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SURVIVAL TECHNIQUES AND THE TAXPAYER REVOLT

This last year has seen many changes in the United States, not the least of which is the phenomenon popularly known as the "Taxpayer Revolt." The people of this country are alarmed and angry with what they perceive as wasteful use of their tax dollars. Eliminating waste and inefficiency in the Federal Government has been the primary mission of the General Accounting Office from its beginning in 1921; but today's economic problems present a most perplexing problem to the Federal Government.

This Conference is focusing on the traditional value engineering definition or concept--improving the function, form or fit of specific pieces of hardware. Today I would like to take a little literary license with the term value engineering and relate it to the broader problem of increasing the productivity of both industry and government.

In these times of rising and double-digit inflation, the most essential government services, from social programs to national defense, are becoming more and more expensive. Even if we could eliminate the last ounce of waste in government, these inflationary pressures (now predicted by the Administration to be 8.5 percent this year) make it

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more and more difficult to hold costs down. These inflationary forces appear to hit most segments of our society with a tremendous force, and immediate relief is not in sight. There is no doubt that a top priority for the Nation is the abatement and cure of these inflationary forces.

Although finding solutions to these problems appears to be as difficult as isolating the causes, productivity gains in the economy could provide some immediate relief from these inflationary pressures and provide for a long-run reduction in the rampant inflation in the U.S. economy.

Material shortages during World War II led to the creation of innovative material and design alternatives in U.S. production. It was found that alternates in many cases functioned as well, or better, and cost less than their originals. From this beginning, an analytical discipline gradually evolved in industry which challenged proposed ways of doing things and systematically searched for less costly alternatives. Today this discipline is commonly known as value engineering, value analysis, value control, value improvement, or value management.

Value engineering includes a systematic analysis of each function at the lowest life-cycle cost consistent with performance, reliability, quality, and maintainability requirements. In other words, anything providing less than essential functional capability is unacceptable, anything providing more at a greater cost is unnecessary and should be modified or eliminated. Features or characteristics of an item which exceed actual need and contribute nothing to essential functional

capability result in "gold plating" or waste. Why can't this analytical tool, and others be applied to the broader problems faced by our industry and government?

WHAT IS PRODUCTIVITY?

Productivity may be defined as the difference between resources used (input) and the quantity of goods or services produced (output) for a given quality. This can be measured for an organizational unit or for the economy as a whole over a period of time by comparing a specific period with a base year. Improvement in productivity is an increase in the ratio of outputs to inputs--a higher quantity of goods or services (without quality deterioration) at the same cost, or the same goods or services at lower cost.

For a company, productivity means producing at a lower cost than its competitor. For a government, productivity means providing more service for the same tax dollar. Who would disagree that such an accomplishment in either case is important? Increasing the productivity of Government programs and projects is one necessary response to the "Taxpayer Revolt"--one of several responses taxpayers of this country are seeking. Since value engineering can also be used to reduce production costs, it also is a technique welcome to the taxpayer wherever it is applicable.

DECLINE IN PRODUCTIVITY

Productivity achievement in the United States in the last decade has been poor, averaging 1.6 percent during the period--a discouraging figure when compared to the 3.2 percent average of the first two post-war

decades and compared to the 5 and 6 percent figures of more vigorous trading nations such as Japan or West Germany.

This slow growth of productivity recently was reflected in results of a survey by the Bureau of Labor Statistics. In about three-fourths of the industries surveyed, productivity growth was lower in 1977 than in 1976. Slowing of productivity growth in the past 10 years contributed to the slow economic growth. If productivity in those 10 years had increased at the same 3.2 percent annual rate of growth of the two previous decades, output per hour would then have been 111 percent higher in 1977. This difference would have meant more than a \$100 billion increase in terms of real gross national product (GNP) at the 1977 employment level. This lack of productivity growth has cost the United States immensely. During 1978 productivity growth continued to decline and the Nation's growth rate was a lowly 0.3 percent. This year the outlook so far has been similarly disappointing.

While some developments of recent years may be reversed in the years ahead, the outlook today is unfavorable. Edward Denison of the Brookings Institution, recognized as an expert on the subject of productivity, points out that optimistically, productivity will grow at no more than 2 percent per year. He states that " * * * we have lost fully one-third of our productivity growth and productivity is the only source of an expanding economic pie from which competing social claims can be satisfied."

Since a sustained rate of productivity improvement is vital to maintaining a long run competitive advantage for the United States in international trade, this lower productivity growth rate is one of the

factors which has weakened the ability of American industries to compete with foreign producers here at home or abroad. Jerome Rosow, President of the Work-in-American Institute, defined the present U.S. situation clearly when testifying recently to the Joint Economic Committee:

"The preservation of American plants and jobs as against both domestic and foreign competition, depends in large measure on productivity growth. For example, Japanese competition has very little to do with low wages or subsidies. Japanese wages in the past 20 years have risen much faster than American wages, but Japanese productivity has risen faster still."

The competitive threats from Japan's and West Germany's sustained high productivity growth rates are formidable. West Germany has achieved a growth rate in productivity twice that of the United States; Japan's productivity growth rate has been over three times ours.

We may well ask ourselves why? Why has this country's productivity growth rate declined so drastically compared to Japan and West Germany? These two countries have concentrated on those factors which produce productivity growth while the U.S. has not.

One thing is clear. The processes of productivity growth are not automatic. Our future will continue disappointing if factors which sustain growth are not strengthened. We need more of the disciplined approach of value analysis to help in slowing down and eventually reversing this trend of declining productivity.

NEED FOR SUSTAINED PRODUCTIVITY

Productivity growth in both the private and public sectors is an important factor in achieving our stated national goals such as

- making U.S. goods more competitive in world markets,
- protecting the quality of the environment, and
- reducing inflationary pressures.

If we are to accomplish these goals in the face of increasing scarcities of energy and raw materials, we must use what we have more efficiently and effectively. Skyrocketing fuel costs and unemployment as well as inflation have eroded the capability of Government to satisfy public demands. While demands for public services have increased, there is pressure to reduce the tax revenues with which to pay for these services, as shown by the "Taxpayers Revolt."

From our discussions with congressional leaders and administrative officials, we at GAO conclude that finally there are emerging some appreciation and awareness of the critical relationship of productivity to economic growth. The President recognized this in his Economic Report, stating that a large part of our worsening inflation in 1978 stemmed from poor productivity. There is a need to make sure that this aroused awareness in the White House is translated into necessary Federal actions in the Congress.

One of these actions should be to increase awareness at all levels of government of the value engineering technique as a cost-cutting tool. Responsible people who spend taxpayer dollars in all areas of government--Federal, state and local--must increase their use of analytical techniques. Assuming a need for an item or service is real, the discipline of value analysis requires valid and complete answers to six questions:

--What is the product or service?

--What does it cost?

--What does it do?

--What is it worth?

--What else would do the job?

--What would the alternative cost?

There is another analytical tool that has gained widespread acceptance in the development of "hardware" that we must use in a much broader context--that is life cycle costing. What I am saying is that, in addition to using good value analysis, we must look at programs and costs over the longer run. Life cycle costing means evaluation of alternative courses of action, taking into consideration all known costs and effects for a reasonably predictable period of time. Too often, particularly in Government, political and economic pressures force us into actions that have a relatively low front end cost--but result in unacceptably high costs down the road. We must start thinking more of the long-term implications of our actions. The answers provided by good analytical work should focus on a more precise overall determination of what we are trying to do and how much it will cost.

VALUE ENGINEERING AND GOVERNMENT PAPERWORK

One of the barriers to more effectively using value engineering is related to the fact that it was developed in response to material shortages. This materials-oriented birth continues to shape peoples' perception of value engineering. However, value engineering should not be conceived of strictly as a method for reducing material costs. Once this conceptual

barrier is eliminated from peoples' minds, the way is open to applying the value engineering philosophy more widely within the Government. This has been done to some extent in the area of redesigning forms and paperwork systems. For example, by examining forms in terms of all of the costs required to come up with a completed form, a great deal can be saved in terms of labor--even though materials savings are nonexistent.

The total costs of Federal paperwork are difficult to determine; but the Federal Paperwork Commission, which I served on, estimated that the Federal Government internally spends \$43 billion per year on just paperwork. Some of this is necessary but a substantial portion is unnecessary. The Commission's limited studies identified opportunities for first year cost savings, avoidances, or redirections of effort away from paperwork valued at more than \$10 billion. I believe that the disciplined approach of value engineering offers an opportunity to make even greater savings in this area.

Value engineering can relate to productivity through formal programs and through making others aware of value analysis principles. The impact of individuals not involved in formal value engineering or cost cutting programs is often significant. Many of you undoubtedly read the article in Value Digest on Hughes Aircraft's Cost Improvement Proposal Program which reached \$1 billion in savings in 1978. Nearly 2,000 employees participated in that program.

VALUE ENGINEERING AND NEW TECHNOLOGIES

There is one particular area where value analysis principles may have an influential impact on productivity. That area is technological innovation. Advances in technological innovation result chiefly from organized research and development. These advances contribute to long-term productivity growth through the application of more efficient equipment and processes. Unfortunately, there has been a relative decline in funds for research and development over the past decade, leading to a negative impact on the rate of productivity growth in the next. Value analysis is a potential tool for helping to stretch those limited funds for new equipment and processes to their maximum.

The need for greater application of value engineering principles in the technological arena within the Government was brought out in GAO's 1977 report on the lack of top management support for the Defense value engineering program. There GAO pointed to many advanced and full scale development programs for weapons systems that had value engineering contract clauses but few generated savings.

CONGRESS MUST BE INFORMED

Probably the most effective way of encouraging top Federal management support is through the appropriation and budget process. In this connection, I recommended in my November 1977 report that the Secretary of Defense inform the Congress of value engineering program savings on individual major weapon systems in conjunction with Defense's testimony at Congressional Appropriations Committee hearings on those

systems. This recommendation was designed to make the Committees aware of the extent of Defense's cost saving efforts on high-cost weapon systems so that those efforts could be considered in the Committees' deliberations on funding requests.

Defense since then has told us that it has not implemented this recommendation because the Committees neither requested the information nor expressed any interest in receiving it. Notwithstanding that, individuals in the Congress such as Representative Larry Winn, Jr. and Senators Jennings Randolph and Edmund Muskie have expressed an interest in value engineering techniques. However, I doubt that anything approaching the full potential of value engineering can be achieved in present or new value engineering programs in Federal agencies without the support of a larger number of Members of the Congress.

You see, I favor wider use of value engineering in the Federal Government. However, it should proceed carefully. It is important to draw fully from the actual experience of people organizing, administering, and operating agency programs before charting a course for expansion to other agencies. The Army conducts the most active and effective value engineering program that we know of, and the lessons learned by key people there should be shared along with those learned by people on programs that have not fared well.

The Army also maintains an active value engineering training program which might be considered as a potential source of training for a nucleus of key people in other agencies.

I incline toward some sort of an executive branch overseer, distinct and apart from the agencies, as desirable from the standpoint of maintaining unbiased accountability and a reasonable degree of uniformity, particularly at the procedural and paperwork interface with contractors. The Office of Management and Budget seems to be a logical choice. The new Productivity Council is another.

CONCLUSIONS

Today most areas of the Government are awakening to the realization that today's challenges are common to all and must be dealt with more cooperatively both in and out of Government. Governing must be carried on under conditions I have emphasized--overcoming resource scarcity on the one hand and rebuilding citizens' confidence in government on the other. Productivity improvement can be an effective way for each area of government--Federal, state, county, town and village--to deal with some of these challenges. And government service can be strengthened with assistance from value engineering ideas. We in government need all the help you here today can give us.

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