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True Grit

John Doer

Business is in love with the tough guys, you know them — the tough men and women at the top who get things done, who cut and slash to drive people and spur profits. We look down on the too-soft types, who worry too much about people, who delay in making tough decisions, unable to face reality and by their hesitation to take unpalatable steps to bring the whole corporation down around their heads.

But there is a terrible danger in accepting tough versus soft as alternate ways of doing business. There is special danger in heaping too much praise on hardened, profit-at-any-price performers.

First, they can be a bad example for the rest of us. Often hailed as saviors, the tough guy may have actually done what he did to avert total disaster. The trouble is, others learn about the tough actions, read about them secondhand and, entranced by the results and short-term profits, copy them. But unique situations seldom respond to copycat solutions.

Second, toughness becomes a cult, a new management fad. That's why too many managers have got what they refer to as "re-engineering" wrong. Many of them don't even stop to consider whether re-engineering is appropriate for their organization; they just know that it's this year's management fad. So what they end up with is just a glorified version of downsizing.

At a recent conference, surrounded by macho managers who had talked all day in self-congratulatory tones and shown colorful overheads to back up their stories of successfully tearing their organizations apart, one executive had the courage to say, "I sense quite a difference between the glossiness of how we are presenting what we have done and the messiness of what really goes on in our organizations."

That comment cuts right to the heart of what many of us have been doing: putting on a show and making it look good for the analysts, the investors and prospective joint-venture partners. What we forget to say is: "Hey out there, it hurts to do this. It isn't easy to fire 30 percent of the workforce. If you think it is, come and try it yourself."

Too many of us have assumed a new persona to take the individual out of the equation when the tough decisions have to be made. We talk of "our" organization and about "future corporate needs" as if organizations already existed in cyber-space out of the reaches of human concern.

If we are to create new organizations that are motivated and successful, that will create jobs for the future growth of our economies, we are going to have to change our corporate mind-set. Building trust and a duty to foster employability— which everyone seems to concur is the next step—cannot come from thinking of people as interchangeable units to be reassigned or terminated at will. We need to find an equitable, sensible and lasting way to motivate, develop and reward people. We need to treat them as what they are— people.

Look around you in your organization, and what do you see? Not marketing and engineering and human resources functions, not teams and task forces and divisions, but people. Getting the message across to the corporate world that our companies are filled with people would be a real step toward accomplishing a positive goal.

Business will always love the tough guys. But perhaps the truly tough guys will be the ones to discover new, people-sensitive solutions in an increasingly tough world.

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I first became aware of the value analysis/value engineering methodology in 1979 when I was employed by a value engineering consulting firm. My initial perception of the techniques was that they were used for the sole purpose of reducing costs. Unfortunately, that perception is held today by hundreds of thousands of people. But things have changed since VA/VE was originally developed, and cost reduction is but one of many benefits realized by applying the methodology.

When Larry Miles first developed value analysis, he was motivated by the need to obtain certain materials which were unavailable at the time. This prompted him to take a long, hard look at the "functions" these items were to perform, and speculate about what other materials might offer the same functions. As a result, the value analysis methodology was created.

As use of the methodology spread among major industrial concerns and U.S. government agencies, the primary focus was cost reduction. Even when the Society of American Value Engineers was originally formed in 1959, the name was chosen because the acronym "SAVE" implied "save money." It is interesting to note that Larry Miles, himself, questioned whether or not this was the appropriate image for the Society to project. He knew the VA/VE techniques were useful for accomplishing much more than just saving money.

In the past seventeen years, since my original introduction to VA/VE, I have learned that most people who have heard of the value methodology believe it is just another form of cost reduction. When talking to someone new to VA/VE and explaining what the methodology involves, it is not uncommon to hear "we do that all the time." This is because a description of VA/VE sounds, to someone unfamiliar with the structured process, like a logical way of doing business that each of us incorporates into our daily life, i.e., common sense. Further, the original emphasis on the cost reduction benefit of VA/VE has become widely accepted as the primary basis for using the value techniques. What I see now, as I visit different organizations and talk to people who use the value methodology, is a different, more creative attitude about how to use VA/VE. What I also see is the necessity for a cooperative effort at educating the public, and publicizing the benefits of this straightforward, pragmatic process.

When Total Quality Management (TQM) first became a "trend," I heard lively discussions between many value practitioners about which comes first: quality or value? As I learned more about the quality movement, it became apparent to me that TQM, properly applied, is actually a culture, or attitude, within an organization. The very name, Total Quality Management, implies an attitude toward excellence in everything the organization does, both internally and externally. I quickly came to the conclusion that VA/VE is an excellent tool for achieving Total Quality Management. I believe it is also true that VA/VE is the appropriate methodology to use in a re-engineering effort. I suspect there are other programs to which the value techniques are equally applicable.

As a VE consultant, I have been involved in leading team studies on numerous projects, primarily in the construction arena. While many of these studies were initiated primarily to bring the project within budget, several of them were motivated by other, more abstract problems, including the avoidance of problems (not related to cost), and the need to improve quality of service. For example, a State Transportation Agency conducted a VA/VE study of the procedures they used in Construction Engineering/Administration. The department had a budget of $25,000,000 to administer $280,000,000 worth of construction, with a staff of approximately 230 people. Their personnel managed the Agency's projects, as well as projects for other local government agencies. The VE team included various personnel from the Agency - project managers, resident engineers, project engineers and an inter-agency coordinator - plus the Vice President-Operations from a construction contracting firm that did a lot of business with the Agency. Goals of the study, defined at the initial kick off meeting, included: reduce/improve schedules, streamline processes, maintain quality, reduce cost to public for construction and
The results of the study were outstanding. The VE team identified potential annual savings of more than $5,000,000, or 20% of the department’s annual budget. The true significance of the savings was that the dollars represented personnel time and effort spent on administrative activities - such as paperwork, public relations, and training classes - rather than time spent administering (or managing) construction. The "savings" was actually redirected effort.

The same organization used VA/VE on a highway project, a 6-lane freeway, which was divided into three stages; stage 1 was to be constructed first, then stage 3, followed by stage 2. This study was initiated by the Agency as a means to solve certain problems they knew would occur during construction. The VE team was specifically directed to focus on the problem areas, and generate alternatives for solving those problems, rather than focusing on cost savings. Problems to be addressed included: establish a "haul route" for moving material from Stage 2 to Stage 1 of the project; identify potential for placing surplus material from an environmental mitigation site; identify where material will come from and/or go to for a landslide mitigation area; provide recommendations for preparing a Traffic Management Plan, including involvement of the public in the final plan; and coordinate construction of structures (bridges), particularly with regard to separation of SR125 and another road to be constructed.

The VE team identified several alternative haul routes and traffic management plans, as well as a number of construction phasing ideas. The most significant proposal, however, dealt with the landslide mitigation in an area which had been a recognized problem since the adoption of the proposed freeway alignment 20 years earlier. At least four different geotechnical studies had been conducted to determine the limits of the area, and recommendations for stabilizing it. The VE proposal was found to be superior to those four studies and, coincidentally, generated more than $3,000,000 in savings on the project. This VE study was recognized by the United States Federal Highway Administration as "Value Engineering Project of the Year" for fiscal year 1994. These two projects are fine examples of an organization whose goals were to improve the way they do business, not just to reduce costs.

In the industrial sector, a nylon business conducted a VE session on a design for a new manufacturing plant. During the Analysis Phase of the study, it was noted that their process included adding water at three separate steps, only to later remove the water in an evaporator. This solution was to make up the nylon salt at a different concentration, which dramatically reduced the salt storage system and eliminated a major process step. This change represented capital savings of $1.5 million, plus energy, operations, and maintenance cost savings over the life of the project. Combined with other ideas presented by the VE team, the overall results of the VE study totaled $4 million of capital cost improvement, approximately 6% of the $63 million project.

Another business conducted a VE analysis on a nonrevenue-producing Acetic Acid Volatility Control project to allow the plant to comply with the State’s Air Permitting requirements for Acetic Acid emissions. The project consisted of design modifications to the waste treatment basins, that allow control of basin pH through neutralization with caustic addition.

The functions of the proposed process were identified, and it became apparent that a significant portion of the project related to providing redundant systems to ensure continuous, uninterrupted supply of caustic. This was to avoid even short term violations of the Air Permit requirements. Brainstorming other means to provide for the function "ensure supply," resulted in an idea that eliminated nearly all of the proposed backup systems, by just adding a spare installed pump on the existing caustic storage tank. This generated savings of more than $300,000 - over 50% on a $519,000 project.

We are seeing both in construction and in manufacturing, the application of the value techniques very early in the course of a project or product. VE is being used to actually develop the concept design of a construction project. A CVS facilitator works with the design team, guiding them through brainstorming and function analysis to generate alternatives, or VE proposals, for what will ultimately become the design of the facility. Manufacturers are using the VE methodology to determine what new products they might need, and then to develop the products themselves, as well as their marketing strategies for selling the products.

Increasingly, we see organizations using the value techniques for "re-engineering" their processes and procedures. These uses of VA/VE are all indicative of a trend toward applying the structured job plan to solve innumerable types of problems, and define countless opportunities. While cost reduction or cost avoidance is
usually realized from application of VE, the methodology is actually much more than a cost reduction tool.

A dispute avoidance approach used in the construction industry is "Partnering." This is a process whereby all the parties involved in a project - the owner, designer, the construction contractor and his subcontractors - develop a working relationship in a one or two day workshop environment, to avoid problems such as delays, change orders, claims, etc. during construction of the project. During the workshop the individuals agree to processes for preventing disputes and for resolving issues that may come up during construction. Ultimately they all sign a "Partnering Agreement" which spells out the relationship(s) and processes to which they have agreed. The Partnering process is intended to ensure that all parties have the same objectives, reduce or eliminate the risk of liability, and prevent possible claims and/or litigation. The agenda used in a Partnering workshop is somewhat similar to the VE job plan, but it misses two important pieces we use in VE: function analysis and FAST diagramming, and a structured approach to creativity.

In a recent paper about this subject, emphasis was placed on the benefit of using function analysis and FAST. Developing a FAST diagram is a tremendous communications tool, and one which breaks through barriers of misunderstanding. For example, on a VE study of a highway project, the VE team included some of the engineers who designed the highway, and some of the maintenance people who worked on the highway. When a FAST diagram was developed, the engineers gained a new insight into what the maintenance people must deal with when working out on the roadway with traffic speeding past. At the same time, the maintenance people went away with a better understanding of what the engineers must consider when developing their design. FAST diagramming in a team environment allows all participants to openly express, and ultimately agree to, what they believe to be the functions of the project or process under study. The result is extraordinary communication, which frequently bridges wide gaps of misunderstanding.

The Future

In order to position ourselves for the 21st century, value practitioners worldwide need to be aware of roadblocks and work diligently to knock them down. If we use VE to build a better building or create a better product or improve a process, we must talk about what we've done. We must let people know how this straightforward, logical and structured process helped us be better managers, better marketers, more productive employees. We must emphasize how we used the methodology to avoid problems before they occurred...how we increased our market share by developing a strategy with a FAST diagram...how we added functions (or services) within our organization without adding people...how we shifted personnel focus to new areas, rather than shifting personnel out the door. VA/VE is a powerful tool for doing all of these things. It is a tool that, properly applied, adds to or improves the value of products, processes, facilities, organizations...a tool that can go a long way toward improving our world economy.

With all of these varied uses of the methodology, why is VE not more readily recognized and accepted as a proven process? This is partially attributable to the fact that those organizations who use the value techniques publicize their successes, but not necessarily how they achieved their goals. It is due more, I believe, to the perception that VE is strictly a cost reduction method; and it is also because people hear value engineering, and believe it is too technical for their purposes.

This very terminology creates the need for a value practitioner to be a strong, positive communicator, and sensitive to the reactions of those with whom he or she is dealing. In the construction sector, design professionals are extremely sensitive to, and often antagonistic toward, the prospect of having their designs "value engineered." They perceive the process as a group of their peers coming in to criticize what they've done. Often they believe the VE team will "cheapen" their project in an attempt to save money (the "cost reduction" perception again). In industrial settings, product design teams and process engineers often resist value engineering out of fear that their innovative creation will be made less "state of the art" after being subjected to a VE analysis. These negative feelings are the result of not understanding the purpose, the function, of VE.

A CVS facilitating a VE study will dispel these misunderstandings with the proper communication before the VE effort ever begins, and by including the design team in the VE process. The CVS, and the members of the VE team, must be in a "public relations" mode at all times: they must be positive about everything they say and write. This results in a much happier and more cooperative design team, as well as a higher probability for implementation of VE ideas.

The same is true in all applications of VA/VE, whether in construction, manufacturing, or in administrative processes and procedures. The people on the VE team must "sell" themselves, the value process, and the VE ideas they develop. This may involve an outside customer, or an internal customer such as another department within the same company. For VA/VE to become widely recognized and accepted, it must continually be sold.
There is legislation pending in the United States Congress which would mandate the use of value engineering by all federal government agencies. As a result of a Circular (A-131) issued in 1988, and reissued in 1993, by the U.S. Office of Management and Budget (OMB), those agencies who use VE were required to report their VE activities to OMB. During a three year period (1988, 1989 and 1990), there were reported savings of more than $5.5 billion as a result of using VE. In fiscal year 1994, approximately $1.5 billion were saved by federal agencies. These numbers are very impressive and would, on the surface, appear to be sufficient to support legislation to require VE in all federal agencies. However, again because of a misconception about what VE is and what it is not, there is tremendous resistance to the legislation. Here, too, is the necessity to "sell" the VA/VE process.

These are images we in SAVE are striving to change. There have been attempts in the past to change the name of our society to something other than Society of American Value Engineers. There are thousands of people who believe that we are an organization of engineers, and we teach and use an engineering process. They turn away from us, and from the methodology, because they believe they must be an engineer to participate. The SAVE Board of Directors believes now is the right time to change our image, because we need to draw in the people who are practicing other value-adding methodologies such as Total Quality Management, Re-Engineering, Partnering, Design to Cost, Quality Function Deployment, and many others. Those people and value practitioners should be united in our efforts to add or improve value. And we need to dispel the images of engineering and cost reduction that are so prevalent among those who don't understand the value methodology, so that we don't turn away individuals who have a valuable contribution to make to the improvement of our economy. To prepare ourselves for the 21st century, we must bring together all value practitioners worldwide, and we must join forces with those who offer other techniques to add or improve value!

**Conclusion**

The value techniques created by Larry Miles are much, much more than cost tools. Miles himself said, "The effectiveness in utilizing this system depends upon the understanding, training, and skill of the users, as well as the understanding of all business people in the environment in which it operates. Those of us who teach and practice the value methodology are reminded daily of how little people know about what we do for a living. What stronger motivation do we need about educating people and publicizing the benefits of value methodology?"

**References:**


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Dynamic and progressive leadership is probably the most important single factor in our highly productive private enterprise system. The future importance of leadership looms even larger because of continuing growth of business organizations and the dynamic trend toward more decentralization of managerial work. Positive leadership provides the spark that is necessary to activate a project and enable it to function properly in fulfillment of its purposes.

Even though a project manager has a philosophy of management replete with objectives, ideals, ethics, principles, and other basic concepts, the project manager cannot become successful without developing the skills necessary to get results through others. Today's leader gets results "through" people rather than by being "over" people. This is genuine leadership -- the "Heart of the Art of Management." Through diligent practice of this art a leader transforms plans into positive action in such a way that objectives are met.

This paper will present the following important aspects on how leadership relates to the management process:

- Essential leadership activities.
- Creative thinking.
- Decision-making.
- Delegating work and authority.
- Persuading and directing others.

A project manager seeking recognition as a leader should categorize their work situation in either one of two ways. The project manager has to consider whether the job they are currently managing requires to be task-oriented or people-oriented.

Task-oriented management usually requires physical accomplishment of the work at hand. Technical skills are of high importance. Other required qualities include:

- Being innovative. Seeking new ways to improve productivity.
- Being efficient. Completing tasks with minimum error and waste.
- Being cost effective. Reducing or keeping costs to a minimum.

People-oriented management requires the cooperation of others to do the project manager's job. The ability to establish good interpersonal relations with whomever the manager has contact on the job is of significance. Other desirable attributes include:

- Respect for subordinates and other personnel.
- Ability to inspire common purpose and team attitudes.
- Appearance of emotional maturity.

Creative Thinking

The importance of creative thinking has been expressed by H. W. Prentis, Jr., former Chairman of the Board of Armstrong Cork Company. He said that creative thinking is the one factor that accounts for all of the progress that the
The human race has ever made. Without creative thinking, we would still be savages, wearing skins in our cave dwellings.

Creative thinking makes it possible for a business leader to bridge the gap between known facts and the unknown. In this way, new and changing situations do not cause the manager to falter, to fail, or to lose their direction. New products, new methods, and other innovations so necessary for continued business expansion are made possible primarily because of the ability to think creatively. The leader's resourcefulness and initiative depend heavily upon this skill. Below is a practical definition of creative thinking.

Creative Thinking

The process of combining known facts with imagination or insight in bringing into being an idea or mental picture that is new or at least unconventional.

Perhaps an example will help clarify the above definition. The story is told of a young man who inherited a strong box manufacturing business. Sales volume was not good. This imaginative person got an idea while fishing which in a very short time put his business on an excellent paying basis. As he looked at his minnow bucket, he visualized a bucket within a bucket with insulation in between. He formed a mental image of a picnic cooler which could keep food or drinks hot or cold for fairly long periods of time. In this way, the well-known "Scotch Kooler" was born.

Many scholars have attempted to describe the mental process of creative thinking. Perhaps the best integration of work in this area is made by Professor John F. Mee in his booklet, "The Creative Thinking Process." With his permission the steps in creative thinking are presented below.

Steps in Creative Thinking

1. Develop positive attitude; concentrate.
2. Define the problem.
3. Exploration and preparation.
5. Incubation.
6. Illumination.
7. Verification and application.

The discussion that follows is also adapted from the above source:

The desire to create and a willingness to concentrate one's mental powers onto a specific problem are most essential. If a person chooses to start a fire with a magnifying glass, they must focus the sun's rays through it directly onto some form of combustible material. In a like manner, to be creative, they must focus the power of their mind onto the problem. This requires concentration.

In defining the problem, the individual must make sure they understand its nature and scope. They must also estimate its practical limits. They cannot solve a problem until they know what it is.

Exploration and preparation involve fact-gathering and the sorting of the person's knowledge of the subject under consideration.

"Wild thinking" has to do with applying all known ideas pertinent to the problem in every conceivable combination. This encourages new concepts and points of view.

Incubation involves unconscious thought which gives ideas time to "hatch." It is believed that an individual can do very little to influence this phase of creative thought.

Illumination is the step wherein the idea "hatches." Insight, a peculiarity of creative thinking, brings into the mind's eye the new idea or the new combination.

Verification takes place when the idea is judged as to its applicability, and this step completes the creative thinking process.

Occasionally a project manager claims that they cannot think creatively, but usually they simply lack confidence in themselves. Psychologists report that all people have some creative thinking ability, and it
can be improved with effort and a positive attitude. The following are some objections to creative thinking, along with answers to these objections:

1. I don't have time to create.
   Answer: Creative ideas save time because they develop more effective ways of work.

2. Only geniuses can create.
   Answer: All normal people have sufficient IQ.

3. It's not my job; let research do it.
   Answer: Creation applies to management just as much as it does to science.

4. I don't have the personality to sit quiet and create -- I'm an active person.
   Answer: You can create while working or resting or fishing, whether you are an introvert or an extrovert.

5. My ideas would not be accepted.
   Answer: Some ideas are rejected every day, but many are so you'll never know until you try each idea.

Decision Making

No conscious human action can be taken until decision-making has occurred. Each project manager is regularly faced with alternatives. These can be narrowed ultimately to a point where the manager must choose to act or not to act. Either result calls for a decision.

Decision-making involves the use of logical thinking to determine the best way to reduce the risk in a given situation and to gain the values that are wanted. It is not a simple process. Neither is it effective until the decision is converted into action. Often, carefully chosen decisions are not implemented because the leader lacks confidence in his own judgment or that of others. It is difficult to accept the responsibility for taking that last hard step of action after the decision.

A practical definition of decision-making is as shown.

Decision Making Approach

The systematic and rationale approach of eliminating alternatives in order to achieve a desired result by taking the best course of action.

What alternative to eliminate is a matter of judgment. Unfortunately, no one has discovered a foolproof way to teach good judgment. Therefore, the decision-maker relies on as much study and rational analysis as is possible for the manager to develop.

Since decisions involve future action, decision-making becomes an important key to planning. This is where the element of risk comes into the picture. Facts as to the future are seldom known or are unobtainable for one reason or another, so the decision-maker is forced to decide in their absence. This explains, in part, why so much attention is being given currently to various forecasting techniques involving the use of higher mathematics and statistics. By using these predicting systems the leader can on the basis of the laws of probability discover the less risky opportunities for action. Probability determines the odds that a certain event will occur; therefore, it determines risk.

All decision-making is a balance of risk (probability), benefit (desirability), and cost. All three have to be judged carefully.

According to most authorities, the decision-making process consists of at least the four steps shown in:

Decision Making Steps

1. Define the problem.
2. Analyze the problem.
3. Develop alternatives.
4. Determine the best solution

Defining the decision problem may prove to be the most difficult step of all, because we are often guilty of treating symptoms rather than causes. In medicine, for example, fever is a symptom and infection is a cause. Ice packs to the fever (symptom) do not stop the infection (cause). Likewise, much managerial time is wasted solving the wrong problems. As mentioned earlier, you cannot solve a problem until you can find it.

Defining the problem also involves clarifying your own mind so that you can communicate to others the rules, policies, and customs to be observed in reaching a practical decision.

The leader analyzes the problem in order to determine what information is needed and what items are of strategic importance. The leader also needs to consider the time factor and the cost of gathering information. A manager has full discretion for decision-making only with the activities that are delegated to them.

The leader's creative thinking is of real importance in developing alternatives. Usually, the more alternatives the manager develops, the better the opportunity for making the right decision. It is here that modern electronic computers
make a contribution to leadership, because they help a decision-maker develop alternatives on which they normally would not have enough data to consider.

If the above steps are done carefully, the final step of determining the best alternative is easier. As mentioned previously, study and rational analysis aid the decider in making their choice. Criteria used include timing, cost and effort involved, risks taken, desirability of objectives, resources to be utilized, and complementary plans and procedures.

Remember that a decision is merely an indication of good intentions. The pay-off does not occur until a decision is converted into action. The successful leader is willing to shoulder this responsibility.

Positive and Negative Aspect of Leadership

With regard to the way that leaders deal with their employees, there are two very different approaches -- positive and negative leadership. The positive leader emphasizes how their personnel can gain rewards by working with the organization, but the negative leader emphasizes penalties. All leaders use both positive and negative incentives in any week, but the incentive which dominates sets a basic tone with employees.

Positive leadership emphasizes objectives which can be attained. It is the art of getting people to do their jobs willingly with interest and enthusiasm. The element of fear does not play a part in this type of leadership. It is well to remember, though, that positive leadership is not without discipline. To the contrary, there is much discipline, but it is self-discipline for the most part, not forced behavior.

Positive leaders select and train their people with care. The leader's self-confidence and self-control are reflected in their associates with the result that the leaders have confidence in them. The manager makes their people feel important because they are important to him or her. In the final analysis the people make the manager what they are: a success or a failure.

Negative leadership, on the other hand, is characterized by the ever present threat of force and the important role that fear plays in it. Bias, favoritism, and prejudice are part and parcel of negative leadership. Harsh disciplinary measures are the rule rather than the exception. In contrast to the viewpoint of the positive leader who feels that people will do a good job if opportunity and incentive are made available, the negative leader takes the position that people must be coerced in order to cooperate and to be productive. The negative leader's view is, "You do this or else."

Positive leadership gets plus values in an organization. When people are led, their energies are added to their leader's to accomplish the planned results. When people are pushed by a boss, they waste their energies in nervous worry and resistance to their orders. The positive leader exercises power through people instead of power over people.

It is a recognized fact that both positive and negative leadership do get results. The difference is that positive leadership builds employee drive and cooperation and develops better quality and quantity of work in the long run. Even the most competent manager will at times use negative leadership. Perfect employees and managers can never be achieved, but the historical trend is that managers need more and more positive leadership skills in order to be rated "satisfactory" and "successful" in modern business.

There is an old saying that applies to good leadership:

"PEOPLE, LIKE TACKS, ARE MOST USEFUL WHEN THEIR HEADS ARE POINTED IN THE RIGHT DIRECTION."

Why are Leaders Reluctant to Delegate?

Delegation is an important but difficult leadership activity. It is a necessity, however, if organization growth is to be realized. Business managers face a critical point in their careers when the specific demands of their jobs begin to extend beyond individual limits of time and energy. Their future success then will be measured largely in terms of work done through others. Delegation becomes a necessity.

It seems that any forward thinking business leader would be eager to delegate. However, there are many cases where a leader's reluctance to share authority has impeded both the managers personal progress and that of their company.

In some instances, this is not the leader's fault. It is the fault of the people that the manager leads. They resist the manager's efforts and are unwilling to assume the additional responsibilities that the leaders offer them. William Newman of Columbia University has made a study of why leaders are reluctant to delegate and why subordinates refuse to accept delegation.

Below are some of his findings.

1. Leaders think they are the only one who can do the job.
2. Lack of confidence in followers.
3. Doesn't want to take a chance on errors or loss of time.
4. Leader trained by a non-delegator.
5. Leader lacks ability to know what is going on.
6. Leader doesn't know how to delegate.
Why Subordinates Resist the Delegation of Work Authority

1. Easier to ask the boss.
2. Fear of criticism.
3. Lack of necessary information and resources.
5. May already be overloaded with work.
6. Positive incentives are inadequate.

Delegation, then, is a two-way proposition. For it to work, both the leader and followers must be willing and able to accept it for what it is -- a way of extending the creative thinking and decision-making responsibilities of leadership throughout the entire management team. All leaders recognize that delegation is the act which initiates management. If there is no delegation to others, there is no one to be managed.

When a leader delegates, they need to be sure that they carefully define duties so that no person's authority and responsibility overlap that of any other person. A case of overlapping duties is a sure way to cause clashes between the two persons whose jobs overlap. Each person is put in an untenable position.

The situation is about as difficult if the leader fails to delegate necessary duties to anyone, thus leaving what is called a gap for which no one is responsible. Since the "gapped" duty is necessary to the organization, failure to have it performed may frustrate and delay others whose work is related to it.

One important benefit of delegation by higher managers is that it helps a subordinate manager develop their own leadership in the following ways.

1. Gives them more direct control over their own unit.
2. By example encourages them to delegate to their own personnel.
3. Gives them more chance to "try their wings" for their own self-development.

A practical course of action for developing good leadership through delegation is indicated below:

Developing Leadership Through Delegation

1. Have an objective.
2. Develop proper personal attitude.
3. Study nature of own work and decide what to delegate.
4. Select individual best suited to do that work.
5. Assign the work -- delegate the authority.
6. Motivate the individual.
7. Follow up -- don't forget them.

Good leadership is easy to talk about, but the real question is, "Can it be applied in an actual business situation?" There is ample evidence to show that it does work in the supervisor's job or the president's job in all types of companies and situations. The following three historical examples of leadership by top caliber managers have been selected for description. These managers are William B. Givens, Jr., Charles P. McCormick, and Alfred P. Sloan, Jr. The publications in which they describe their ideas can often be found in public libraries.

The first idea is William B. Givens, Jr.'s concept of bottom-up management by which all employees' creativeness and ideas are used. Does Mr. Givens use positive leadership or negative leadership?

Bottom-up Management

William B. Givens, Jr., joined the American Brake Shoe Company in 1911. He became President in 1929. Under his leadership, American Brake Shoe grew to be an organization of 58 plants in the United States, Canada, and France in 1949. The goal of Givens's concept of bottom-up management is the release and stimulation of individual initiative. He defined bottom-up management as enlisting the support and creative contributions of supervisory and rank-and-file employees, so that a firmer sense of partnership may prevail. One of the major characteristics of bottom-up management is the decentralization or spreading of responsibility within the organization. This gives people all along the management and supervisory line freedom to think, to plan, to fight for their plans, to take calculated risks, and (most important of all, says Givens) freedom to fail. Above all, management should teach rather than tell. It should help each person in the organization to do their best work. As enterprise grows only as the men within it grow and leave their impression upon it.

The aim of the company is to build an organization which gives greater security to its employees and stockholders. This means making the company:

1. A better place to work.
2. A better neighbor in the community.
3. A better company to sell to.
4. A better company to buy from.
5. A better company to invest in.

To achieve this, the company must find for everything it does, a better way to accomplish the tasks that are set before them.

The only time a top-down push is needed is when bottom-up management fails in some area. The right people for the company are those we can like and trust. To attract the right
kind of people, a company must, by its actions, deserve them. The company must not remember only the person, but their entire family as well. Business can and must be a mission toward a better world in which to work and live.

The second idea is Charles P. McCormick's concept of the power of people.

**The Power of People**

Charles P. McCormick was President of The McCormick Company, a tea and spice firm in Baltimore, Maryland. McCormick says that there are five basic factors that employees seek from their jobs. They are:

1. Fair pay.
4. Recognition.
5. Participation.

The McCormick Company stresses participation and through it accomplishes the other four goals. It is sometimes called multiple management and is built on the firm concept of putting people first. The active management is carried on through groups of more than fifty people instead of a few executive officers. The people are all on five boards as follows:

1. The Factory Board.
2. The Sales Board.
3. The Institutional Sales Board.
4. The Junior Board.
5. The Senior Board of Directors.

These five boards meet regularly. McCormick believes that the advantages of these boards are:

- Brings new blood into the managerial structure.
- Stimulates new interest in every department of the company.
- Enables the company to train employees to study the business and take on responsibilities as rapidly as they are able.
- Produces more mature men and women.
- Provides for the inculcation of respect for the other fellow's opinion.
- Provides for the breaking down of the restricting barriers of departmental interest common to many businesses.

McCormick says that the everlasting purpose of management should be to build strong positive people. The purpose of the future will be to build strong positive people. The future will place the human factor on a par with profit, knowing that if its human organization is constructed of the right kind of material, the profit will take care of itself. The new type of manager in the future must be a student of people. The manager must understand government, politics, and human relations as thoroughly as they understand productive processes, profits, and sales methods. The manager must also be a diplomat because it will require real diplomacy to deal with the complex legal and human factors of the future. We must match our physical progress with equal human progress.

The future is bright -- for the power of people, good people, is atomic.

The last concept is expressed by the philosophy of Alfred P. Sloan, Jr., in his book, *Adventures of a White-collar Man*. Mr. Sloan served as the active leader of one of the world's largest companies, General Motors Corporation.

**Adventures of a White-Collar Man**

Alfred P. Sloan, Jr. started with Hyatt Roller Bearing Company. He later joined General Motors Corporation and became its Board Chairman.

Dictatorship, says Sloan, is the most effective way of administration, provided the dictator knows the complete answers to all questions. But he never does and never will, hence, dictatorship always fails. A corporation must be guided by an organization of intellects, and it requires the best of many minds, not just one mind. Sloan sums up his concept of management in this manner "after forty years of experience in American industry, I would say that my concept of management scheme of a great industrial organization, simply expressed, is to divide it into as many parts as consistently can be done, place in charge of each part the most capable executive that can be found, develop a system of coordination, so that each part may strengthen and support each of the other parts; thus not only welding all parts together in the common interests of a joint enterprise but more importantly developing ability and initiative through the instrumentality's of responsibility and ambition -- developing people and giving them an opportunity to exercise their talents, in their own interests as well as in that of the business.” Listed below are the principles under which Sloan operated General Motors Corporation.

- MANAGEMENT: The collective effort of intelligence, experience, and imagination.
- THE FACTS: A constant search for the truth.
- THE OPEN MIND: Policy based upon analysis without prejudice.
• COURAGE: The willingness to take a risk, recognizing the fact that leadership exacts a price.
• EQUITY: Respect for the rights of others.
• CONFIDENCE: The courage of one's convictions.
• LOYALTY: The willingness to make any sacrifice for the cause.
• PROGRESS: There must always be a better way.

These principles depend on the most important one of all—work.

Work is the catalyst that energizes all these ingredients, so that they may take their respective parts in promoting the common cause.

These leadership concepts embody practically all of the attitudes and elements of positive leadership, do they not? That they can be successfully applied in business is attested to by the contributions these men and their companies have made to the American way of life.

Conclusion

Remind yourself once again that you are not pulled to high levels of success. Rather, you are lifted there by those working beside and below you.

Achieving high-level success requires the support and the cooperation of others. And gaining this support and cooperation of others requires leadership ability. Success and the ability to lead others—that is, getting them to do things they wouldn't do if they were not led—go hand-in-hand.

The success-producing principles explained in this paper are valuable tools in helping you develop your leadership capacity. In closing, the following are four special leadership rules or principles that can cause others to accomplish the tasks for us in the executive suite, in the design office, in the field at the construction office, in social clubs, in the home, or anywhere we find people:

Four Leadership Rules or Principles

1. Trade minds with the people you want to influence. It's easy to get others to do what you want them to do if you'll see things through their eyes. Ask yourself this question before you act: "What would I think of this, if I exchanged places with the other person?"

2. Think: What is the human way to handle this? In everything you do, show that you put other people first. Just give other people the kind of treatment you would like to receive. You'll be rewarded.

3. Think progress, believe in progress, push for progress. Think improvement in everything you do. Think high standards in everything you do. Over a period of time subordinates tend to become carbon copies of their chief. Be sure the master copy is worth duplicating. Make this a personal resolution: "At home, at work, in community life, if it's progress I'm for it."

4. Take time out to confer with yourself and tap your supreme thinking power. Managed solitude pays off. Use it to release your creative power. Use it to find solutions to personal and business problems. So spend time alone every day just for thinking. Use the thinking technique all great leaders use. Confer with yourself.

Practicing these rules produces positive results. Putting them to use in everyday situations takes the mystery out of that gold-plated word, leadership.

To those who aspire to business statesmanship, the way is open. It involves an inquiring mind, a willingness to accept the responsibilities for leading others, and the diligent effort required for self-development. The sacrifices are great, but the opportunities are unlimited!!!

References


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Application of VE Techniques in Evaluating Contract Proposals

Kurt A. Gernerd

The current requirements for evaluating contract proposals submitted to compete for Government contracts is specified on Federal Acquisition Regulations. This study was performed to examine the application of VE techniques in evaluating contract proposals. A formal VE study was performed to determine the best qualified A/E firm for an Indefinite Quantity Contract for Value Engineering services.

The VE team/study demonstrated, using FAST diagram, evaluation criteria and weighted factors, decision analysis matrix, and creative brainstorming, that use of VE techniques is a logical, thorough, and highly effective approach in determining the best technically qualified proposal. The study was conducted on six A/E firm's contract proposals submitted for VE services. This study conforms with all FAR requirements and should be considered for formal incorporation into FAR as an approved method for ranking and evaluating contract proposals for all contract types prior to price negotiations.

Introduction

Recently the Department of the Interior announced in the Commerce Business Daily (CBD) a notice an Indefinite Quantity Contract for Value Engineering Architectural-Engineering Services. The intent of the contract is to provide value engineering A/E services for the Department and to augment the design and engineering staffs of those Bureaus and Offices within the Department of the Interior which have a need for value engineering services on an infrequent basis or cannot meet current VE requirements by using inhouse resources or existing contractors. A recurring need for value engineering services is known, however, the precise quantities or specific services can not be predetermined.

The goal of the Department of the Interior's value engineering program is to ensure that resources are dedicated to activities within the organization where the most value can be added or created. The value engineering approach is to focus on work functions and activities from a functional and quality perspective. Value Engineering/Analysis of DOI construction and non-construction program services and activities provides benefits in managing existing and reduced resources, administrating cost reduction and increasing productivity.

The scope of the indefinite quantity contract consists of general technical assistance in developing draft regulations and guidelines, written administrative procedures, and criteria for implementation, operation, and monitoring of value engineering program requirements in accordance with OMB Circular A-131, the Department of the Interior Departmental Manual -Value Engineering (1 DM 369), FAR Parts 48 and 52.248-1, and DIAR Part 1448. The contract also consists of work in the development and presentation of VE training courses, seminars or instruction, VE analysis studies of ongoing construction project designs for Bureaus and Offices of Interior; VE analysis studies of non-construction projects or procurement that may include, but not be limited to, administration, management, acquisition, and grant management programs, and cost estimating based on design and engineering review of project documents developed by Government personnel or by architectural-engineering firms under contract to the Government.

Under the contract the VE technical assistance services, VE training, and the VE project studies are executed by award of individual delivery/task orders. The Contracting Officer's Representative (COR) provides technical direction for each delivery/task order. The contract period of performance is for one year, with option year extensions not to exceed four additional years. Maximum annual award amount is $500,000.

Evaluation of Proposals

The VE study was undertaken to examine the application of Value Engineering techniques in evaluating contract proposals. As an alternative method to evaluating contract proposals in the traditional manner and still maintain and adhere to the A/E contract evaluation requirements specified in the FAR, this value engineering exercise was developed in careful adherence to the FAR, Part 36 and Subpart 36.6 for selection, evaluation and acquisition of A/E services. In essence the FAR requires agencies to evaluate potential contractors in terms of their: (1) Professional qualifications necessary for satisfactory performance of required services; (2) Specialized experience and technical competence in the type of work required; (3) Capacity to accomplish the work in the required time; and (4) Past performance on contracts with Government agencies and private industry in terms of cost.
Figure 1. DOI Value Engineering Services Contract, FAST Diagram

control, quality of work and compliance with performance schedules.

The Department of the Interior VE team was assembled to perform an evaluation of the contractor proposals using formal Value Engineering techniques and methodologies. This multi-Bureau team consisted of personnel who are highly experienced in applying both the FAR evaluation procedures and VE study techniques.

The Value Engineering study approach to the evaluation of contract proposals involved VE techniques as in any VE Job Plan. The use of VE to evaluate contract proposals proceeded according to the following sequence:

1. Develop a Functional Analysis System Technique (FAST) diagram of the contract evaluation and selection requirements.

2. Develop proposal evaluation criteria and assign weighted factors to each evaluation criteria using paired comparison analysis.

3. Evaluate and rank each proposal employing the weighted criteria and the decision analysis matrix.

4. Identify the highest ranking proposal as the most highly qualified proposal from a technical perspective. This proposal would then be recommended, through the acquisition process for contract award.

Figure 1 shows the Functional Analysis System Technique (FAST) diagram of functional relationships in evaluating the contract proposals. Functions are shown for each major step in the proposal evaluation process.

Criteria Weighting Process

Figure 2 shows criteria determined by the VE team to be representative elements of acceptable performance of the proposed contract requirements. Each criterion is reviewed to establish its weighted preference relative to contract performance requirements. The process consists of an orderly series of paired comparisons between a given criterion and each of the other criteria. Raw scores are totaled by adding all the individual comparison scores for each criterion. The raw score (weight) of each criterion reflects its relative importance in the evaluation process.

Description of Evaluation Criteria

Proposal evaluation criteria were developed and used by the VE team to evaluate the contract proposals. The development of the criteria by the VE team was a very important aspect of the VE study. The criteria are a direct extension of the contract statement of work and the FAR evaluation requirements, however, the ranking, or weighting, of the criteria proved to be a very vital and dynamic aspect of the VE study. The VE team had to come to consensus on not only the finite list of criteria but also on the relative weight of each criterion. Through the criteria selection and ranking process, the VE team more clearly understood the intended function of the indefinite quantity contract and more clearly understood and determined the relative importance of each contract requirement relative to each other. Ranking or weighting the evaluation criteria through functional analysis, conclusively established the relative importance of the VE services expected to be accomplished under this contract. In the same respect, ranking the criteria in this manner also provided clear guidance and better understanding during the evaluation of the qualifications, experience, and abilities of each A/E firms to fulfill all contract requirements.
The following is a brief description of the proposal evaluation criteria developed and used by the VE team to evaluate and rank contractor proposals:

A. Contractor Experience: This criterion encompasses experience in performing VE on projects related to construction of facilities. Factors considered are number and variety of projects on which VE studies were successfully completed. Of importance also is the similarity of projects studied likely to be encountered in DOI construction programs.

B. Performance History: This criterion recognizes the contractor's success in achieving acceptance of VE proposals and the ratio of savings achieved to the investment in performing the studies, i.e., the return on investment (ROI).

C. Estimating Capability: This criterion encompasses contractor capability to perform cost estimates to support the claimed savings of VE proposals. Factors such as accuracy, regionally specific data, automation of cost data base, and the speed of development are important to satisfying this criterion.

D. Non-Construction Experience: This criterion recognizes VE experience in projects, other than construction, which DOI Bureaus and Offices might need to be performed. Examples would be value analysis of proposed organizational changes, paperwork procedures, procurements or other administrative processes.

E. Training Experience: This criterion takes into account the contractor's ability to conduct VE training for DOI employees. Relevant factors are quality and experience of instructors, variety of courses, and the quality of instructional materials.

F. Resource Integration: This criterion encompasses the degree of control and ability the contractor has on resources needed to fulfill contract requirements. Examples are the degree that in-house resources are offered versus contracted with subcontracted resources. Resources include professional staff; support personnel, and hardware. Responsiveness to task orders, flexibility, and ability to mobilize or assemble teams is also considered.

G. Discipline/Diversity/CVS Staff: This criterion encompasses both the variety of skills needed to perform DOI VE work and the depth of staffing, especially in critical professional specialties. Both technical and VE skills are important to satisfy this criterion.

H. Experience with DOI: This criterion recognizes the potential for increased effectiveness of a contractor who is already accustomed to working on DOI projects.

Figure 2 shows the ranking of each of the above evaluation criteria.

Figure 3 Value Engineering Matrix shows the numerical rating process sheet for proposal ranking. Contract proposals are evaluated on the basis of their ability to perform the overall contractual requirements for each individual criterion. The VE team's numerical rating of a proposal for each criterion is multiplied by the respective criterion weight to give a partial weighted value. The row sum of each of these partial weighted values equals the total weighted value for the specific proposal. The highest total sum identifies the best technically qualified proposal.

Conclusions

Value Engineering, i.e. using the FAST diagram, creative brainstorming, decision analysis matrix techniques, and evaluation criteria and weighting factors, has been proved to be a viable method for evaluating contract proposals. Future incorporation of the VE approach into DOI and other Federal Agency standard procurement evaluation procedures should be considered.

The VE study demonstrated that use of VE techniques is a logical, thorough, and highly effective approach in determining the best technically qualified proposal.

Utilizing VE techniques and methodologies:

- Clarifies contract purposes and quantifies the relative importance of contract requirements. This is achieved by receiving input, in a team setting, from each involved agency during criteria development and proposal ranking.
- Quantifies the relative value of each proposal and produces a numerical rank for each proposal.
- Ensures that all parties to the contract receive their desired value from the proposed contract.
- Ensures that the best qualified contract candidate is identified.
- A collective understanding and consensus of how well each proposal meets the requirements of each individual evaluation criterion is determined by the evaluation team.

The process of developing and weighting evaluation criteria when performed by the technical evaluation team with end user input, fosters common understanding by all team members.
user input, fosters common understanding by all team members and an clearer understanding of the relative importance of each criterion. This knowledge in turn results in more effective and relevant proposal interviews by the technical evaluation team.

The FAST diagram, Criteria Weighting sheet, and Proposal Ranking matrix sheet provide a concise and informative record of the proposal evaluation process and results obtained.

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The Role of Value Management in Improving Australia's Economic Performance

John Bushell, AVS

This paper identifies the areas in which it is generally agreed Australia must significantly improve its economic performance, the benefits to be gained from the application of value management to economic target areas, and proposes a strategy to realise these benefits.

Introduction

The 1960's were the time of the "lucky country". Since the opening-up to competition of Australia's economy in the mid-1980's, the 1990's are the time where we have no option but to be the "competitive country". The imperative for Australia in this decade will be to optimise the use of all the resources available to it, both those it owns and those it borrows.

This paper will overview Australia's economic background and indicate the areas of opportunity for Australia to improve its economic performance. It will describe the existing use of value management and indicate how these two elements combine to generate future initiatives to maximise Australia's economic performance by the targeted use of value management.

Economic Background

First, a brief introduction to Australia's economy now. Australia's Gross Domestic Product (GDP) has been falling significantly over the last four decades as Graph 1 illustrates. It should be noted that this graph is presented with GDP averaged over the decade, not as a running average as these statistics are most commonly presented. This presentation highlights the gradual decline in GDP over the period. The projections shown are just that - projections of the graph on a purely geometric basis. They do, however, at the least sound a warning that sustainable GDP needs to be increased for reasons will become evident.

We are not alone, however, in that most economies reaching maturity experience a slowing of growth. Australia has by comparison with many of these countries, a very young population with a rate of increase of population of around 1.5% per annum. By contrast, most European economies have a population growth rate close to zero. In the Australian economy it is generally accepted that sustained GDP growth of around 3.5% per annum is needed to retain full employment (full employment in Australia is generally accepted as occurring when unemployment levels are at around 3-4%, of the workforce).

This is a far contrast from unemployment in excess of 11% reached in the last recession and the current level of unemployment of some 9.5%. It should also be remembered that during the "boom 80's" unemployment remained above 6% for the whole period with the exception of the bicentennial year of 1988. This fact might just inject some realism into the euphoria over Sydney winning the year 2000 Olympics. Certainly there will be economic benefits (as well as costs) but this single event will not make any significant contribution to GDP, nor solve the long term structural nature of unemployment.

Regrettably, even with the current economic growth of around 4 - 4.5%, it is anticipated by economists that unemployment will be around 7 - 8% at the end of the decade and probably even higher after the next cyclical recession due in the early years of the next millennium.

Ibis Research Services of Melbourne, however, presents a much more pessimistic outlook, with severe recession setting in about mid-1995 to mid-1997 and further major structural changes to our economy occurring in the ensuing years, culminating in a stronger economy and much changed social and political system at the end of the first decade of the next century.

Either way it would appear that high levels of unemployment may be with us for the next decade at least. Clearly, this level of unemployment represents a waste of our resources as well as a highly unsatisfactory situation.
socially. Unlike resources such as coal, timber, or minerals, which can be left untouched for millennia, once born, people simply cannot be left alone; they need food, clothing, housing, mental stimulation, etc.

A high level of unemployment brings with it, therefore, the "double negative" of a resource which consumes wealth but is not of itself economically productive. Wealth is diverted from the economy quite rightly to assist the unemployed at the same time reducing the capital for the productive sector of the economy. This is confirmed by the statistic that in the ten years from 1984-85 to 1994-95 budget outlays on Social Security and Welfare increased some 15%, well ahead of the second greatest increase; health, 5.5% of the 1994-95 Federal Budget or 34% the largest single element by economic type, is allocated to Personal Benefit Payments.

The loss of national income from high levels of unemployment is estimated to cost the nation $35 billion per year, well in excess of losses through other areas of economic inefficiency.

An indication of the social costs of unemployment is the fact that two thirds of the Australians convicted of homicides in 1991-1992 were unemployed.

A clear target, therefore, of increased domestic efficiency and international competitiveness must be to ensure that worthwhile work is available for those people needing to work. To this objective must be added the rider that inflation needs to be kept low to avoid eroding the economic gains achieved.

The second critical economic issue is the growing Federal Budget deficit, with incomes some 10% below outlays, and a deficit in relation to GDP of 2.5%. A budget deficit of 1% of GDP is the target for 1996-97 and this will mean an average reduction of expenditure in real terms of some $5 billion per year (5). Since State Governments derive most of their income from the Federal Budget, the key area for initiating a regime of improved outcomes from expenditure must be the Federal Budget.

Australia has, in common now with most English-speaking countries, particularly low levels of domestic savings. This situation leads to a strong propensity for both the public and private sectors to borrow from overseas sources.

This leads us to the third critical element. Australia has a foreign debt of $173 billion, (up from just $10 billion 12 years ago) and just under 40% of OUI annual GDP. This debt comprises both public and private sector liabilities. This level of overseas indebtedness leaves us prey to changes in the value of the Australian dollar against those currencies we are borrowing from. A concern which is currently emerging is the strong demand for capital around the world coupled with a dearth of surplus for lending by the traditional lenders, Germany and Japan. (Germany is diverting massive funds to the reconstruction of East Germany and Japan is recovering from massive losses sustained in the late 1980's.) All this points to an increase in the cost of global capital which is the last thing a heavily indebted Australia needs as it emerges from the recession with the requirement to borrow more capital to develop its economy.

Of course increasing domestic savings (as the Government's Superannuation Policy is intended to achieve) will significantly assist in the amount of capital available locally. However this will take many years to build up reserves large enough for Australia to be "self-funding".

Clearly, whatever happens, this debt will not vanish overnight and the only option we have at this stage is to ensure that all debt (whether public or private) is used in a way in which the outcome will maximise the benefit to the economy. This means a rigorous examination with the objective of prioritising projects and services that this valuable commodity of capital is to be spent on; the economic appraisal process. Additionally, it is necessary to ensure that those projects that proceed maximise their effectiveness and efficiency in contributing to the economy by the application of value management.

An important issue, and one that is frequently overlooked, is the need to ensure that the benefits derived from capital
expenditure have medium and long term benefits. In Australia, with nine governments all making expenditure decisions against a heavily politicised background, genuine long term benefits are infrequently achieved by public expenditure. An important function of value management then must be to extend the “focal length” of investment decisions of both government and private industry. This is particularly important in terms of those decisions related to environmental improvements where long term investment decisions must be taken against the dynamic of rising population and consumption.

A point that must be made is that high levels of borrowing are not necessarily a problem in a rapidly expanding economy, provided the money is put to efficient use in retaining and enhancing that expansion, but borrowing becomes a heavy burden when recession hits, especially so when negative growth occurs whilst the obligation to repay the debt remains.

We have, therefore, three major forces driving the Australian economy at present:

- GDP falling consistently over the long term with resulting high levels of structural unemployment;

- Greater competition internationally for capital placing increased pressure on Federal and State governments both to balance their budgets and to ensure that expected outcomes are achieved as a result of the expenditure they control;

- The need to:
  - reduce our exposure to foreign debt;
  - maximise the benefits obtained from the foreign debt that we already have;
  - ensure continuing and expanding exports in order to reimburse existing foreign debt.

These three forces result in the need to maximise domestic efficiency and international competitiveness as a matter of urgency.

In overall terms Australia’s pressing need is to allocate and utilise all its resources to their maximum effectiveness and efficiency.

Existing use of Value Management

First lets define what we mean by value management:

A structured and analytical process which seeks to achieve value for money by providing all the necessary functions at the lowest total cost consistent with required levels of quality and performance.

Value management is applied to both products (projects) and services (programmes) and therefore has a very wide scope of operation.

Value management has proven successful in the most competitive sectors of industry, notably in design and manufacture of motor vehicles and aircraft and also electrical and electronic goods and its use is well established in these sectors.

In public works, value management has a long history of delivering improved services to the community at lower capital and operating costs. It has been a requirement of US Congress for many years that all projects exceeding $5 million in capital cost and requiring its approval be subject to a value management study.

The NSW Premier’s Department has since 1990 required that all publicly funded works exceeding $5 million in capital cost be subject to a value management study. Capital cost savings of $150 million were identified in the 18 month period February 1992 - August 1993 (8). These savings have permitted other projects to proceed which would have been delayed, or in some cases may not have proceeded at all.

In electricity generation, both Victoria and South-East Queensland’s generating authorities have achieved considerable capital and operating cost savings through the use of value management.

Whilst, as we have seen from the economic overview, capital cost savings on projects are critical and will tend to become more so in future, there are qualitative benefits to be obtained from value management which certainly equal, if not exceed the capital cost savings in their contribution to
the economy and the community. These qualitative benefits include:

- involvement of all the project stakeholders on agreeing the project objectives and the scope and details of the project collectively rather than running separate agendas;
- identification of the functions that must be performed by the project or program;
- greater user satisfaction with a project or product with improved performance suited to their needs;
- ensuring that users needs rather than product or service providers agendas are met
- ensuring that benefits to the economy as a whole are placed before those of sectional interest groups when allocating and utilising scarce resources
- ensuring that quality appropriate to the function is provided;
- ensuring that available project or program options are compared on the basis of their ability to meet functional requirements;
- development of a product or process that may not have been developed without the synergy of value management - achieving a breakthrough
- reducing the time necessary to implement the project; improving safety of the project in use
- improved maintenance procedures with resulting cost savings, and
- operating cost savings.

The need to improve our international competitiveness has led to the adoption of "benchmarking" our performance against those of other countries when performing comparable services. Whilst in many case this will be a useful guide, I would suggest that there may be many variables that could limit the effectiveness of using a foreign benchmark for cost and performance targets. Amongst these may be cultural differences, differences in economies of scale, historical factors and existing constraints in even the most apparently efficient systems.

I suggest that the concept of function, cost, and worth, so well known to value management, form a more sound basis for establishing a "benchmark" cost for performing a particular function. If we establish our benchmarks using value management, who knows, we could well be leading the world before long, not following it!

If we establish our benchmarks using value management, who knows, we could well be leading the world before long, not following it!

The cost of running a value management study and implementing the results varies widely but there is a considerable experience over the nearly 50 years since its early development in the USA. Costs in relation to the capital cost benefits achieved are about 1:30 at the lower level of return, an average level is around 1:100. Cost / benefit ratios exceeding this level are not uncommon, particularly in the area of manufacturing in which repetitive production significantly increases the financial benefits to be achieved from the application of value management. These measurements of benefit are on the capital cost only, and do not account for qualitative benefits achieved.

Clearly then, value management is a self-funding process.

Future Initiatives

Actions to create a Value Management Initiative to improve the future for Australians can be divided into two sections: government and private sectors.

In the government sector, the Federal Government budget is an obvious target for savings since it is the largest single outlay, comprises 26% of GDP, and is the source of the majority of the individual States and Territories budgets. The 1994-95 Federal Budget is $120 billion with an
anticipated revenue of $108 billion, leaving an imbalance of $11.7 billion or 9.7% of the budget.

Review of the budget shows that some $42 billion is Personal Benefit Payments; these can be expected to reduce if the economy operates more efficiently and more people are in work. There is, however, no reason why value management should not be applied to these payments with the objective of improving the outcome for both the recipients and the economy. Some $70 billion is planned to be expended in goods, services and grants, all of which will benefit from the scrutiny of value management.

It is not difficult to see that if a very modest 5% saving (a figure below the average savings achieved in the US experience, Table 1) were made across these two major budget expenditures, a saving of some $5 billion could be expected. In theory, therefore, it is conceivable that application of value management could, on its own, achieve the $5 billion per annum in real terms needed to achieve the Government’s target of a budget deficit of 1% of GDP by 1996-1997. Given the numerous uncertainties surrounding the achievement of this target (not the least of which is the estimated increase in revenue of 5.5% and 5.6% in 1994-95 and 1995-96 respectively), targeted application of the Value Management Initiative would at the very least take us closer to the goal whilst paying for itself.

Australia is far more reliant on overseas trade for contribution to its GDP than many of its competitors. Australia, with its small economy, relies on overseas trade for some 39% of it GDP, whereas the USA with its large, highly diversified economy, relies on overseas trade for 21% of its GDP. Our debts to foreign nations are some 40% of our GDP and some 15% of income we earn overseas is used to service this debt.

We have, however, an economy which is complementary to the economies in our region, the majority of which are growing at around 10% per annum in contrast to our traditional European and American markets where growth of about 3% per annum is the order.

Clearly then, just to service our current debt, it is essential that we maximise our efforts to penetrate these rapidly growing economies where the superior growth will deliver higher dividends in the long term. The target here is to convert the high percentage of primary products we send to the Asian economies into a higher value products, such as refined minerals or prepared food products. In most instances this transformation will require an understanding of the culture to which we propose to sell and the synthesis of customer needs and Australia’s commodities and knowledge to produce products and services acceptable in these markets. Value management creates the “neutral environment” in which these products and services can be developed to the mutual benefit of the buyer and seller. Further areas of export are those areas in which Australia has a comparative advantage, and this includes specialised areas of high-tech manufacture and the export of educational, legal and financial services.

The initiative in relation to improving our trading position needs to be taken by the private sector with the encouragement of the Department of Foreign Affairs and Trade.

The matching of Australia’s economic needs and the proven benefits of the application of value management give rise to a series of target areas where consistent application of value management has the ability to significantly improve Australia’s economic performance. These areas are:

- All areas financed by foreign debt, whether public or private;
- All areas in which the utilisation of any resource judged to be scarce now or in the near future is involved, eg. capital, water, certain types of environment;
- All areas in which the Government’s ongoing micro-economic reform of the economy is proceeding, eg. transport industries, government services;
- All areas subject to the Competition Commission (Hilmer Report). In this area, value management will be of particular benefit in determining what services are needed and what the value of provision of these services is to the economy; particularly areas of service traditionally delivered by government enterprises;
- All areas in which Australia has a comparative
advantage; eg. agrifoods, certain high value-added manufactures, export of legal and educational services. This has the ability to significantly increase the value of these services in the world marketplace (and hence the price they can command) as well as broadening the market in these important foreign currency earning endeavours;

- All areas of long-term expenditure on programmes or projects particularly those impacting on the environment and the use of scarce resources;

- All areas in which decisions made now will lock us into long-term operating and maintenance expenditure eg; hospitals, sewage treatment systems;

- All areas of product or service provision in which a wide range of stakeholders are involved in delivery and use of the product or service;

- Areas in which commitment by a very diverse group is necessary to ensure a successful outcome of a program or project (eg; commercial projects involving overseas partners, overseas aid projects);

- All areas where multidisciplinary teams are involved in the delivery process;

If the benefits of value management are to be achieved it is essential that the requirement and support for value management studies to be performed on programmes and projects comes from the top - the Prime Minister. It is also vital that, having set the criteria, all programs and projects complying with it are subject to scrutiny, and that exclusions are not permitted on the grounds of political expediency. The NSW Government has conformed with the first requirement; the requirement for value management studies came from the State Premiers office. The NSW State Government has not always enforced the second requirement with the result that a number of major projects in the state have proceeded without a value management study (eg; the Glebe Island Bridge, the City West Urban Strategy, and the related proposals to close the commercial Pyrmont wharves, the highly controversial siting of the proposed Casino).

The Chinese maintain that "the longest journey begins with the first step". The need now is to select a small number of programmes across the major budget disciplines, subject them to value management studies, review the results, and ensure that they are implemented. Experience wherever value management has been applied systematically will prove the benefit of the results to the agencies and the individuals involved. Broader application of value management across total programs should follow this initial gain in confidence in the use of the technique and its outcomes.

**Conclusion**

The need to continue building on the Government’s micro-economic reform initiative is never more important than now with continuing high unemployment, MAUI historically high Federal Budget deficit, growing overseas debt, and indications that the global cost of capital is likely to increase markedly in the near future at a time when Australia needs to make up for investment foregone during the last recession. An overall target must be to maximise the benefits gains from the allocation and use of all our resources. Value management offers a proven method of examining needs on a functional basis and of then ensuring that those needs are reliably met by the optimum utilisation of resources. Targeted application of the Value Management Initiative has the ability to ensure that Australia maximises its economic performance in areas directly related to improving the current macro-economic conditions whilst ensuring the economy expands at maximum efficiency. The costs of applying value management are infinitesimal when compared with the quantitative and qualitative benefits capable of being achieved from implementation of study results.

The principal target areas are:

- All areas of Federal and State Government expenditure.

- All areas of our economy which contribute to earning export income.

A start needs to be made progressively in all areas by
selecting projects and programmes for study with endorsement at senior level to ensure the results are implemented and the required outcomes achieved. Implementation of such a value management program needs to be initiated by the Prime Minister in order to have the authority necessary to ensure that the considerable potential economic benefits are realised.

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John Bushell, MIVMA [PRACT], AVS, MSAVE, ACIOB
is the director of John Bushell Value Management Pty. Ltd., Sydney, NSW. He has over 30 years experience in the construction industry in Australia and Europe.
Graph 1 - Australian Economic Indicators - Australian Bureau of Statistics
Cost Charting Technique

Arthur E. Mudge, CVS

The success of an individual or organization is not a given fact, rather it is the result of dedicated efforts. Success depends on the constant application of experience, knowledge and the use of previous facts. It has been said, "If no use is made of the facts of the past, we must always remain in the infancy of knowledge."

Facts, the specifics of history, are constantly developing and being added to the base of knowledge. As facts are developing, like so many other things in our lives, they can and do have a deciding impact on the future. The impact of the facts on the individual or organization, whether positive or negative, depends on the attitude of those regarding the encountered facts and to what use they may be put.

When the individual or organization’s attitude is positive, knowledge of the encountered facts, through diligent search, is used primarily as a guideline and provides directions to an ever changing and successful future. However, when the attitude is negative, the facts become roadblocks to the mind and thereby hinder or totally stop change and progress.

Individuals or organizations, planning for a successful future, must provide their products or services so that they meet a number of the basic requirements of the ultimate user. These basic requirements are performance, quality, timeliness and competitive cost. Of these requirements, it has been found that the development of the competitive cost and related selling price are often the most difficult to determine and establish. Today, however, this task of establishing competitive costs and cost targets can often be made easier through the organization of the historical and present facts and costs.

The establishment of realistic and competitive costs and cost targets, for new or existing products or services, is essential to the ultimate marketability and success of any product or service. For it is a known fact that no matter how good a product or service is, if it does not have a competitive cost and selling price, it is extremely difficult, if not impossible, to develop a market in which to sell it. The establishment of the facts, in a meaningful way, requires the development and use of a reliable systematic approach.

As we look around, we find that there is presently in use a method of recording, for visual analysis, the facts in a systematic and meaningful way. That systematic method of visually organizing the facts can be found in every hospital. This is the organization of the facts of an individual's pulse rate and temperature being recorded and updated on a graphic chart. Such charts give an instant picture of the facts and their variations. Similarly, cost charts will when properly developed, show the notable deviations, significant variations and specific trends. Such charts can be developed for a complete product line, component parts, similar components of various products, methods of manufacture or services within an organization. Such charts can also be developed to compare competitor's items which are similar to those of the organization's products or services. In this situation, the chart should use the actual selling prices.

With the development of such charts, comparing either internal and/or with external facts, visible comparisons and analysis can readily be made. Such comparison and analysis permits the decision makers to evaluate the facts on the chart(s) and make meaningful decisions and plans for the future. When using the charting method to be shown in this paper for present or future products or services, the chart will show if the costs are above, below or within a realistic competitive range. These charts will also assist in establishing meaningful cost targets, for both old and new products or services, within or below the competitive range.

The "Cost Charting Technique" applies the historical and/or present costs in such a visible manner that they enhance the user's knowledge. Through such knowledge the future can be planned with firmer convictions. With the
convictions that the problems and errors of the past will not be repeated in the present and that the positive results and actions of the past will be built on and repeated.

Cost Charting Technique

A wise and knowing individual of the past said, "He who would rule his destiny must first analyze the facts of the past." This, from experience, has been found to indeed be true, but before the facts can be analyzed in a meaningful way they must be collected and arranged in an orderly manner. The Cost Charting Technique is one way of arranging the cost facts in a simple, yet in a concise and visible graphic display.

Cost charting in general is not new. The charting of costs has been done, in many different forums, for many years. However, the Cost Charting Technique adds a significant new element to the charting process. This new element is the incorporation of the Value Engineering Functional Approach, i.e., the definition of functions in two words, to the charting process and thereby making it more meaningful and accurate for use in today's business environment.

The Cost Charting Technique uses the chart form shown in FIGURE 1. This charting technique compares the Basic Function's Units of Measure to the actual costs of the items under study. The Function's "Units of Measure" are measured on the horizontal axis and the elements of cost measured on the vertical axis. In addition to the plotting of the actual costs, the average cost and the competitive range are calculated; once these are established, they are also plotted on the chart, (see Figure 2, the solid line shows the average cost, the dotted lines show the competitive range).

In order to realize the greatest benefits, the Cost Charting Technique must use the actual facts and costs with care. The facts, which are the tools of this technique, are "basic costs", "functional definition", "product knowledge", "simple mathematics" and a "charting ability".

The first step is to determine what group of items is to be analyzed and then secure the facts and costs regarding the group of items. The facts should include the competitiveness of the group of items in the market place and any problems associated with each of the items in the group. If the group of items to be analyzed is from within the organization, actual costs, i.e. direct material and direct labor, should be used for the comparison. If the organization's and competitor's items are to be compared, it is recommended that actual selling prices be used.

The second step is to determine the Basic Function, i.e., an action verb and measurable noun definition, of the items to be analyzed. This is the point at which the analyst's knowledge of the product is essential. The measurable function(s) must be that which the item performs to accomplish the ultimate user's need. This definition of the function is necessary so that the previously determined costs can be related to the Basic Function's Units of Measure. For instance, if the defined function was "Conduct Current" its Units of Measure would be in either "Volts" or "Amperes". In other cases, the Units of Measure could be "gallons per
minute (GPM), foot pounds of torque (Ft.Lbs) or pounds per square inch (P/sq.in.), etc. At other times, based on complexity, it may have to be a composite of functions for clarity and thereby the units of measure become a factor, a combination of the units of measure. Such composites could be "gallons per minute times pressure", or "pounds of force times distance", etc. The only time that specific units of measure are not used is when manufacturing methods are being analyzed. Such a case might be when castings are being compared. In the instance of comparing castings might be a combination of casting weight and the complexity of the casting, i.e., simple, intermediate or complex-never based on weight alone. However, when comparing manufacturing operations "minutes per operation" could be the Unit of Measure. The proper definition of the function(s) and its Units of Measure is the most significant element of this Cost Charting Technique.

The third step is to determine the average unit cost. This is done by determining the average cost and average Units of Measure of all of the items being compared. This point is then plotted on the cost chart and a solid line drawn from the lowest cost point on the vertical axis through the average cost/unit of measure point. It should be noted that when a scatter pattern is formed and no clear line is formed, multiple average costs and units of measure most likely must be used. In these occasions, two or more average costs/units of measure lines will have to be developed on the same graph. These multiple lines can be either parallel or intersecting. As the data points are being plotted, these conditions should be watched for as they indicate significant facts. Parallel lines on the graph indicate that there are distinct cost-price breaks in the range of items being analyzed. Intersecting lines indicate that there is a distinct change in the cost/unit of measure-usually caused by a difference in the method of accomplishing the function of the items being analyzed.

The fourth step is for the decision makers to determine what is a realistic competitive, range such as 5%, 7% or possibly 10% above and below the average cost/unit of measure. Once this has been determined, these amounts can be calculated and plotted with dotted lines above and/or below the solid line.

The fifth step is to plot each of the units in the group on the Cost Chart. When this is being done, each plotted point should be marked in such a way that the unit it represents is identified.

After the individual items have been plotted and identified, the Cost Chart can be put to use. First, it can be analyzed to determine if any of the unit(s) data points in the group appear above or below the acceptable competitive range. If any are above the upper dotted line, action is indicated to correct the high deviation and bring the unit(s) within the competitive range. If several data points are below the lower dotted line, an analysis can be undertaken to determine why they are above and a project or projects initiated to correct the deviation. If these actions bring the unit(s) to the lower dotted line, an analysis can be undertaken to determine how this good deviation was accomplished. From this latter analysis, it may be foreseeable to determine what actions can be taken to lower the cost of those above the dotted line and/or change all of the units to match those below the lower dotted line after this lowers the whole plot of the chart. Secondly, if after such charting, a new item having the same defined function is to be added to the product line, it is only necessary to note its Units of Measure capacity and move up to the average cost line to determine its cost target/objective. In each instance the decision maker is using the facts of the past to direct the destiny of the future.
Case History #1: Gear Drives

During a product review meeting between the General Manager, Controller and Marketing Manager at a plant located in Colorado, it was noted that the 60" Gear Drive unit was non-profitable on every sale. He also noted that it appeared to be the only unit in the product line that was not showing a profit. Based on this information, the General Manager decided to have a Value Engineering Study conducted on the 60"/33,000 foot pound Gear Drive. The General Manager was also advised that the Marketing Department had received a request for a quotation for a 60,000 foot pound unit, a size that was not presently designed or sold.

The Value Engineering Team, in order to secure an understanding of the relationship between this non-profitable unit and the other profitable units in the product line, decided to employ the Cost Charting Technique. The team knew that they had to first determine and define the Basic Function of the Gear Drive units. After some discussion, they determined that the Basic Function of these Gear Drive units was to "Transmit Torque" and the unit of measure for this function is "Foot Pounds" (ft.lbs.).

Next they went to the Engineering Department to confirm their definition of the basic function and secured both the operating data and drawings for each of the Gear Drive units in the product group produced and sold by the plant. Based on the team's analysis of the visual facts shown on the cost chart, the team decided to discuss a number of the significant points with the General Manager. First, they pointed out that only the 72" unit was far above the competitive cost range. They also pointed out that all of the other units were within or below the competitive cost range. They also pointed out that all of the other units were within or below the competitive cost range.

Further, they noted that the 60" unit was definitely within the competitive range. Lastly, knowing about the request for a quotation, they noted that the cost target for a 60,000 foot pound unit should be approximately $5,700.

Having this information, the General Manager first went to the Marketing Manager and asked to explain why the 60" unit was losing money on each unit sold. At that point, the Marketing Manager said that he had informed the General Manager that Marketing had been selling the 60" unit as a loss leader to stimulate the sale of the complete processing equipment systems.

Next, the General Manager went to the Engineering Manager and told him that his cost target for the 60,000 foot pound unit was $5,700. The Engineering Manager told the General Manager that based on preliminary designs requested by Marketing for that size unit, the estimated cost would be at least double that amount.
Based on this, it was decided that Engineering would have to investigate and find a lower cost design or have Marketing submit a NO-Bid. After some deep investigation and different design approaches, a design was received that met all of the performance criteria and yet met the cost target. Over the following years, this new design concept was incorporated throughout the product line. As a result of this a new cost chart had to be developed for the Gear Drive product line. In addition cost charts were developed for every line of product produced by this plant so that similar comparisons could be conducted.

Case History #2: Products in a Competitive Market

This is a case were one of this particular plant’s products was a complete line of industrial ovens. This product line ranged from a small laboratory size up to large production size ovens.

The plant’s Marketing Manager, while analyzing this product lines sales, noted two significant points regarding this line of products. First they had only a very small percentage of the overall oven market. Second most of the quotations being submitted by his marketing personnel were for larger size ovens. Based on these two facts, he decided to develop a Cost Chart for each of his competitors and one for his own product line, based on their selling prices. In order to accomplish this he had his sales personnel secure, wherever possible, the selling prices of his competitors’ units.

Once the selling prices of his competitors’ units had been secured and individually plotted, he made a composite Cost Chart. This composite chart showed him some very distinctive facts. First, his larger ovens were well above all of his competitors’ competitive selling price ranges. Second, his smaller ovens were well below his competitors’ competitive selling price ranges.

Based on this knowledge, he took two significant steps. First, for the immediate future he had his sales personnel put more effort into selling primarily the smaller ovens in their present line. Second, he discussed his cost charts with both the Managing Director, Manager of Engineering and Manager of Manufacturing. From this meeting it was decided that Engineering and Manufacturing would work together to analyze the present design of the larger ovens to determine where changes could be made by both engineering and manufacturing in order to reduce the present cost and thereby the selling price target. The selling price target was, of course, based on the Marketing Manager’s composite Cost Chart.

This Cost Charting Technique is another tool which every organization can put into it’s system to be used as needed. A technique which will assist the organization’s decision makers to develop more accurate and meaningful decisions regarding costs and cost effects. These costs and cost targets are based on viable facts rather than educated guesses.

Art Mudge, CVS, is a Fellow of SAVE and his firm, Value Associates, Inc. is located in Bethel Park, Pennsylvania.
This business phenomenon I’ve witnessed during my career is aptly named—"Promoted Into Danger." It is analogous to the famous PETER PRINCIPLE, which states that—"Every individual in an organization rises to his/her level of incompetency." Essentially this says that an individual continues to get promotions based on job performance until she rises to a job that is more demanding than she can handle effectively—and thus becomes incompetent at that level. Then, due to job performance or a downturn in the economy, becomes corn fodder for management’s scythe.

Let’s examine the scenario. People get promoted largely because they are viewed as good performers and have potential for more demanding assignments. Promotions are regularly viewed as good happenings, not bad; a time to look ahead with optimism. However, two situations occur that often put people in jeopardy:

A business downturn occurs and the job to which one had been promoted is combined with another or eliminated entirely. The individual’s job performance is not pleasing to his new supervisor. Result in both instances is down to the following explanation:

The person is let go, terminated; axed or rifed; the language being dependent upon management’s largesse as they see it. An observer watching an individual’s quick rise and fall would express bewilderment and validly ask—"Isn’t there a variety of other jobs that the displaced person could do?" Answer: "certainly there is." "Didn’t the individual perform well on a myriad of other earlier jobs?" Yes, exemplary in fact, effecting the promotion. "Isn’t it true that if the unfortunate individual had remained in one of those earlier positions and hadn’t elected to be promoted, in concert with the company’s wishes, one would possibly still be working?" "Yes." "Why then is X being terminated?" Management’s apparent reasons for going with this route often boil—it would be disruptive to let the individual "bump" down into another job; it would cause a domino effect of bumping all down the line. In the utilitarian vein of thinking, it is better that one person is greatly unhappy than for many people to be slightly unhappy. The greatest good, or the least pain, for the many. I’m thinking they are taking old Jeremy Bentham out of context. It seems that one is always strong enough to bear up under another’s grief.

Projecting a lofty judgment, they might surmise that the individual would be disappointed at returning to a lower job. Better he should look elsewhere than be a morale thorn in the workplace. Don’t you think it’s taking a lot for granted without asking and offering a choice?

To paraphrase the novelist Wolfe —"You can’t go home again." The greatest good (or least pain) derived from not unseating several people in a regression (bumping) action is more than offset by the introduction into the workplace of a "stay safe where you are attitude." Who among us, safe in our havens, would dare to venture out and up if the fear of loss is seen as greater than the promise of gain? And too, isn’t it wrong to punish, by severing an individual who has served so well in previous jobs suited to his/her capabilities? After all, was not that individual encouraged to grow and prosper?

I would favor encouragement for promotion by assuring to some degree the consideration of a safety valve fallback position if things didn’t pan out at a higher, more demanding level—kind of a trial period.

With a little more imagination and caring, management could be seen as having a heart.
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Compiled by Jim Heinrich, VMP

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36th International Congress
SAVE 1996
Conference

Datesaver

June 9-12
The Palmer House Hilton
Chicago, Illinois
WELCOME

It is my pleasure to invite you to participate in the 36th International Conference of the Society of American Value Engineers. This year's conference will be held June 9-12, 1996, at the Palmer House Hilton, Chicago.

The following pages highlight the 1996 educational program. As a conference attendee, you will be presented with methods and strategies for competing in today's market through general sessions, breakout sessions, forums, the exhibit area and networking. You will learn how other organizations successfully implemented value programs and about the benefits they achieved through these programs.

For those interested in SAVE's certification program, there will be Module I and Module II workshops held in conjunction with the conference (additional fee required). In addition to an exceptional technical program and many networking opportunities, you should plan on taking time to visit the many exciting attractions Chicago has to offer: Navy Pier (50 acres of lakeshore parks, gardens, shops and restaurants), Art Institute of Chicago, John G. Shedd Aquarium (the world's largest indoor aquarium), Lake Michigan cruises (including architectural and historical tours, not to mention breathtaking views of the skyline), museums, shopping and fine dining to name a few! And, spring is considered to be the best time of year to visit Chicago.

This is an opportunity of which all value practitioners should take advantage! I hope to see you in Chicago.

Sincerely,

Ginger Adams, CVS
SAVE President

PROGRAM TOPICS

EDUCATION AND BEHAVIOR
- Use It or Lose It
- Value Analysis as a Collaborative Process
- Understanding the Value of Reusing Existing Buildings: The Front Line of Sustainable Building Practices
- Methodology for Rating an Organization's Environmental Risks and Management Response Systems
- Truncated Training for Value Management Team Leaders: A 10-Week Program or a One-Day Seminar?
- Bioremediation Gains Credibility
- Basic Orientation
- Total Quality Management (TQM): Another Viewpoint
- Keeping Your Value Management Program Alive and Focused After the Hired Gun Departs
- Value Engineering in the College Curriculum
- FAST or Not So FAST

CONSTRUCTION
- Decision Matrix Analysis: An Effective Tool for Functional Evaluation of Intricate Cases in Construction Projects
- High-Tech Value: Value Management for Science Facility Design
- Probability, Risk and Value Engineering in Construction
- Value Analysis in Dispute Avoidance and Resolution
- Comparison of a U.K. and U.S. Prison: Starling Results
- Value Management in Construction: A Survey of Clients' Attitudes in Hong Kong
- Total Quality Management (TQM): Basic Orientation
- Truncated Training for Value Methodology for Rating an Understanding the Value of Reusing Value Analysis as a Collaborative Process Use It or Lose It

TECHNIQUES
- Life-Cycle Cost Analysis on the Fly: Computer Templates for Life-Cycle Cost Analysis
- Being Creative in Value Engineering Today
- The Many Flavors of Value and the Various Ways to Achieve It
- Determining the Effectiveness of a Value Engineering Program
- Synergy Between Value Engineering and Risk Management
- Value Engineering Studies Implementation Through Multiple-Criteria, Decision-Making Techniques
- DFMA Productivity Evaluation Useful to Value Engineering Activities
- Time-Period Speculation Method in Value Engineering Activities
- Why Value Engineering Fails and What to do About It
- Application of Value Engineering in Non-manufacturing Areas
- Latest Strategies to Enhance the Environmental Value of Wastewater Treatment Plants

GOVERNMENT
- Product FAST Diagram: A New Tool Supporting Function Analysis
- Implementation of Value Engineering at Metropolitan Water District of Southern California

INDUSTRY
- Reclamation of Aviation Parts Through Value Engineering
- Particle Analysis
- Optimizing Suppliers' Input in Value Management Projects
- Key Factors in Starting and Maintaining a VA/VE Continuous Improvement Program

SPECIAL SESSIONS

INTRODUCTION TO VALUE ENGINEERING: THE PROCESS AND ITS VARIED APPLICATIONS
This session is designed for people new to value engineering or first-time conference attendees to provide them with a basic understanding of the value techniques and how they are currently being applied.

PRACTITIONERS ROUNDTABLE
Keeping with this year's conference theme and focus, SAVE will offer an environmental roundtable which will feature speakers and specialists who have applied Value Engineering tools in the environmental marketplace. A broad spectrum of environmental projects and applications will be presented. VE application topics will include NEPA (National Environmental Policy Act) Streamlining; RCRA (Resource Conservation Recovery Act); Operational Sampling, Monitoring, and Analysis; Superfund Site Clean Up; Water Quality & Waste Water Treatment; Pollution Prevention; Solid Waste Management. Additional fee required.

MODULE I (BASIC WORKSHOP)
Subject matter includes:
- History, definitions and job plans;
- Function, FAST and function costs;
- Creativity;
- People-oriented topics;
- Cost; and
- Evaluation and implementation. Additional fee required.

MODULE II (ADVANCED CERTIFICATION SEMINAR)
Module I Prerequisite
Subject matter covers:
- Overview and administration,
- Project and team structure,
- Job plans,
- Function analysis,
- Creativity,
- Financial evaluation,
- Interpersonal skills, and
- Value management. Additional fee required.
CONFERENCE
REGISTRATION FORM

REGISTRATION
Full conference registration includes admission to all general sessions, exhibits, group meal functions, awards ceremony, reception and conference educational materials. An additional fee is required for the Practitioners Roundtable, Module I and Module II Workshops.

CANCELLATION POLICY
Notification of cancellation must be submitted in writing to SAVE Headquarters. Cancellations received by Friday, May 17, 1996, will be subject to a $50 cancellation charge. No refunds will be given after May 17, 1996. Substitutions are allowed at any time but must be submitted in writing and must be of the same membership status.

PROCESSING OF REGISTRATIONS
Conference registrations will only be processed with a check/money order or credit card number. No faxed registrations will be processed unless credit card information (name on card, account number, expiration date) is included.

HOUSING INFORMATION
SAVE negotiated with the Palmer House Hilton to offer the special rate of $125 single/double occupancy in the main building or $145 single/double occupancy in the towers per night. All rates are subject to state and city taxes. A limited number of rooms are available at the Palmer House Hilton at the government rate (ID required at check-in). This rate is available for reservations made prior to May 7, 1996. Please call 800/HILTONS to make your reservations, and mention you are a SAVE attendee to receive the special rate.

AIR TRAVEL DISCOUNTS
Airline reservations can be made through Bannockburn Travel, the preferred agency for SAVE. Registrants will qualify for a discount on American Airlines. Call Bannockburn Travel at 800/557-9167 and ask for the group services department.

QUESTIONS
If you have any questions regarding the program or registration, please call SAVE Headquarters at 708/480-1730 or 708/480-6345, and ask for Melanie Epel or Paulette Anderson, or fax 708/480-9282.

SPECIAL ASSISTANCE
If you require special assistance, please attach your requirements to your registration form.

COMPLETE AND RETURN FORM TO
SAVE 36th International Conference
60 Revere Dr., Suite 500
Northbrook, IL 60062
Tel: 708/480-1730
Fax: 708/480-9282
Note: Effective Jan. 20, 1996, SAVE’s area code will be 847.

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Please Print or Type.
Complete a separate form for EACH attendee.

Maximum of 23 characters allowed for name, title and company name. (Important: Registrations will not be accepted without a full name. For example, the conference staff cannot process first names such as L. or CR.)

First Name, Last Name
Nickname (As you wish it to appear on your badge.)
Title
Company Name

Address

City/State/ZIP Country

Phone Fax

Please Answer
Is this your first conference? □ Yes □ No
Are you a new member (as of 7/95)? □ Yes □ No

Type of Employment
□ Government □ Private Industry □ Consultant □ Construction □ Other

REGISTRATION FEES

<table>
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<tr>
<th>Rec'd Before</th>
<th>Rec'd After</th>
<th>Rec'd After 4/29</th>
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<tr>
<td>2/29/96</td>
<td>2/29/96</td>
<td>and on-site</td>
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<td>Member</td>
<td>$475</td>
<td>$500</td>
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<td>Nonmember</td>
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<tr>
<td>Educational Institution*</td>
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<td>$350</td>
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<td>Govt. Employee Member*</td>
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<td>Govt. Employee Nonmember*</td>
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<tr>
<td>One-Day Registration</td>
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<td>$300</td>
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<td>Circle one: Mon. 6/10 Tues. 6/11 Wed. 6/12</td>
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<tr>
<td>Speaker Registration</td>
<td>$375</td>
<td>$375</td>
</tr>
</tbody>
</table>

SPECIAL SESSION FEES

| Practitioners Roundtable | $90 Member | $125 Nonmember |
| SAVE Membership Dues     | $95 U.S.   | $120 Canada/Mexico |
|                          | $140 International |

MODULE I AND MODULE II WORKSHOPS

Module I
- Attending Conference | $650 Member |
- Attending Only Workshop | $850 Member |
- Module II
  - Attending Conference | $350 Member |
  - Attending Only Workshop | $450 Nonmember |

Module II
- Attending Conference | $400 Member |
- Attending Only Workshop | $550 Nonmember |

*Proof of education or government institution employment required.

Note: The SAVE membership year begins Nov. 1 and ends Oct. 31. By joining now, you are eligible for the member registration rate. Your membership will expire Oct. 31, 1996, and you will be invoiced for the 1997 membership year.

PAYMENT
□ Check/Money Order □ MasterCard □ VISA □ Diners Club Exp. Date

Make check payable to SAVE
Account # Signature

Total Enclosed $
Value World is published three times a year by the Society of American Value Engineers normally in the months of February, June and October, and is distributed internationally.

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Value World welcomes original articles on value engineering and related disciplines. Reprints or abstracts from other journals or periodicals are acceptable provided that prior permission is obtained from the original publishers. Value World's policy is to provide the medium for contributors to express themselves professionally on advances in the state of the art. The views expressed in Value World are neither approved nor disapproved by the Society of American Value Engineers.

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