision making than is the effect on the earnings of their operation. The amount of embarrassment appears to be sensitively controlled by expectations.

My conclusions, as of this early date in this study are that in order to accelerate the use of and the results from the value analysis of the engineering system in the future, we also must know much more about the cause of embarrassment to management and professional men, which follows exceptionally good results. We must know much more about the means for minimizing or ending this embarrassment. It appears that the topmost manager is the sensitive throttle which may most readily control expectations, and thus increase or decrease large amounts of embarrassment. It appears that the fine, good management practices of selecting "good" managers, then, putting confidence in "my" managers, as any good company does, may create the feeling that "my boss expects near perfection on my job" — thus causing large potential for manager embarrassment especially in situations of unexpected short range, low investment, large improvements.

It is, therefore, necessary to be adept both with the trowel for building magnificent profit structures, and the sword for fending off those normal, virile, ever-present forces which would stop the work and destroy the structure. They are both parts of our task.

I close with a live example. Two weeks ago, in San Francisco, I visited a young engineer friend of mine, a mechanical engineer working for one of the countries finest industries in the engineering

department. I gave him one of these excellent booklets of the Department of Defense, "Reduce Costs and Improve Equipment Through Value Engineering." It has dozens of examples.

He called me a week later. He said, "I read that booklet through and it set me on fire. I went down to the office and in three days saved \$8,000." He and I had previously talked this embarrassment angle over completely. He said, "I had this in mind every step of the way. I wondered if any embarrassment could come into this. I saw how some of our engineering specifications add cost that don't do anyone any good." "It happened we were just figuring on some compressors. Purchasing had their quotations of \$20,000 in on them and were ready to place the order. I suggested to them that they ask the same suppliers to quote on their standard product that handles the same amount of air, with the same maintenance, the same life and all other conditions. They quickly did this. Instead of \$20,000 the cost was \$12,000."

He said, "Of course, this went to my boss." "Here was the possibility of spending, instead of \$20,000, for the specified item, \$12,000 for similar performance. The Engineering Manager looked it over and said, 'There is no question but what it will do the job well. It will meet all the requirements.' Purchasing was told to place the order. After they left, the manager said, 'I dislike it that Purchasing asked someone to quote on a product that was not according to our specifications'."

"Now," my friend said, "I saw the embarrassment coming, and I knew I was a part of it." He said, "I could have spoken up and said 'Boss — I know, I told Purchasing to do it.'"

But, he said, "I'm pretty new on this job so I decided it was best from my personal interest viewpoint not to tempt fate, and to hope that the matter would never come up again."

Let's learn what embarrassment is and what it does!