

Value Service - Schenectady
January 3, 1961

Mr. H. B. Miller
Mr. C. W. Bryant
NEW YORK OFFICE

Would you, Mr. Miller, pass along to Mr. Paxton these ten comments that will provide to him understanding which will help make his experience with the results of Value Analysis and Measurement techniques more meaningful. A few of the thoughts may be helpful to him in accomplishing his objectives in the January meeting.

Our work is entering a new phase--one of helping a new surge by management at all levels to understand the General Electric value problem and associated needs, then to learn of the process or system for solving these needs.

Right now, more basic value philosophy is required to permit understanding of value experiences and efficient and wholesome understanding of the value needs and their solutions.

L. D. Miles/M
Att.

January 3, 1961

TO: Mr. Paxton

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Courtesy of Hal Miller

Purpose: To Improve Understanding

Action Now Desired: Communicate with Associates

Some considerations appropriate to this moment in the vital job of getting value into our products.

These comments are the result of my experience--they may be but are not necessarily the beliefs of Hal Miller or Bill Bryant.

L. D. Miles

1 - "We have the best value we've ever had in our products" - a dangerous misunderstanding.

We're kidding ourselves but not our competitors.

VALUE

to the customer is essentially appropriate performance
and appropriate price

to the manufacturer, appropriate performance
and appropriate cost.

(My remarks will be confined to my area of knowledge--the appropriateness)
(of costs. Please interpret Value used here to mean appropriate costs,)
(lack of value to mean un-appropriate costs as measured by comparison)
(to competitors.)

Probably what our managers who make this statement (and unfortunately believe it) mean, is, "We have more performance at lower cost than we have ever before had." --A dangerous trap.--

The only "Value" that has meaning in decision making is obtained by comparing to our competitors today - not to ourselves yesterday.

The costs of many of our products are so high, when properly evaluated by comparison to competition, that in many of our product lines, we probably have the poorest value in history. The problem won't be solved unless this poor value is recognized as such, and fixed.

2 - "Volume will fix everything."

Shocking numbers of higher management in our company, and others, look at half-empty factories and "breakeven" charts and take two actions:

They "dream" of the large benefits that will come when volume somehow builds up, and are inclined to criticize sales people.

They take injurious temporary steps to lower "breakeven" point.

In an important percentage of the cases, the problem is that costs are much too high, which limits sales potential and marketing strategy. They are featherdusting the problem of appropriate costs with both unsuitable organization and tools--suitable only for the conditions of a decade or more ago.

Time passes. They "maintain the image", lose volume, lose industry position.

3 - Departments often elect to refuse business - even at market levels - if their "costs are too high," even though it is within their pre-planned percentage of the business and the capability of their facilities.

This creates a sick or dying business throughout. Sales prices are not fixed by costs - but by market levels. The buyer cares not the slightest what extra costs of overhead or machining or handling or other, the producer has.

The result of refusing orders at market levels is lost markets, low volume, emptying factories, low manufacturing quantities. It creates illness in every function--sales, engineering, manufacturing. The cause is kept obscure. It produces a crop of rationalizations to explain failures--foreign this, domestic that, alley shops, fly-by-nights, etc., etc.

The opposite practice which is in harmony with basic economic law is...

- a. Determine the appropriate percentage of the business.
- b. Prepare facilities for it.
- c. Bid market levels for our appropriate share.

If we don't get our percentage, we have a sales problem or a performance problem.

If the customer doesn't buy because the competitor's product out-performs ours, we have a product performance problem--fix it.

If he still doesn't buy, we have a sales problem--fix it.

If he buys but our profit is too low, we have a value problem--fix it.

Each of the three problems is cured by a different set of tools and skills. Clearly separated, they can probably be effectively solved. We know that if Value deficiency is the problem, it can be.

- 4 - Engineering leadership, by and large--with some notable exceptions--does not realize that for competitive business' present, in-place organization, knowledge, and technique for identifying and preventing unnecessary cost are completely inadequate. As a stock and option holder, I am deeply concerned. You know, Mr. Paxton, that I consider this of crucial importance to the company or I wouldn't name it.
- 5 - The day of "everybody do it" value is gone--it doesn't even approach today's necessary value--but most of our responsible leaders grew up through the "everybody do it" period. They believe it is right to use the same broom - just sweep harder and smarter.

Much of General Electric is in a new type of business. New to us. Products are matured--or fast maturing. Appropriate performance advances have often become one-tenth of the job and appropriate cost advances have become nine-tenths. Still used, however, are the organization, the techniques, the skills, and the competence from the--now gone--performance age.

- 6 - At all levels, we see great reluctance on the part of management to change from the "approved" organization and tools, which best fit most problems ten years ago, to those which meet today's demands.

No one below the general manager is accountable for appropriateness of costs. This responsibility he delegates in largely unmeasurable fragments into all functions and to all people. Someone is accountable for appropriateness of performance, of shipments, and most other factors important to the business.

The general manager cannot know enough about the individual situations which lock in the extra cost to bring pressure to bear for different decisions. The result is 25 to 50% higher cost initially designed and tooled into products than the reasonably attainable.

Generally speaking, general managers, when shown that an innovation in organization and in technology in which they would have a value control manager responsible to them for appropriate costs, would result in initial and continuing competitive costs, and reduce their value problem to the same magnitude as their other problems, want it.

They are concerned about the problems caused if their organization deviates from the "rule."

Perhaps deep scars still exist from the harsh steps which were necessary a few years ago to force change in organization.

Perhaps it would now be timely to place high emphasis on...

Make decisions on the basis of "what is best for the business."

Be prepared when decisions or organizations follow the traditional pattern or the supposed "rule" to prove that following the rule is best for the business.

7 - Higher than appropriate costs come from wrong decisions - big and little - all throughout an organization.

a) A large mistake made by managers and men of all levels is to assume that most decisions were made on the basis of "what is best for the business." They are not. Our experience with decisions involving change show the controlling criteria to be as follows:

90% of decisions on basis of avoiding personal loss, and minimizing personal risk

10% on basis of "what I think is best for the business."

Only the few persons who view themselves as above personal loss are able to use a high degree of objectivity. In general, they are probably pretty well limited to our highest officers.

b) On the subject of decisions which lock in so much unnecessary cost, it should be recognized by all management that objective data play a far smaller part in decision-making than usually assumed.

All decision-making is selecting of shades of gray which represent the best interests of the business. If it is white or black - there is no decision to be made.

The shading of the gray for any one decision-maker dealing with any one decision is made up of three parts.

Shade I. What he believes comes from above - his boss' ideas, top company viewpoints - policies - practices.

Shade II. His own previously built attitudes about this type of situation or material or process, etc.

Shade III. The objective information which he is able to get together in that point in time which bears on the situation.

If we could set up these three shades, a photo cell would make the same decision.

Experience indicates that...

Shade I varies with each individual usually between 10% and 80%.
Shade II varies with each individual usually between 20% and 50%.
Shade III varies with each individual usually between 30% and 60%.

One significant reason why such large amounts of unnecessary costs continue to exist in all products is that usually much less than 50% of the decision criteria are objective data.

- c) Very very much better value usually results from very different approaches in the product.

Here again the tremendous benefits to improved value, which come from top management understanding, are seen.

Each level of management and each member of management has a screen. Each screen will be a magnifier or a minifier.

As a typical illustration, twelve tentative approaches involving change to drastically improve value may be brought to the general manager.

1st - his screen may take out six.

2nd - the approaches hit the screens of the responsible section managers whose screens reject two.

3rd - it gets to the screen of the sub-section manager who rejects one.

4th - the twelve alternatives have shrunk to two, which now have the blessing from above. Personal risk is minimized, at the do-it level on only two.

Some of these top screens are very wrong - and prolong enormous amounts of non-contributing cost in the product for years.

It is all of these types of situations which the Value Control techniques bring into focus which account for much of the 25% - 50% results.

- 8 - May I call attention to a most injurious management practice which often injures value.

"Assign a man who is a non-believer the task of investigating something new - in learning about it, he will persuade himself."

This is often done..

Once in ten, it works;
Nine times in ten, it fails.

The company cannot afford to assign...

Men steeped in past practice, embarrassed by the effectiveness of new value tools, and anxious to prove that past practices were good, to be the front runners. The case of good value in their area may be set back five years.

For example, any man who wants to prove that a diamond is no good can do so in one second with a hammer, or he can prove that an automobile is no good in five seconds by committing murder with it.

9 - Our studied appraisal for your guidance...

Degree to which the full potential of the basic Value Analysis Techniques has, to date, been developed in General Electric	15%
Amount of preventable unnecessary costs in new designs of apparatus-type of equipment now going into production	40 to 50%
Amount of preventable unnecessary cost in new designs of consumer type of products	25%
Amount of preventable unnecessary cost in military type of equipment	over 50%

10 - VALUE CONTROL

While the use of Value Analysis techniques produced shocking results - either before or during design or manufacturing - they were often injurious to the men involved whose managers and peers, now seeing the unnecessary costs, down-rated them in supposed competence on the basis of their past work.

This has understandably created real reluctance in some areas to have this knowledge and techniques around.

To largely end this embarrassment and fear and to competently meet today's challenge for very much lower costs, the Value Control system has been developed.

It is being properly brought into the departments by teams of three of their own carefully selected and trained men.

Training requires nine months.

We are now two months along on the training of the first nine men from three departments. We expect to include ten more departments in 1961.

IN CONCLUSION

When research begins, no one knows the result or the scope.

This research -- "How to save money" -- started in Purchasing.

This research provided new techniques and also showed that enormous amounts of money could be saved by using certain new value techniques in manufacturing, and in engineering. It, furthermore, showed this not to be three problems, but one.

It is now apparent that the techniques have opened up a gold mine for engineering and for management. It awaits but the burro and the shovel.

Some time ago you asked about what our competitors are doing to learn Value Analysis techniques. At present, three companies have competent personnel engaged in the business of teaching and consulting on the original techniques.

They are...

Value Analysis, Inc.

Five (5) former General Electric Value Engineers
Offices: Schenectady, Chicago, Los Angeles

Value Engineering, Inc.

Two (2) former General Electric Engineers
Office: Boston

Value Programs for Industry

Two (2) former General Electric Value Engineers
Office: Schenectady