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The Journal of Value Engineering for the Society of American Value Engineers
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Special Note

Contributions to Value World are welcome; please send them to Value World Editors, 220 N. Story Rd., Suite 114, Irving, Texas, 75061. Editorial changes and publication of an article or other contribution in any particular issue are at the discretion of the Editorial Staff. All material for Value World must be received on the 15th of the month preceding publication (i.e. November 15th for Jan./March issue).

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PARKER HANNIFIN ANNOUNCES WINNER

Parker Hannifin recently recognized the winners of its fiscal 1982 Cost Reduction Competition. Awards were made by the Corporate Cost Reduction Review Committee following Division and individual recognition awards made by each of the Company's Groups.

Since all cost reduction programs are built on individual effort, the Corporate Review Committee makes an evaluation to select one person whose contribution to successful cost reduction through ideas, implementation and motivation deserves special merit, This year, Don Smrekkar, Hose Products Division manufacturing manager, received the honor.

The Cost-Reduction Awards Committee, as well as the Group and Division level Committees, devoted considerable time in the review of the candidates selected. Over seven thousand cost reductions were implemented in fiscal 1982, representing over $52 million total in cost savings.

"Cost-reduction programs are extremely important to the competitiveness and profitability of our Company," said Pat Parker, Company chairman, in naming this year's winners. "We need and appreciate each employee's ideas. These ideas are imperative for our success in current and upcoming programs."

(Submitted by Bruce Roberts, Editor, Dollars & Sense, Parker Hannifin Corporation employee newsletter.)

John W. Bryant joins Value Analysis, Incorporated

J.K. "Dusty" Fowlkes, President of Value Analysis, Incorporated (VAI), Newport Beach, CA, announced March 24 that John Bryant, CVS, formerly of Harbridge House, Inc. would be joining their firm in April, 1983.

Mr. Bryant is the immediate past president of the Society of American Value Engineers (SAVE) and leaves Harbridge House as a vice president after 18 years of service.

According to Mr. Fowlkes, John will complement their current team in the United States and will allow them to add additional services for the benefit of both present and future clients. His many years of experience and service to both industry and the SAVE organization will be a major factor in expanding the resources and services of VAI.

Value Analysis, Incorporated is based in Newport Beach, CA and has affiliate offices in South Carolina, Massachusetts, India, Western Europe and Australia.

ASEE


IIE

A Spring 1983 Continuing Education Update is now available from the Institute of Indus-
It is most interesting to note that on observing internal concerns of most South African companies their problems almost without exception include the following elements.

- INADEQUATE COMMUNICATIONS:
- SHORTAGE OF ARTISAN AND/OR MANAGEMENT SKILLS:
- ESCALATING PRODUCTION AND BURDEN COSTS, INHERENT WITH DWINDLING PRODUCTIVITY.

As these three areas of weakness apply equally to large and small businesses, the approach that I outline is a proven method in overcoming these shortfalls. It should be considered by all managers therefore to be a universally adaptable management technique.

For some fourteen years now our company successfully developed a Cost Improvement activity that is today acclaimed to be among the best in the world. It's success is largely due to extremely careful planning and an undaunting commitment by management to the activity's objectives. The latter factor is of paramount importance for any activity of this nature to be successful.

The planning function however, requires more co-ordinated effort in motivating participation to reduce unnecessary costs at the same time retaining the required quality of output: The method of making this possible is the subject of my presentation.

You may now justifiably ask: "How does this objective relate to those elements listed earlier?" The answer is simply "by introducing the Value Analysis (VA) discipline into your management style".

This may be more difficult than it first appears, because many traditional company ways will require modification to introduce this management system.

Firstly, it is imperative that the company environment be created for effective communication between all levels of employees: in effect a frustration free environment. This will more than likely be the most challenging area of adjustment for a company first introducing the discipline.

I intend to share with you just how our company was able to make this transition by introducing the concept of "Value Circles" to it's management approach and subsequently I believe to South African Industry.

As mentioned earlier, our company has had a sophisticated Cost Improvement Program for some time now. Within this activity various elements have been given much emphasis.

**VISABLE MANAGEMENT COMMITMENT**

A policy and procedure specifying management's expectation in this regard is issued by our Corporate Chairman for endorsement by all operating Managing Directors. These documents have been constantly refined as the program has developed and as our management style has progressed toward participative management. These two documents set the precedent for the remaining contents of our Cost Improvement manual, which for obvious reasons is a much guarded asset of the company.

The underlying purpose of this policy is to communicate management's unreserved commitment to improve cost through the accomplishment of the program's objectives. Some proof of this commitment is demonstrated by the fact that the Cost Improvement manager reports directly to the Managing Director at the executive level. This commitment must not however be seen as being complete until such time as the executive becomes actively involved in exercising constructive discontent.

To facilitate adequately the application of this objective it is imperative that all company personnel be made aware of the various reasons for outdated decision making and methods available for being more effective.

**VALUE ORIENTATION**

During the process of trainees identifying their responsibility in managing change a large portion of the sixteen hour orientation is spent in experiencing the Value Thinking process. Group dynamics, teambuilding, social adjustment and creative brainstorming being some of the subjects covered during their application exercises. Integrated with this participative climate is the practical application of the VA job plan as applied to the overall thinking discipline. During the latter part of the training session the participants embark on their first Value Circle Assignment; by applying their newly learned skills to a live project from within the company. Having insufficient time to complete their study in the conference room this incomplete project serves as a spring board for the circle to then become fully operational as soon as they return to their respective job responsibilities. A month after this, the group presents their circle recommendations to the company Executive for implementation approval.

As the circle approach encompasses the full spectrum of mind dynamics we have found it imperative that each circle attend a six monthly update/refresher session where additional skills are taught and the value process is reviewed.

**ACKNOWLEDGED EFFORT**

Recognition of the Value Circle's effectiveness is accomplished through each circle member's personal involvement in implementing improvement and their participation in the Cost Improvement Program. Various forms of recognition are offered by the company to participants in achieving their pre-determined goals, such as:

- Local and corporate awards
- Merit increases
- Merchandise gifts
- Various specific incentive awards.

However, by far the most important acknowledgement to any value circle member is that as an individual, they were recognized by the company to possess the ability to contribute towards more effective decision making.

**VALUE CIRCLE APPLICATION**

In February of this year we initiated two proto-type circles. One is operative at the artisan level and the other at junior management level. The operation of these two multi-

**JOY'S DEFINITION OF VALUE CIRCLES**

A multi-disciplinary multi-level group of individuals who by systematically combining their expertise with Value Thinking (in a frustration free environment) are cost effectively and creatively able to manage change.

**CRITICAL ELEMENTS REQUIRED FOR SUCCESSFUL VALUE CIRCLES**

- Visible Management Commitment
- Policy
- Involvement
- Value Orientation
- Techniques
- Process
- Participation
- Acknowledged Effort
- Goals
- Recognition
- Feedback
- Circle Application
- Pilot Teams
- Sponsorship-Coaching
- Terms of Reference
- Facilitator
disciplinary, multi-organizational teams over the following four months proved to be invaluable, for these reasons:

- Teething problems were rectified for future teams.
- Terms of reference were clearly developed.
- Further training needs were identified.
- The introduction of a totally new approach to our company was accomplished in an orderly manner.
- A bridge was constructed to overcome the traditional "resistance to change" syndrome.

The ten teams now operating meet weekly to study the opportunities for their particular study. These opportunities may be identified either by management or the circle members themselves. Should a potential circle member identify a suitable subject for study he circulates an "intention to improve" memo to all names included on the Value Circle member register inviting participation. On receipt of volunteer's responses he then selects this team and calls the initial meeting. At this meeting the objectives are clearly defined by the circle leader and their charter and meeting times are agreed upon.

On completion of their study the circle then presents their recommendations to management after which the circle is responsible for implementing the relevant changes.

In effect our value circle approach is focused at localized decision making. On conclusion of the study a circle is disbandoned and the circle members are then available for selection to a further study. In this way the value circle becomes an integral part of the company's management style. Incidentally, this approach frequently involves our suppliers in circle meetings as well.

RESULTS AND BENEFITS

The benefits to date have been nothing less than outstanding.

Cost Improvement performance has improved substantially since the introduction of Value Circles. Audited annual savings for the past year approach 4% of net sales. This figure is even more astounding when one considers that this year Joy achieved record sales. Productivity has in turn followed the same trend over this period.

An interesting additional element has evolved from the introduction of value circles in the application of Quality Assurance as an integral management system.

These benefits are in fact only the effects of far more basic causes.

- That of creating an open environment within the company for unrestricted communications at all levels.
- The company is now able to fully utilize the abilities and skills of all of its Human Resources. In turn, because of their involvement, the staff is far more motivated towards effecting improvement within their responsibility areas.
- Decision making is more structured and as such, creative, cost effective decisions are now being made at all levels.

CONCLUSIONS

To overcome the traditional problems being experienced in South Africa Industry, management must recognize that their future success is largely contained in the untapped Human resources presently employed by them.

The Value thinking process as outlined during the course of this conference is completely logical, but may I say, unnatural. The onus for its implementation is therefore squarely on management's shoulders, as the environment must be created for its application.

We at Joy have found that "Value Circles" work very well for us and we look forward with excitement to its future developments in our company.

(Tough Times Never Last Continued)

To reduce and control our costs it is necessary to master all of our human resources and as a team provide what is required, to question what is required, and challenge all requirements to see if they are truly required in today's environment.

The Cost Improvement Activity's concepts and approaches are sure ways to dramatically change our costs for that which is required. The significant words are managed change.

Tough times never last, but tough people do!

A.E. Mudge
FUNCTION: THE HEART OF VALUE IMPROVEMENT

When Charles W. Bytheway came up with his FAST DIAGRAMMING (Function Analysis System Technique), we all agreed that this was the only worthwhile addition to the great work of Larry Miles.

Now we have a worthy successor to Bytheway’s achievement. It is Park’s Catalogue of Frequently Used Functions in Value Engineering. This catalog of functions is a very condensed version of Dick’s labor of love over the past ten years. The minute I finished reading it I asked Dick to send a copy to Dave Johnson in California.

Why Dave Johnson? He taught me a good way to define the function—our value analysis function, that is. I was bogged down in the integro-differential equations of a problem in functional analysis—something we practically never use in value work. If you like mathematics you have to be careful not to let the math take over.

At that time RCA and Whirlpool were together. In a joint workshop, Dave Johnson was value analyzing the bent hose that vomits the dirty fluid from a washing machine into the laundry tubs. In those days it cost 23 cents to put the bend on that hose. Tired, I looked up from my mathematical scribbling to hear Dave addressing the group. “Tell me,” he asked, “What this hose does? Define the function.”

A tired voice answered, “It alters the direction of water by 90 degrees.”

“In two words,” Dave pleaded, “An active verb and a measurable noun.”

Silence. Then a summer student, who was emptying ashtrays, spoke up, “Shucks, I can tell you what it does. It bends water.”

More Silence. Standing up from my futile math, I asked, “Does everybody understand what he means?”

Everybody looked at my corporate name tag. There is nothing like management support. Vigorous nods of assent followed.

Dave Johnson said, “Bends water. We’ll fly with that.”

Function definition in value work is meant for the task group alone. It will not be carved up. That is why we say function analysis instead of functional analysis. The latter is limited to mathematical functions and functionals (related functions that depend on other functions—all mathematical).

As Goethe said, “Thinking is easy. Action is difficult.” Converting thought into action is the purpose of function definition. The inimitable Larry Miles taught us how to do this in two words: an active verb and a measurable noun. A new discipline should not stand still and VA has not. As Lawrence D. Miles told me, “I founded this method and I am glad to see others build on that foundation.”

Management

Where would you say I had learned most about value engineering? With Larry Miles, of course. Outside the United States, I meant.

Finland!

In a factory which successfully exported major appliances both, to West Germany and Russia, I asked the chief engineer, “Can you suggest a way to strengthen the U. S. dollar?”

With a reassuring smile, he answered, “WE will earn it’s way in any currency. It brings the wealth of information in the factory floor right up to the top of the house.”

The top of the house! That’s an answer. You have to secure top management support early in the pro—No! Not program. Programs are the first to go in terms of stress. VA, VE, value management, whatever we call it has to be a profit-making operation, not a program. Nobody lays off a worker whose tool is bringing in a substantial profit.

For the working hours it ties up, value improvement must show at least as much profit as any other operation in the establishment. This profit can take the form of increased sales, retained earnings and newly available cash. All these are part of the greater gross margins that value improvement must produce.

How?

Not by pep talks, posters, or propaganda. These techniques might help a little but there is no substitute for a change in mindset. Whether used in the rest of the establishment or not, the methods of direct costing are a good way to find out if an improvement is really an improvement or whether doing it will cost more than it improves.

Who Benefits from Quality?

One naturally thinks of the ultimate user, the dog who eats the dog food or the dog’s owner who buys it. True, both user and buyer benefit from the quality of a product or service but there are many in-house beneficiaries. Quality work is pleasant work, pleasant for the producers themselves.

Not only is good work pleasant work, but happy working conditions make for good work. I know from personal experience that when the crews are happier, the ships are more efficient. Anything management can do to improve the quality of life at work results in benefits to the whole company.

What is the comment that puts a company together? Profit. And that means profit as reward for good work, and profit as recognition of the ownership of patents, machines and buildings. One kind of profit, in the form of personal savings, can turn into the other. The Japanese wholeheartedly accepted our Western view of profit but they blended it with their native culture to enrich the whole field of defining the function.

Profit is the economic guiding light of Western Civilization. It is the aspect of Western Civilization that the Japanese have combined with their own to create a more universal type of civilization. Something that takes into account the needs and desires of all human beings; rich and poor alike, driving and leisurely alike, active and quiet alike, something more than Eastern or Western Civilization, something good for anybody anywhere.

Now what can we take from their culture to improve ours? An American corporation calls it participative management. The Japanese owe this spirit of cooperation to their Paleo-Siberian background. The great glaciation was much milder in Eastern than in Western Europe and Asia, allowing people to cooperate with the reindeer, with each other, and with neighboring peoples. This ancient spirit of cooperation is in sharp contrast to our traditional business hostility. We can make our culture flexible enough to utilize and reward the knowledge and judgement of the people who make our products and render our services. Their honest effort, without pouncing on the mistakes of others, deserves compensation. The reward could take the form of a percentage of the gains in a given investigation by a particular task group.

Learning from Value Analysis

How to measure the gains of VA? The Manager of Manufacturing in a very successful appliance factory in Finland told us that the word savings had no accounting respectability.

“The word means too many different things to too many different people,” he told us. “The great discovery of Miles is the importance of defining the function.”

A measurement for true value work must not reward a correction of the mistakes of others. The baseball batting average measures only successful performance achieved by a person’s own efforts. That is the kind of measurement we need. The baseball batting average starts out with TAB (times at bat) and divides that number by the number of hits and the RBI (runs brought in). It grants no credit for freebies, such as walks and taking a base by being hit by the ball.

A batting average for value work.

Learning something new and useful about our discipline would be very helpful. How about granting credit for increased sales (the equivalent of runs brought in RBI) increased earnings and increased percentage of profit but nothing for engineering, manufacturing and administrative goofs and boo-boos. This number, reflecting an improved function, and not the mistakes of others, could be divided into the number of items investigated. The value improvement function leads to a business objective. Understanding and defining the value improvement function is a serious intellectual effort that deserves compensation. Such a reward would avoid possible conflicts with the rewards of performance (Continued on Page 23)
INTRODUCTION TO THE PROGRAM

In July 1979 the State of Maryland assigned an architectural contract to the firm of Smeallie, Orrick & Janka, Ltd., Baltimore, Md., for the development of a new courts and multi-services administration complex to be located on Main Street in the historic town of Elkton, Md. A separate consultant had previously prepared the project and schedule calling for schematics to be due by February, construction documents complete in November, 1980, and construction bids were to be due in January, 1981, with project completion scheduled for and currently expected by February, 1983.

The Baltimore architectural firm was assigned the contract following the required technical and price evaluation of the submitted proposal. Firm personnel jumped into the program at full throttle to generate the speed and momentum necessary to maintain the fast track schedule. The Elkton district would soon have a new court house including related and unrelated state facilities in the middle of town. One corner of that block is already improved with an existing and occupied building, and the lower elevation portion of the lot is within the Elk River's flood plain.

The contract listed the state's normal professional criteria, expected from the architect and associated consultants. In addition, it required the application of a value engineering (VE) effort to assure the attainment of maximum value from the project. Value in this case means the maximum utility and user/local satisfaction for the least taxpayer dollar and time.

SCHEMATIC DESIGN TO STATE AND LOCAL CRITERIA

The six months available for the schematics of the project had to cover many facets of the basic architectural procedure. The designer had to line up all his consultants, specifically the structural, mechanical, electrical, architectural and VE firms, as well as to develop all the engineering facets of the site and the desires and preferences of the "user" agencies, the judges and the townpeople. With the state dragged a bit since the program was not complete in all respects; miscellaneous answers were needed here and there. But this is normal and expected. "User" and local comment were solicited and documented for designer direction during schematic design development stages.

The original concept as presented to the architects was for four buildings of three-story (maximum Main St. elevation) construction encompassing 49,081 square feet of usable floor space and parking areas including the flood plain area. Twenty-two percent of that floor space was for the district court, juvenile services and public defender quarters. The remaining was to serve the parole & probation office, employment security, social services (½ the overall total), public safety, vocational rehabilitation, the forest service, dept. of assessment and taxation and in-house supporting services. Life cycle costing was to be performed by the State's method, looking at operational and maintenance costs and upkeep.

The preliminary estimate of total project cost (not including fees) was $9,314,000. The remaining State requirement, the use of VE consultants, was now called upon to reduce cost by $1,014,339 to reach the required target at $8,299,661, and this while continuing to prepare the contract documents on schedule. During the proceedings, many improvements in the end product were generated by VE. Along with the just-noted beginning numbers relating to floor areas, however, the following figures resulting from the study are of interest. The net area available to the district court itself was increased 22% to 10,042 square feet and the employment security area was increased 16%, each being evaluated as under-sized. These increases were not at the expense of other services. The analysis had been able to generate 4,014 square feet of additional floor space while gross area was increased almost 8,000 square feet. In addition, the garage area was improved in both size and efficiency.

A STUDY IN VALUE ENGINEERING

(Reprinted with permission from "Baltimore Engineer", October, 1982)

by Taylor A. Birckhead, Consulting Engineer
Value Programming, Inc., Towson, Md.
assisted by John R. Orrick, AIA, Smeallie, Orrick & Janka, Ltd., Baltimore, Md.

ARCHITECTURAL CHARACTERISTICS DIRECTLY AFFECTING VALUE

EVERYDAY ATTITUDE: POOR VALUE

VE GENERATED: HIGH VALUE

1. Architect's other responsibilities.
2. Lack of time.
3. Sluggish habits and attitudes.
4. Lack of information.
5. Pre-conceived ideas.
6. Prejudice.
7. Temporary circumstances.
8. Lack of creative ideas.
10. Failure to use available specialists.
11. Desire to conform to custom.
12. Fear of personal loss.

1. A period of sole concentration.
2. Carve a niche out of personal schedules and TAKE THE TIME.
3. Remove from habit - take a fresh approach.
4. Factual and complete information on hand at right time and place.
5. Old ideas infused with forward looking concepts.
6. Equal opportunity provided for all thoughts, ideas and concepts.
7. Extraneous distractions eliminated for a short constructive period.
8. A world of new ideas opened up.
9. Experienced sources provided and tapped.
10. Usable specialists designated and called on.
11. Progress selectively out-modes such conformity.
12. Fear eliminated by confidence.

VALUE ENGINEERING SESSIONS

The key to the successful VE study of any project lies in the state of mind of the VE consultant, a point well understood. This is the attitude of each and every participant toward an atmosphere of creative, positive thinking and outgoing performance.

Every professional can look at the twelve typical attitudes listed in the first column of the following table and recognize them as existent, any or all, in almost every undertaking. The VE program is a specific format for addressing conversion of these common attitudes and conditions to high value achievements as illustrated in the second column. These items are herewith presented as directed toward architecture, that being the project under discussion:
The architectural firm provided a base for the State's requirements. These included the standard specifications, the purpose of the completed facility, and the tailored aims and desires for the particular location involved. The Schematics phase already completed by the architectural firm provided a base for examination and analytical study from which to stand back and critically, constructively, piece-by-piece, make a VE determination to reduce and prove six-stage format:

1. Information stage
2. Function determinations
3. Creative (ideas session)
4. Evaluation-Development
5. Presentation (of developed output)
6. Implementation

The objectives of the session as faced and acted upon were:

a. Review the Program Criteria (the State's aims and desires).
b. Question criteria causing unnecessary cost for value received.
c. Recommend design changes to reduce estimated initial costs.
d. Recommend alternates which reduce life-cycle costs.
e. Reduce the construction cost, estimated at closing of schematic design period, by net $1,014,339.

The criteria involved were a lengthy list of the State's requirements. These included the standard specifications, the purpose of the completed facility, and the tailored aims and desires for the particular location involved. The Schematics phase already completed by the architectural firm provided a base for examination and analytical study from which to stand back and critically, constructively, piece-by-piece, make a VE determination to achieve the objectives. In summation of the day's effort, the State was given a number of items from which to pick and choose, ranging from $4,000 to $4,368,721. "Additional cost" items reflecting life-cycle considerations were included. In a separate and later action, the State review board selected items totaling a net reduction in estimated cost of $1,404,248.

To demonstrate here the type and scope of ideas developed, copies of two summary pages from the proceedings are presented. There were also analysis sheets listing advantages and disadvantages of each item with quality ratings of "excellent, good and further study" plus economic impact of each, in the submissions to the review board. These are omitted here but available to an interested party. The first summary page lists "Alternatives Considered — But Not Recommended" while the second provides "Alternates Presented for Adoption."

Alternatives Considered — But Not Recommended

a. Substitution of mansard roof on Court Building with flat roof wing parapet or gravel stop — Reason not recom-
mended: Replacement of mansard on Court Building roof compromises program which inures project buildings should reflect Courts building and the fine residential character of the area.
b. Square up buildings — Reason not recommended: Design of project has incorporated major savings in date by reducing programmed four buildings to two buildings. To build two "box" like buildings in lieu of the design indicated in the Schematic submission would be counter to the program requirements which recognize the scale and inherent residential character of the area.
c. Use of exterior materials other than brick — Reason not recommended: Program calls for brick exterior facing — Architects agree with this requirement since stone would be too expensive and other panel materials would not be in character with the area.
d. Delete arches in motif throughout — Reason not recommended: The inclusion of arch motifs has been accepted with enthusiasm by the Historic Elkton group and the State Architectural Review Board. If this motif was to be exchanged for a simple post and lintel motif, we believe the total design scheme would lose much of the character that the program infers.
e. Delete arch motif in Office Building #2 only — Reason not recommended: Same as d, above — this motif also is a design element which, in addition to the exterior materials, ties the two buildings together.
f. Use of inverted insulation and a special roofing — Reason not recommended: This type of roof system has been withdrawn from the market, and the synthetic roofing using #10 or #12 crushed stone has not been sufficiently tested.

Alternates Presented For Adoption

SUGGESTED ALTERNATES  
COST DIFFERENCE

1. Delete Landscaping  
- $ 4,000.00

2. In lieu of slate, use standing seam metal at mansard roofs  
- 4,930.00

3. Delete Employment Security from Bldg. and retain at present location  
-Rent $8,700 sq. feet of partitions  
- 22,000.00

4. Delete top floor and put offices in basement (double deck parking outside)  
- 614,952.00

5. Reduce ceiling (and bldg. height) volume 10" in offices & 24" in Courtrooms  
- 630,007.00

6. Delete sprinkler system  
- 125,000 GSF x $1/GSF = - 125,000.00

7. Delete Bldg. #2 but build foundations and substructure providing covered parking and 3rd floor deck. Put all HVAC equipment in Bldg. #1 with space provisions for later construction of Bldg. #2  
- 4,368,721.00

Additional Cost Alternatives (Additions)

1. Add selective switching  + $ 6,400.00

4. Proposal Phase — 8 hours

5. Costs of VE

- Design Reduction Total  
- 403,000

- Net cost savings  
- 403,000

A quick analysis of the VE results reveals very positive monetary results.

Architectural phase  
Expected Savings

Schematics  
$ 1,404,248

Design Reduction Total  
403,000

Cost Reduction Total  
$ 1,807,248

Cost of VE

- VE Consultant  
- $ 8,335

- Architect/Engineer time  
- 9,250

- User/Purchaser time  
- 1,750

Total VE cost  
$19,335

Return on Investment 94:1; or a net reduction in construction costs of $94 for every dollar spent on the VE program.

Maybe even more important, however, are the aesthetic and human factor improvements generated without evaluation in dollars and cents. The increased total floor space, the improved area usage along with comfort and greater operating efficiency, better neighborhood understanding and relationships: All these factors are important VE products.

Recommended Procedures For VE in Future Building Designs

The architect responsible for this particular program has developed his own concept of how VE can be even more constructive than it has been in this particular case. In support of his theory, he presents the following chart showing the SCOPE OF PERMISSIBLE CHANGES VS THE PHASE OF PROGRAM EXECUTION. This chart, modified slightly here.
to adapt to the current effort, was previously published by Mr. James J. O'Brien, PE (CVS), Cherry Hill, N.J. in his articles. Reference to it in relation to the Elkton project shows that the current VE effort, specified by the state's contract, was only commenced at the end of the second phase, wherein maximum effectiveness of allowable change is already down to the 75% level. Therefore he is recommending an earlier start with a sustained follow-up, resulting in more timely creativeness, less in-process review, shorter time expended and even greater rewards for the effort.

The Architect's Recommended VE Program: 32 hours plus optional 8 hr. session:

A. Information — 6-Hour Session
   1. VE approach
   2. History, definition, by-products
   3. Benefits, importance, interface
   4. Aspects, key techniques, etc.

B. Review of Program — 8-Hour Session
   1. Site (Test Borings, barriers, surrounding area, planting required.)
   2. Size and characteristics of program — types of spaces.
   4. Environment, required heating and AC considerations.

C. Schematic Design — 8-Hour Session
   1. Review of functions.
   2. Review of layout of buildings relative to site (services available.)
   3. Review of traffic flow to site.

D. Design Development (Preliminary) — 8-Hour Session
   1. Site Considerations: Access to building, retaining walls, storage tank locations, etc.
   2. Building Plan: Partition layout, heating and AC distribution, structural systems.

E. Construction Documents (Optional) — 8-Hour - 25% complete. Proposed
   1. Manufacture of partitions.
   2. Structural considerations.
   3. M/E equipment.
   4. Other detail considerations.

In Summation
The Elkton project and all concerned have benefited a great deal more than the considerable measureable amount from the inclusion of a VE clause in that state contract. The schedule is still intact and slated for completion in early 1983. It is of interest to note that a sister project, involving a similar facility in Bel Air, Md., has also benefited from such a VE clause.

In the interest of helping more designers and developers assist their clients in obtaining similarly better results at lower cost through this proven procedure, the Society of American Value Engineers is planning to conduct a one-day introductory seminar in conjunction with the Engineering Society of Baltimore. This session will benefit the end user even more than executor. One must remember that whereas a VE Program is an important tool for the architect, designer and planner, or other executing organization, the real benefits accrue to the buyer and/or user of the facility. They profit from the lower costs and the continued satisfaction of better fulfillment of the completed project. I commend the State of Maryland for its foresightedness in including VE clauses in its contracts and hope that specifiers in other areas will be able to profit from the pleasant experiences related here.

NEW CVS BROCHURES
The revised Certification Program brochure is now available through the SAVE Business Office. Now included in one brochure are Certification Requirements for Associate Value Specialists (AVS), Certified Value Specialists (CVS), CVS Recertification and Workshop Approval and the appropriate guidelines, policies, procedures and application forms. This program was revised effective March 1, 1983 with fee changes effective May 1, 1983.

PLEASE DESTROY ANY OLD BROCHURES YOU MAY HAVE.
Now available through the Institute of Industrial Engineers

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HANDBOOK OF INDUSTRIAL ENGINEERING

Editor: Gavriel Salvendy, Purdue University

This unique daily working reference gives you the latest proven approaches to increase productivity—and the quality of working life—even as you reduce operating costs.

Detailed descriptions clarify hundreds of modern engineering methods, and review the advantages and limitations of each, in such areas as:

- performance measurement
- ergonomics
- manufacturing engineering
- quality control
- information systems
- quantitative methods
- much more

"The Handbook should be valuable to industrial engineers and other engineers, as well as to all levels of managers. The industrial engineering principles that are outlined are timeless and basic and should prove useful to corporations, both large and small, to continuous process as well as discrete part manufacturers, and especially to those working in the service industries...."

—D.C. Burnham, Retired Chairman, Westinghouse Electric Corporation

2,128 pp. April 1982
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Industrial Engineering and Management Press
Institute of Industrial Engineers
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attn: Publication Sales
VALUE IN AMERICA
(BOARD OF DIRECTORS PLAN)
By John H. Maurer, CVS
Regional Vice President - North/Central Region
Consultant Westinghouse Productivity and Quality Center

This is an important time in the history of value. Never before has United States industry and government needed the benefits of Value Analysis and Engineering (VA/VE) so much. We are now in a world market where the competition is fierce. The game goes to the company or country that can produce better products for less cost. That’s a definition of value. Similarly, the issue with government is defining required functions and services and providing them for the lowest possible cost. That also is a definition of value.

VA/VE is not the total solution to all our problems, but it offers a more direct and effective method of dealing with them than anything else I know. Now is the time value will be received if we can communicate it properly. Such a receptive environment will not be received if we can communicate it properly. Then they will ask for functions 3 and 4.

Important Note: One of the lessons learned in the past is “Don’t give them the recipe until they ask for it.” We have spent 20 years telling people the recipe (functions 3 and 4) before they wanted to know it.

4. There is importance to the time sequence of information. We must first get their attention. Once we have their attention, we can call them why they should be interested in VA/VE and what it can do for them. If we do functions 1 and 2 properly, then they will ask for functions 3 and 4.

5. These different steps can be accomplished by using different media forms. To get the attention of a CEO, you have to get in print in periodicals that CEO’s read, namely, Forbes, Fortune, Business Week, and the Wall Street Journal.
6. It is essential that we have the value story told in CEO language, addressing the issues that concern CEO’s.
7. The quality thrust came into my conscious with the NBC white paper entitled If Japan Can, Why Can’t We? We need to follow that example to bring value into the conscious thought of America.
8. To accomplish the tasks 5, 6 and 7, in the print and electronic media mentioned, we need professional public relations effort. We in fact need a multidisciplined team representing three areas of expertise and experience: 1) Professional P.R., 2) CEO’s, 3) Value. Such a task team is to be formed by April 1st to direct this monumental “Value in America” effort.
9. Resources are needed: 1) Money, 2) Information on successful Value programs. Funds are being sought from sources indicated. You, the membership of SAVE, must begin collecting information on successful Value programs. Presently, we don’t even have a good record of which companies have Value programs.
10. The culmination of all the expense and effort of step 1 may be a phone call to SAVE NBO by a president of a U.S. industry. All the expense and effort will have been in vain if we don’t have a response for his question. According to Rita, she has very little to give. We have

to get our booklets, literature, films, video tapes, etc updated. We have to get our Resource Center up-to-date.

11. We have been trying to do pieces of this all along, but the pieces cannot stand alone. The elements are interdependent. What we need is a synergistic effort to do the whole thing.

An ambitious task? . . . You bet.

Can we do it? . . . I don’t know yet. It depends on how dedicated you and I are. Our President and Board of Directors are going to give it all we’ve got.

Chapters and Members will be contacted for specific action. There will be a VA of VA Workshop led by Trish Barlow at the Chicago Conference. Here are some examples of what has been done in the North/Central Region already:

1. Dayton Chapter had two excellent articles on VA/VE in the Dayton paper. They’ve gotten TV news coverage of a Chapter meeting.
2. The January 10th issue of Business Week had an article on Philips Industries and the Value Program that Tom Cook helped them develop.
3. The Pittsburgh Business Journal ran a two-page article on VE at Westinghouse and Joy Manufacturing.
4. Northern Ohio Chapter is sponsoring a 1-day orientation on Value Methods for improving the economy of Northern Ohio. The audience is the Work in Northern Ohio Council, consisting of top leaders of industry and state government.

What is needed now is all of us doing such things in an organized, synergistic manner. Get yourself involved by calling your regional Vice President or writing to Interactions. Develop a local P.R. plan in your chapter meeting. The same principals will apply.

Let’s make Value a way of life in American industry and government.

1. John Jonelis Dinner with Marguerite
2. Jim Wilcock, Presentation to Pittsburgh Chapter, November 1982
WHY — HOW

UTILIZE MEDIA SUCH AS....
- NBC WHITE PAPER, ETC.
- FORBES, WALL ST. JOURNAL
- FORTUNE, BUSINESS WEEK
- LOCAL NEWSPAPERS

1) GET ATTENTION

TIME SEQUENCE

2) COMMUNICATE "WHY" (WHAT VA/VE CAN DO FOR YOU)

BOOKLETS
- VIDEOTAPE
- SPEAKERS
- OTHER ORGANIZATIONS

(DON'T GIVE THEM THE "RECIPE" TILL THEY ASK FOR IT)

3) COMMUNICATE "HOW" (TO ORGANIZE PROGRAM)

BOOKLETS
- CONF/PROCEEDINGS
- CONSULTANTS
- "YELLOW PAGES"
- VA/VE RESOURCE CENTER
- CHAPTER MEETINGS
- CHAPTER ORIENTATIONS

4) COMMUNICATE "HOW" (TO DO VA/VE)

ORGANIZE PR
- TASK FORCE

IDENTIFY MEMBERS
- APPOINT BOD CONTACT

DEFINE TASK

DIAGRAM FUNCTIONS
(THIS IS IT)

OBTAIN FUNDS

FORM FUND RAISING COMMITTEE

OBTAIN INFORMATION (ON SUCCESSFUL VALUE PROGRAMS)

FORM INFORMATION TASK FORCE

INFORM MEMBERS

INVOLVE NBO

INVOLVE CONSULTANTS

INVOLVE CHAPTERS

GOVERNMENT GRANT
- INDUSTRY DONATIONS
- VALUE FOUNDATION
- "IMPROVE THE WORLD" MONEY

OBTAIN COMMITMENT - TOP MGMT.

ACADEMIA
- OBTAIN COMMITMENT - DEANS

BUSINESS
- OBTAIN COMMITMENT - CONGRESSMEN

PROMOTE VA/VE
WINNING TOP MANAGEMENT’S ACCEPTANCE THROUGH GREATER SUCCESS IN CAPTURING COST AND VALUE IMPROVEMENTS

Speech to Society of American Value Engineers - Southwestern Ohio Chapter
Dolf DiBiasio
December 7, 1982
McKinsey & Company, Inc.

INTRODUCTION
Since its origin at GE in 1947, value analysis/value engineering (VA/VE) has been something of an enigma in the business world. (Exhibit 1)

True, VA/VE programs have repeatedly demonstrated their potential contribution and importance.

Also true is that fact they have been resisted and ignored by many managers and companies.

Unfortunately, in my opinion, VA/VE continues to be significantly underutilized as an effective competitive weapon in most U.S. Corporations.

My observations are typical of the frustrations felt by both practitioners and informed observers. Several of these frustrations concerning underutilization, I'm sure are familiar to you. (Exhibit 2)

This lack of acceptance is particularly surprising when we consider the potential financial returns from value engineering programs.

Joy Manufacturing, for example, recently showed that it has achieved returns on its VA/VE program ranging from 3:11 in the first few years up to the current levels of 15:1 or better.

And most other examples that I am familiar with confirm the fact that successful VA/VE efforts typically return saving of 10:1 or better.

Looked at another way, Value Engineering quite often can be used to reduce the cost of an individual product by more than 30 percent. Just to cite two examples from our experience (Exhibit 3):

In one case, the manufacturer of a professional quality video camera reduced product costs by almost 30 percent in the course of 1 year by means of Value Analysis.

In the second case, a PBX manufacturer has taken the cost of its low-end product down by more than 33 percent through Value Engineering efforts.

In addition, when used to its full potential, value engineering cannot only reduce product cost, but also improve the value of the product to the customer, and thus the competitive position of that product.

This potential was demonstrated by a 1967 Department of Defense study which analyzed over 100 successful VA/VE programs. The findings were impressive (Exhibit 4)

Thanks to value engineering, producers gained product cost benefits from a variety of sources.

"Value engineering is basically in existence to change people's minds, and with human nature being what it is, VA/VE is constantly swimming against the tide."

"It is doubtful if any proposition ever offered management such spectacular economic gains, yet was so resisted as a management tool."

"VE is an investment opportunity with the potential for large return on investment . . . it is paradoxical that companies and individuals are not falling all over themselves to take advantage of this virtually untapped investment opportunity."

"VA is a tool that is underutilized in this country . . . those practicing true value management are few."

VALUE ANALYSIS/VALUE ENGINEERING

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<th>SIGNIFICANT POTENTIAL</th>
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<td>BROAD APPLICABILITY</td>
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<td>UNDERUTILIZED</td>
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Exhibit 1

"Value engineering is basically in existence to change people's minds, and with human nature being what it is, VA/VE is constantly swimming against the tide."

"It is doubtful if any proposition ever offered management such spectacular economic gains, yet was so resisted as a management tool."

"VE is an investment opportunity with the potential for large return on investment . . . it is paradoxical that companies and individuals are not falling all over themselves to take advantage of this virtually untapped investment opportunity."

"VA is a tool that is underutilized in this country . . . those practicing true value management are few."

Equally important, the user in many cases got a product that was more reliable, easier to maintain and use, and better performing.

Furthermore, the disadvantages that were incurred in order to achieve these improvements were minimal. (For example, only 2 percent of these projects incurred a weight gain in order to realize other benefits.)

Furthermore, because of the many problems that are inherent to initial product design stages, there is good reason to believe that VA/VE could yield valuable benefits in the vast majority of situations.

In my experience, I've found few cases where initial product designs deliver maximum value to the customer, largely because of problems inherent in the product design process:

Conflicting priorities. Other considerations frequently dominate during initial design (for example, time-to-market requirements).

Lack of information. Exact function and cost are seldom completely understood in initial design.

Conservatism. Products are often oversized for their intended use, usually because performance characteristics must be determined, in part, through experience.

Changes in cost elements, particularly these days. Trade-offs that were made during design may be invalidated by shifting relationships between cost elements.

Lack of awareness. Often superior alternatives do not come to light during the initial design process, but arise only after the fact.

Other subjective reasons that tend to blind designers such as habitual behavior, monument building.

14 Value World April/June 1983
Given its significant potential benefits and broad applicability, it seems to me that value analysis should be achieving wider success and receiving a stronger endorsement from the top management of most U.S. corporations.

Since your Society is the ideal group to promote that success and win that endorsement, I would like to enlist your support and suggest some ways both to broaden the acceptance of VA/VE, particularly by top management, and to increase VA/VE's contribution to your company's overall competitive strength.

I will focus my comments on three areas in particular:

1. Recognizing what you are up against.
2. Resisting the temptation to misapply VA/VE situations where other tools do a better job, and maintaining the focus of VA/VE on those objectives for which it is uniquely designed.
3. Achieving the full potential from your Value Improvement activities.

Before I begin, however, let me just give you a brief description of my approach to these topics.

I am addressing VA/VE from a top-management perspective because that is the point of view we at McKinsey take in our work. To explain:

McKinsey & Company is an international management consulting firm, one of the oldest and among the largest in our field. Our primary emphasis is to counsel top management on business problems and issues of major importance to their corporations.

These problems and issues usually concern corporate strategy, product/market strategy, and organizational and operational effectiveness.

We are not VA/VE experts, but we are familiar with the principles and applications of VA/VE as top management sees them.

Our recommendations are designed to help our clients achieve significant and sustainable competitive advantages - and VA/VE often enters into the process.

RECOGNIZING BARRIERS TO ACCEPTANCE

While you, as practitioners, have a good sense of the potential inherent in the successful application of VA/VE, a big part of the problem is that most members of top management do not have that same understanding. In one sense, we see this as something of a vicious circle:

Among nonpractitioners, VA/VE is still very much misunderstood. This misunderstanding acts to limit the acceptable applications of VA/VE to narrow cost reduction efforts.

As a result, the full potential of the VA/VE technique is seldom realized. And this, in turn, reinforces the common misunderstandings of the VA/VE concept. When I say that top management and other nonpractitioners do not understand VA/VE, I am not referring to the better known half of the definition, but to the lesser known.

One side of the definition of value analysis is commonly understood:

• VA/VE is an organized approach
• For analyzing and reducing the cost
• Of specific products
• That typically are beyond their initial stages of design introductions.

The other side of the definition is not generally recognized by the uninstructed. Yet it covers some of the most important parts of the VA/VE concept:

• VA/VE programs increase the value of the product to the customer which means they focus on both cost reduction and functional improvements.

• VA/VE programs not only address current product opportunities, but also look for opportunities to define new product approaches.

Successfully applied, VA/VE can make a major strategic contribution to a company's overall competitive position.

This misunderstanding is probably most prevalent among the top management ranks where you seek critical support. Unfortunately, practitioners who have the best understanding of VA/VE's potential, bear some responsibility for the fact that the message has not come through to top management. For example (Exhibit 5):

I looked through each issue of six popular business magazines published during the past 5 years and found that the VA/VE message seldom finds its way into publications that target top management readers.

In addition, the published articles I could find on VA/VE were consistently focused on the methodology and on product cost reductions - not on applicability or the potential competitive value.

Besides diluting top-management support, lack of understanding raises roadblocks that complicate your task. These roadblocks take the form of political sensitivity and open resistance to VA/VE programs. And the nature of the VA/VE process tends to perpetuate them.

Requires a broad-based approach involving functional groups that have different motivations and priorities and often negative opinions about VA/VE.

Questions past practices and decisions, frequently stimulating defensive behavior.

Requires detailing assumptions about precise functional requirements and questioning "insurance" features and "fudge factors" - again putting individuals on the defensive.

Relies on detailed and accurate cost information, frequently challenging both current systems and current performance.

As Mr. Miles correctly observed in his original report to GE, making VA/VE work is 75 percent a people problem and 25 percent a technical problem.

It is not surprising, then, that misimpressions of VA/VE abound. I have found the following comments typical of the current underlying attitudes among various functional groups and members of top management.

Organizational unit

Common misimpressions of VA/VE

Production: "That's just common sense. We do it already. We just don't call it that. . . . What we really need is a stable design and a cost reduction."*  

Engineering: "That's looking backward. We need to put our resources on tomorrow's products. Nothing but a catchword used by staff types to justify their questioning the decisions of the people who are really getting the job done."

Marketing: "Time to market is the real issue. The design cycle is already too long. Cost reduction is manufacturing's job. Why should we be involved."

* Lawrence Miles, GE. developed VA concept in late 1940s.
CURRENT FOCUS OF VA/VE MESSAGES

<table>
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<tr>
<th>No. of VA/VE articles, 1978-82</th>
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<tbody>
<tr>
<td>- Purchasing</td>
</tr>
<tr>
<td>- Engineering</td>
</tr>
<tr>
<td>- Industrial Engineering</td>
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</tbody>
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Focus of those articles

- "How to"
- Cases
- Cost Reduction

* Not including annual special issues

LOST OPPORTUNITIES

<table>
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<tr>
<th>No. of VA/VE articles, 1978-82</th>
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<tbody>
<tr>
<td>- Harvard Business Review</td>
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<tr>
<td>- Business Week</td>
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<td>- Forbes</td>
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Potential focus

- "When and Why to"
- Competitive Advantage
- Value to the Customer

Top Management: "If we did the design right in the first place, we wouldn't need it . . . I think we have a small effort going on in one of our divisions, but that's not really a key issue in our business because . . ."

In this sensitive environment, most VA/VE programs are forced into narrow applications even though, by definition and intent, they should recognize the importance of working for more than cost reductions. (Exhibit 6)

For example, the winners in Purchasing's annual Value Analysis contest probably mirror the emphasis in most organizations focusing almost exclusively on cost-reduction goals.

Also in this environment of misunderstanding and limited application, typical project selection criteria are more focused on securing quick, documentable payback than on strengthening the products competitive position.

Typical criteria

1. Where do we have the organizational support?
2. Is the product high enough in volume to achieve at least 5:1 return on effort?

Potential problems

- Not necessarily where the effort is needed most
- Does not always reflect the full economic impact

TRADITIONAL FOCUS

SELECTED PROJECTS

EXPANDED VALUE IMPROVEMENT

PROBLEMS WITH VA/VE IN THE DESIGN PROCESS

- LOWER PROBABILITY OF SUCCESS
- LOSS OF SELECTIVITY
- CONTROL VERSUS SERVICE ORIENTATION
- CONFUSED OBJECTIVES
3. How fast will anticipated returns materialize? May bias efforts away from recently introduced products

These problems of understanding, acceptance, and focus suggest to me the need for a couple of things:

Certainly, you need to maintain, and probably increase, your efforts to communicate the potential benefits of Value Analysis - particularly outside of your own professional community.

I would also suggest that you direct some of those efforts toward achieving a more widespread recognition of the full concept of Value Analysis and its potential relevance to broader competitive issues.

In addition, in developing your VA/VE programs, I believe it is essential for you to carefully position them so that you avoid the common pitfalls and capitalize on the most significant potential Value Improvement opportunities.

I would like to now discuss this issue of positioning your VA/VE efforts, because even though the topic is frequently discussed, it proves to be a difficult problem and is often the point on which even good VA/VE programs begin to lose ground.

AVOIDING MISAPPLICATIONS AND MAINTAINING FOCUS

I have noticed a strong tendency for many initially successful VA/VE programs to lose their focus and take on activities that complicate the problems of acceptance and limit the effectiveness of the overall effort. I believe that avoiding these common misapplications and maintaining the proper focus for your VA/VE efforts is a key factor for success.

Ironically, the most common problem, in my experience, in maintaining VA/VE focus tends to arise when initially successful VA/VE programs that have limited their focus to cost reduction attempt to expand their role to the broader, or true, concept of Value Improvement. While the goal is certainly right, the typical approach to achieving that goal may not be right. (Exhibit 7)

Most VA/VE programs start with a cost-reduction focus, primarily on existing products. Their plan is to gain some early successes.

However, the opportunity to make more significant contributions to Value Improvement in this stage of the process is commonly seen as being limited.

Consequently, programs that have achieved some degree of success quite frequently begin to turn their focus to get involved earlier in the design process. (Exhibit 8)

"Working upstream" is a term that is familiar to most of you, and I believe this approach is something that is often recommended.

While expanding your efforts upstream may seem logical, I think, based on my experience, there are many good reasons that suggest this concept will seldom work very well. (Exhibit 9)

1. The inherent nature of the design process reduces the probability of achieving success with VA/VE during initial product design.

2. Because project selection criteria are more difficult to assess early in the design process, the original concept of selectivity tends to get lost.

3. In addition, higher levels of resistance are typically incurred. In overcoming this resistance VA/VE tends to take on more of a control orientation and less of a service orientation.

4. Finally, during initial design the objectives of VA/VE tend to get confused with objectives which would be better satisfied using other tools or techniques.

I'd like to briefly expand on each of these points.

Problem 1: Inherent Problems in the Design Process (Lower Probability of Success)

For the same reasons that design engineers have a difficult task in developing initial product designs that represent maximum value to the customer, VA/VE is unlikely to provide much help early in the process.

Typical problems faced by design engineers Likely Contribution of VA/VE in design stage

- Conflicting priorities Zero
- Lack of information Some help
- Conversatism Little help
- Changes in cost elements Zero
- Lack of awareness of alternatives Major contribution possible
- Habitual behavior, monument building, etc. Some help, but not without a fight

Problem 2: Loss of Selectivity

In addition, selection criteria that are typically used to identify the highest potential VA/VE projects are difficult to apply in these early stages.

Product volumes are not known.
Competitive price pressure is not established.
Customer usage patterns are not established.
Technology and material price changes cannot be forecast with much precision.

And because of these factors, the original concept of selective application becomes much more difficult to maintain.

Problem 3: Control vs. Service Orientation

As success and selectivity decline, Design Engineers, Marketers, and others typically begin to feel that the VA/VE Program is more and more of a constraint on a new product introduction process which, in most U.S. corporations, is already too long and cumbersome to begin with. To overcome this, Value Engineering Must be more and more imposed on the organization, and Tends to take on more and more of a control orientation.

Problem 4: Confused Objectives

Eventually, this early involvement and control orientation tend to confuse the objectives of the VA/VE effort with other operational requirements that could better be met by using other tools and techniques.

Let me give you three examples:

1. The VA/VE review tends to incorporate elements of productivity reviews designed to optimize products for fit with current manufacturing processes.
   - But it does so less efficiently than a simple productivity screen would

2. And it encourages an even less selective application of the VA/VE program. (Must apply to all, or most, products to achieve positive impact on manufacturing)

(Second example)

2. Also, VA/VE can tend to become more relied on to identify process improvement requirements.
   - But if does so with less than the required lead time to make significant process changes.

3. And it does a, relatively poor job of identifying external, process-driven enhancement opportunities. (It has more of a product-driven focus - e.g. VA/VE would not normally identify opportunities for improved process automation.)

3. A third example of misapplication is when VA/VE is seen as the only, or the primary, vehicle for cost-reduction activities.
   - While it is certainly true that VA/VE can be used effectively to address a broader range of cost elements than it typically considers, it will not effectively address certain problems relating to the general cost structure of the operation (e.g., uncompetitive labor rates, excessive overhead).

- Other techniques, such as Overhead Value analysis, are required.

RECOMMENDATIONS - ACHIEVING TRUE "VALUE IMPROVEMENT"

Given these common problems, how can managers achieve the full potential of the Value Analysis technique without risking the success of the VA/VE program? I suggest four recommendations/guidelines for achieving greater "Value Improvement."

Specifically, these four recommendations/guidelines are:

- Maintain the selectivity and focus of the VA/VE program on those objectives for which it is uniquely designed.

Avoid routine involvement in the initial design process and instead ensure the existence of an effective communications path back to the new product concept stage.

"Productivity screen: Defined set of design rules which optimize a product for a known manufacturing process. Adherence can be easily monitored by an individual Productivity Engineer."
Expand the scope of individual projects to focus on true Value Improvement opportunities in addition to the more traditional cost-reduction activities.

Select VA/VE projects based on their potential strategic value in addition to their financial attractiveness.

Maintaining Focus

Your VA/VE programs will be most successful when they concentrate on the objectives for which they are uniquely designed. Those objectives should be:

- **Selective** cost reduction on key products.
- Repositioning products to represent improved Economic Value to the Customer.
- Identifying potential opportunities for new products that could substantially change the cost/benefit relationships from the customer's perspective.

One way to achieve and maintain that concentration is to ensure your company has developed and uses a full complement of management tools to strengthen its overall competitive position. Such tools include:

- Product specific tools like VA/VE - focused on selected opportunities
- Productivity - focused more broadly to optimize all products for the existing processes where feasible.

General tools addressing overall cost and capability
- Overhead value analysis - examining competitive cost structure and gaining maximum value from overhead expenditures.
- A more farsighted approach to manufacturing process planning.

Avoiding Routine Involvement in Product Design

In addition, rather than getting routinely involved in initial product design, your VA/VE programs will be more successful if they maintain their selective approach. (Exhibit 10)

Focusing on maximizing product value from a user perspective.

And, where appropriate, feeding back the truly exciting opportunities for new products to the product concept stage. (Exhibit 11)

- This is an approach which requires an effective communication channel, back to marketing/R & D.
- But also an approach which avoids the more common problems associated with participation in the product design stage.

One example of this type of Value Improvement might be the case of the Fiberboard barrel. (Exhibit 12)

The end user, in this case a plastic resin manufacturer, needed a better way to store and ship its product:

- Something that made more efficient use of the shipping "cube"

St. Regis' winning Value Improvement concept was to satisfy those needs with a new product providing improved functions. In this case, a Stress Kraft pinch bottom bag.

Strategic Application

Finally, in focusing VA/VE efforts on a few projects that represent major Value Improvement opportunities, much more careful attention must be paid to the criteria used to select those projects. To achieve maximum success you will need two sets of criteria:

- Your traditionally used indicators of "high payback" projects, and
- Criteria which will help you identify opportunities for gaining a significant strategic advantage.
It is this second set of criteria that I have found missing in the majority of situations.

All of you recognize and apply criteria that reflect “high payback” situations in selecting products for a VA/VE review. These products typically have a number of characteristics in common:

They have the highest volumes/longest expected lives.

They are under intense price pressure and are having trouble achieving the cost-reduction targets necessary to stay competitive.

They were under severe “time-to-market” pressure at the time of original design.

They experienced excessive yield problems at introduction or high levels of ECO activity.

They are heavy users of materials or technologies that have recently undergone dramatic changes in pricing.

These and similar rules of thumb do help identify products that offer the greatest potential for cost reduction.

Expanding Project Scope

Identifying these kinds of value improvement opportunities will require expanding the scope of your VA/VE projects beyond their traditional boundaries ... in terms of both a customer’s full cost of ownership and the elements of product cost you attempt to influence.

Regarding the cost of ownership:

Most traditional VA/VE projects limit their focus to the cost (or purchase price) of the particular product.

But purchase price is only one element in determining a customer’s full cost of owning and using that product.

In fact, these other elements are quite often more significant in determining cost of ownership than purchase price alone and may offer you the greatest opportunities of all to differentiate your products from competitor’s products.

This is not really new to most of you. Nevertheless, it is my observation that most members of senior management do not understand that and, in most VA/VE projects, purchase price, or product cost, still gets the bulk of the attention.

A good example of how important these other cost elements can be is demonstrated by the case of a computer printer manufacturer who quadrupled sales while increasing the purchase price of his product because the improved machine represented superior value in the eyes of the customer. (Exhibit 13)

Regarding elements of product cost:

When addressing issues of product cost, all elements of product cost must be addressed in order to identify the full range of Value Improvement opportunities.

There are at least 16 different identifiable elements of product cost.

Typical VA/VE projects seldom address more than 3 or 4 of these.

Quite often, addressing the other elements of product cost can result in surprising positive effects on overall business performance. (Exhibit 14)

From this full cost perspective, major new areas of cost reduction opportunity can be pursued:

- Simplifying/standardizing products for inventory reduction/savings
- Selecting components that cut down inspections or yield loss
- Designing products for high utilization of capital equipment
- Designing for ease of selling/distribution/installation.

The second set of criteria is less commonly used. It requires that you look for opportunities to gain a strategic advantage that can make “more than a bottom line impact.” In the process, you should be asking questions like these:

For which products might an aggressive VA/VE program preempt competition from entering at all? - For example, GE’s success in modularizing toaster designs and putting intense cost pressure on newly established foreign competition.

Which products have such broad/diverse usage patterns that value analysis may reveal untapped opportunities to segment the market and establish unique segment appeal? - For example, the success of Ricoh/Savin in resegmenting the copier market with a cost reduced machine targeted to lower volume office applications.

Which products are “weak sisters” in a product line that would benefit from having strong representation across the board? (Typically not looked at by VA/VE programs)

(Continued on Page 23)
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CALL FOR BIDS

Bids are being requested from prospective host chapters for the 1986 SAVE International Conference. Send your proposals to C. P. Smith, SAVE Business Office, 220 North Story Road, Suite 114, Irving, TX 75061 by July 1, 1983.

Your bid should include your preliminary investigation into the following:

A. 1. Sampling of hotels, their names and locations
2. Number of sleeping rooms and meeting and banquet facilities
3. Current sleeping room rates (single and double)
4. Extras (pool, golf, tennis, etc.)

B. 1. Proposed Chapter Conference Committee
   Chairman (Liaison with SAVE national personnel; manage host chapter committees)
   Proceedings Publication (Solicit competitive Proceedings publication bids in local area; recommend local publisher; follow-up with publisher during publication process)
   Registration (Liaison with SAVE Business Manager; provide personnel to assist with registration and bookstore activities at conference)
   Spouse's Program (Plan/propose Spouse's Program best suited for local environment)
   Special Events (Plan/propose special events - evening extra-cost option)
   Exhibit Coordination (Organize activity to secure exhibitors from local/regional area.
   Hotel Liaison (Provide "on the spot" liaison with hotel under direction of SAVE Senior Vice President)

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International Host (Correspond with international members prior to conference to encourage their attendance; give "VIP" treatment to international attendees at conference)

Corp. Member/Government VIP Host (Corresponds with SAVE Corporate Members and government VIP's prior to Conference; VIP treatment to attendees)

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Publicity (Coordinate publicity with National campaign, write press releases for SAVE publications and other media)

C. Any other factors which might have a bearing on the final decision.

HELP WANTED

Are you interested in serving SAVE? Will you help us on our annual conferences and editing our publications? If so, please note the following functions and responsibilities of the National Director - Annual Conference Technical Programs, Editor - Proceedings and National Director - Value World and contact the Business Office or a member of the Executive Committee.

NATIONAL DIRECTOR - ANNUAL CONFERENCE TECHNICAL PROGRAMS

BASIC FUNCTION:
Develop and manage Conference Technical Program.

MAJOR RESPONSIBILITIES:
1. Establish overall conference technical objectives, in concert with national and local Conference Chairman and Vice President - Professional Development. Overall theme and technical objectives to be established 18 months in advance and incorporated into an initial call for papers issued one year in advance of the Conference.
2. Coordinate and develop with the Vice President - Professional Development, special conference programs oriented to the professional needs and advancement of the Society's members and associates.
3. Identify new technological areas of application and advancement and develop and solicit papers and programs to present these at the annual conference.
4. Coordinate with local conference committee and Editor - Proceedings to assure that:
   a) Audio visual needs for each speaker/program are provided at the conference.
   b) Speakers are adequately briefed at the Conference, prior to their presentation.
   c) Session chairmen are available for each technical session.

PUZZLE CONTEST WINNERS

CONGRATULATIONS to all the Puzzle Contest Winners. Thank you to all who entered and better luck in our next Contest. (Did you really think one of our Board Members looks like E. T. ?)

CONTEST NO. 1 - Larry Miles, Charter President - tie
    Jimmie L. Carter, CVS, Chapter 067
    David H. Stewart, Jr., Chapter 024

CONTEST NO. 2 - Bob Churchill, Vice President SouthCentral Region 1974-1978
    John D. Jackson, CVS, Chapter 067

CONTEST NO. 3 - Paul L. Howland, Northwest Region Vice President 1969-1975
    Marvin Wasserman, Chapter 049

CONTEST NO. 4 - O. James Vogl, CVS, Vice President SouthWest Region 1976-1978 and International Vice President 1982-1983
    S.S. Venkataramanan, International Member

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PRES. RUSS BRANNEN
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FELLOW S.A.V.E.
This year’s conference theme “Value for You” implies more emphasis placed on you as an individual, as a value professional, and as a member of society. Past conferences have had excellent technical presentations covering a myriad aspects of Value Engineering plus tools and techniques that Value Engineers might use to become better at what they do. This year, there is expanded content aimed at providing opportunities for us to grow as individuals.

“Value for You”, offers more alternatives and source material to help increase your creativity and help you develop a more creative environment. You will learn more flexibility in your approach to problem solving and more ways to help you develop and sell your ideas to others. Included will be material to help you work with people: conflict resolution, team dynamics, communication and facilitating skills. Technical papers in the areas of government, industry, and construction will help you grow in your technical expertise.

Two new categories particularly related to the conference theme “Value for You”, have been added to the program. The Spectrum of VE includes applications of VE techniques in a wide variety of settings from a one-man value program going it alone in a small company to Value Management as an integral part of an organization’s planning and day-to-day problem solving. Spectrum will expand your awareness of the capabilities of the VE discipline and help you make your program better fit your organization.

Outreach - Other Worlds brings in new material by presenters from other creative disciplines. Alternatives for personal and professional growth in the areas of human relations, leadership, and creativity will be offered, mainly through hands-on workshops. Personal growth (Value for You) yields professional growth as you attend programs to increase your flexibility and fluency in facilitating the creative people doing work surprisingly similar to VE in areas largely untouched by VE.

“Value for You” also means opportunities to take on new challenges. A common goal shared with the Outreach presenters is that of developing a society in which the quality of life and the dignity of each individual human being is actualized. This goal is typified by the conference theme “Value for You”.

Send in your registration to the SAVE Business Office and make your hotel reservations to insure that space will be available for you. This will be one of the most interesting and fulfilling conferences we’ve had. We want to see you there. Come join us and bring more value into your life.

Sincerely yours,

Don Lenef, CVS and The Chicago Metropolitan Chapter SAVE Conference Committee wishing more value for you in ‘83.

(Accompanying photo courtesy of The Chicago Convention and Tourism Bureau, Inc.)
SUMMARY

To summarize, I have talked about a number of elements that I consider essential to successful, significant Value Improvement programs.

VA/VE is not as well understood, particularly by top management, as you might think; continued emphasis on awareness outside your community and understanding of the total value concept is needed. In order to avoid the most common pitfalls facing VA/VE programs, your efforts must be carefully positioned to focus on those objectives for which VA/VE is uniquely designed.

To capitalize on the full potential of VA/VE, individual projects must address all elements of the Value Improvement opportunity - particularly those relating to the customer's full cost of ownership and to the elements of your own product cost that go beyond the bill of materials.

To maximize the success and significance of your efforts, your programs should continue to be highly selective - reflecting potential opportunities for strategic advantage as well as potential financial returns.

NEW YEAR RESOLUTIONS

With the birth of a new year, each of us tends to establish one or more New Year resolutions. These we try to carry out, to the best of our ability, for the benefit of ourselves and our associates.

Based on this concept I've noted below, for your consideration, a number of resolutions that you may want to adopt.

I resolve:

- To become more actively involved in the Cost Improvement Activity, thereby assisting myself, my fellow employees and the Company to prosper.
- To encourage and assist others to participate in the Cost Improvement Activity, thereby greatly improving our Company's competitive position in the world market.
- To be sure that no idea or recommended change goes unsubmitted.
- When necessary, to assist my associates in the development and submittal of their ideas.
- To share in the pride of accomplishment that comes from being an active participant in the finest Cost Improvement Activity in the world.

C.R. Walter / A.E. Mudge

CALENDAR OF EVENTS

SAVE-NATIONAL

MAY, 1983

1  Due for 1983-84 Fiscal year due at Business Office
15 Deadline for July Interactions and July/Sept. Value World
15 Deadline for Cancellation of Conference Registration
16 Deadline for Ladies Program Registration
16 Deadline for Optional Evening Function Registration
22-25 1983 SAVE INTERNATIONAL CONFERENCE, Chicago, IL

JULY, 1983

1  Dues not paid are 60 days past due
15 Deadline for September Interactions

AUGUST, 1983

1  Dues not paid are considered delinquent
15 Deadline for October Interactions and Oct/Dec Value World
CHAPTER MEETINGS

001 - Paul Revere - Contact President William Santos 617/543-8750, Ext. 2996
May 5 Speaker TBA, Applying Value Engineering to Procedures, Paperwork
June 4 Ladies Night and Installation

027 - Chesapeake - Contact President Frank J. Elia 301/824-5483
May Juni Chapter Social

044 - Central Indiana - Contact President R.F. Homeier 317/267-2276
May 19 Speaker, Pilot, Goodyear Blimp, Installation of Officers

048 - Chicago Metropolitan - Contact President Robert L. Redford 312/887-2146
May 22-25 Host International Conference
June 10 Year End Social

050 - Twin Cities - Contact President Leo C. Ryan 612/296-2743
May 19 To Be Determined
June 16 Spring Social/Honors and Awards Banquet

055 - Wisconsin - Contact President David DeMars 414/671-2000
May 4 Miller Brewing Company, Plant Tour - Automated Material Handling & Shipping

056 - Northern Ohio - Contact President Rafael R. Dominguez 216/329-9386
May 11 Speaker, Jack Blau, Energy Savings

067 - Dallas/Fort Worth - Contact President Ginger Willingham 214/357-0870
May 10 Speaker, Joe H. McFatter, Jr., Computer Facilities/Data Processing
June End of Year Social

079 - Portland - Contact President Fred C. Gast, Jr. 503/222-1917
May 17 Awards

OTHER ITEMS OF INTEREST

AACE, Metropolitan New York Section
May 12-13, Show & Seminar on Estimating, Planning, Scheduling and Cost Control, Computer Systems, Sheraton City Squire Hotel, New York City, Contact: Dana Colban (AACE), C.B.S. Inc., 1211 Avenue of the Americas, New York, NY 10036 212/975-2943

Institute of Industrial Engineers, 25 Technology Park/Atlanta, Norcross, GA 30092 404/449-0146
May 20-26, "1983 Annual Industrial Engineering Conference and Show", Galt House, Louisville, KY
June 12-24, "Material Handling Management Courses", Airlie House, Airlie, VA
June 13-14, "Japanese Manufacturing Techniques" productivity seminar, Hyatt Regency Atlanta, GA (1.4 CEUs)

Federation of Materials Societies, 345 E. 47th St., New York, NY 10017
May 10-12, Rosemont, IL, Seventh Annual Heat Treating Conference/Workshop, Contact Meetings Manager, American Society for Metals, Metals Park, OH 44073 216/338-5151
May 16-20, Dallas, TX, International Conference on Corrosion Inhibition, Contact Meetings Manager, National Association of Corrosion Engineers, P.O. Box 218340, Houston, TX 77218 713/492-0535
June 26-30, Sao Paulo, Brazil, Second International Materials Conference. Contact Telex No. 0113530 INPEBR
July 11-15, Cambridge, MA Corrosion: The Environmental Degradation of Materials, Contact Massachusetts Institute of Technology, Room E19-356, Cambridge, MA 02139

A SAVE SERVICE TO MEMBERS

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