Brainwork:
SOME THOUGHTS ON THINKING

Certification:
WHAT IT MEANS TO MANAGERS OF HUMAN RESOURCES

Alternatives:
MASS TRANSIT AND COST REDUCTIONS

Awareness:
A WAY TO ENSURE VALUE'S SURVIVAL

Participatory Management:
IS IT THE NEXT STEP FOR CORPORATIONS?
And, If So:
SUGGESTION SCHEMES AND THE PARTICIPATION GAME

INA Corporation Chairman Ralph S. Saul (right) presents check to Robert E. Mullock representing largest employee suggestion award ever made by the firm. For details, see page 5.
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The American Revolution Generation of Genius

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SAVE ANNOUNCES- - -
A 1976
COMPETITION FOR ALL MEMBERS
SPONSORED BY THE JOY MANUFACTURING CO.

The Joy Manufacturing Co. is again sponsoring two awards available to SAVE members, to be known as:
A. The Joy Manufacturing Co. Recognition Award of $1,000.
B. The A. E. Mudge Award of $500.
Both awards also include a suitably engraved Silver Bowl.

Requirements
1. The submittal of a paper approximately 1500 words in length, double spaced (with artwork is suitable) describing what the submitter believes is an outstanding example of cost effectiveness in Value Engineering, implemented in the submitter’s company (or organization) during the year 1976. The first page should contain the title, company name, author’s name, and (short) author’s biography.
2. Originality, innovation and results obtained will be key elements considered by the judges. The amount of dollars saved will not be a criterion to equalize the size difference of various companies represented.
3. The subject can apply to any aspect in the Value Discipline; a simple project, a motivational technique, a new approach, etc.
4. Multiple entries can be submitted; with one subject topic per entry.
5. A statement by a company officer should accompany the entries, attesting to the validity of the subject described.
6. Submitters must be members of SAVE at the time of entry.
7. All papers submitted will become the property of the Society and they reserve the right to publish or otherwise distribute the papers as they deem wise.

Deadline
Three copies of each paper must be submitted and received on or before January 31, 1977. All papers for this competition to be mailed to the SAVE National Business Office. The envelope should indicate “Joy Recognition Award.”

Judging:
The judges will be:
1. Jerry Kaufman, Immediate Past President - SAVE.
2. A. E. Mudge, Vice President, Joy Manufacturing Co.
3. Jimmie L. Carter - President - SAVE.

Winners:
The winners will be notified in advance of the Annual Conference in the Spring, 1977, and it is hoped they will be present to read the winning papers to those attending the conference.

Winners will receive their awards from J. W. Wilcock, President, and A. E. Mudge, Vice President, of Joy Manufacturing Company, at the Annual Awards Banquet.

Note: 1. Employees of Joy and the Society’s Board of Directors will not be eligible to compete.
2. It is anticipated, for these awards to become an annual event, that both the number of submitted papers and their continued acceptable quality level will be maintained.
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EDITORIAL POLICY: PERFORMANCE Magazine umbrellas those performance factors which improve the competitive advantage and excellence of American Consumer/Defense products and services for the markets of the world. PERFORMANCE is dedicated to the effective exchange of innovative technology and ideas as they relate to quality, reliability, safety, maintainability, cost reduction, value engineering, life cycle cost, management improvement, cost-to-produce, standardization, cost engineering, integrated logistics support, defect prevention, suggestion systems, motivation and productivity.

Contributions in the form of articles, photos, letters to the editor, etc., are welcome. Editorial policy dictates the right to edit or reject any material submitted for publication. Views and comments of contributors do not necessarily constitute the endorsement or opinion of the American Society For Performance Improvement, the Society of American Value Engineers, the National Association of Suggestion Systems, nor that of the National Property Management Association.

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INA Corporation Chairman Ralph S. Saul (right) presents check for $2,500 to Robert E. Mullock for his proposal to establish a company integrated delivery system. Award was the largest in the two-year history of INA Corporation's Employee Suggestion System.

INA PAYS $2,500 FOR SUGGESTION

The largest award in the two-year history of INA Corporation's Employee Suggestion System has been presented to Robert E. Mullock, director-Operations Services, for his proposal to establish a company integrated delivery system. INA Chairman Ralph S. Saul presented Mullock with a check in the amount of $2,500, representing ten percent of INA's anticipated savings in the first year of implementation.

Designed to provide faster and less costly mail and freight delivery, Mullock's proposal involved purchasing a van and hiring a driver to make daily deliveries between the home office in Philadelphia and eight of the company's locations in Pennsylvania, New Jersey and New York. Mullock cited spiralling postage rates, as well as substantial increases from private carriers, as the basis for developing his suggestion.

In making the award Saul commented, "The INA Suggestion System has proven a successful means for channeling the ingenuity and creative thought of employees. It has provided the means to effect cost savings, increase productivity, make our service and products better, and improve working conditions and relationships."

Since implementation of the Suggestion System in the Fall of 1974, INA has awarded more than $20,000 to its employees, reflecting a tangible savings to the company of $144,460.

DATA PROCESSING SALARIES UP LESS

Salaries for data processing employees in the United States rose an average of 5.7 percent from June 1975 to June 1976; a slower rate of escalation than the 1974 to 1975 period.
BECAUSE OF THE BREEZE THAT BLOWS

An acquaintance of mine was telling me one day of his intense desire to return to a certain section of New Mexico which I had envisioned as being somewhat barren and lacking.

He concurred that this was true.

Following up, I surmised that his desire was due to birthright — a love for the hometown.

“No,” he responded. “I was born and raised in Pittsburgh, moving to New Mexico as a result of a job assignment.”

“Why then,” I queried, “your fondness for this seemingly unspectacular patch in God’s great universe?”

“Because,” he said. “Because of the Breeze that Blows.”

I can understand that.

A job in itself would become rather mundane, were it not for the occasional breeze that blows. I’m not speaking of air currents and velocities; I’m speaking of the highs — the serendipity happenings that seem to make it all worthwhile.

The boss, saying with sincerity, “Thank you.” Or, perhaps, after a super blunder, “That’s alright, To Err is Human.”

My personal refreshing breeze is in the form of certain industrious co-workers; real, live, flesh and blood individuals, who not only perform their work seriously but take an active role in reducing costs and improving output as well.

Take Jack, for example.

Jack is an assembly mechanic who also happens to be an elected union official. And a very good one. Not a spineless Jack, subserviant to all company desires; nor a messenger boy, acquiescing to all his constituents bellyaches. Jack is a straight shooter.

He has distinguished himself by support and active participation of these programs that do, in fact, reduce costs and foster job security. He originates cost-savings ideas and is a member of the action committees that analyze and implement the valued ideas. He further participates in an Assembly Productivity Committee, which seeks to facilitate assembly efficiency by identifying constraints, such as inadequate methods or design shortcomings. Jack’s long-range perspective is that an efficient company is a competitive company, a healthy company; one that is likely to be around as long as he needs a job.

Not bad thinking.

We need more Jacks.

We need more refreshing breezes that blow. 

1975 increase of 7.1 percent, according to the twelfth edition of A.S. Hansen’s Weber Salary Survey on Data Processing Positions. The 1976 survey included salary data from 1,150 data processing installations reporting on more than 83,000 individual employees.

Managerial personnel within the data processing function fared better than the nonmanagerial group; their salaries went up an average of 6.8 percent. The average corporate manager of data processing experienced a 9.5 percent pay raise and now receives an annual salary of $32,396.

The Hansen survey also revealed that the status of the data processing function has increased, as reflected in findings relative to the top EDP manager position; forty percent are company officers; thirty-three percent are vice-presidents; fifty percent are eligible for bonus or profit sharing plans; and approximately twenty-five percent participate in stock option plans.

Today, the typical incumbent of the top EDP position earns forty-one percent more than the 1970 average of $19,760, and the chances of this individual participating in key management forms of compensation, such as bonuses or stock options that are layered on top of salary, are rapidly improving.

EXTENSION COURSE IN VA/VE

A new independent study course, “An Introduction to Value Analysis and Value Engineering,” is being offered by the University of Wisconsin-Extension, Department of Engineering. The course consists of fifteen lessons divided into three sections: an organized approach to good value, the management of value analysis activities, and advanced application and techniques.

L.D. Miles’ text, Techniques of Value Analysis/Engineering — second edition, a study guide and project are utilized in the course. Cost, including text and service fee, is $106.50. Additional details are available from Thomas J. Snodgrass, CVS, Department of Engineering, University of Wisconsin-Extension, 432 North Lake Street, Madison, Wisconsin 53706; telephone 608/262-2061.

JAPANESE RENEW PRODUCTIVITY SYSTEM LICENSE

Science Management Corporation (Amex) has completed negotiations and reached agreement with the Japan Management Association for renewal of an exclusive license for application of the Work-Factor system in Japan. A proprietary system developed by the WoFac Company, a division of Science Management, Work-Factor was first introduced to Japan in the early 1950s and is credited with a major role in the dramatic post-war growth of Japanese productivity. Now used in virtually every industrial nation.
HIGH KEY VE AT RANCO
Not always so, but R.W. Bartholomew, manager of Value Engineering, Ranco Controls, Columbus, Ohio, reports VE on a high key beginning its eighth year.

Following a good primary year with cost savings returns of five to one, the program slipped due to major commitments of priority elsewhere. A management change in 1974 redirected the efforts toward VE with the result that one major project during 1975 yielded a seventy-one percent reduction in costs.

In addition to cost savings, many side benefits were realized, such as improved performance, standardization of parts and better wear properties on moving parts.

VE TEAM STRUCTURE
One should avoid VE team structure based on emotion, gimmicks and oratory rather than solid management principles says Arnold Skromme, senior division engineer, John Deere Harvester Works.

Summarizing the results of several years of VE team experience, Skromme highlights the following fundamentals of a sound team concept.

Active management support.

Five-man teams, all peers.

Original product designer as team chairman.

Meetings free from interruptions.

VE trained team members.

Scheduled field trips and vendor visitations.

THIS MONTH'S TOPIC
How Has The Value Manager's Job Most Changed During The Past Decade?

CHANGING STRATEGY — Having been a former industrial engineer and then a market manager for about thirteen years, I felt I was a pretty good salesman and did a lot of selling. I've found it takes a lot more selling in Value Engineering to your own people. It takes soft sell and hard sell.

There is no formula for it, you just have to use your best professional judgment. Value Engineering should be more closely associated with engineering, where costs can be prevented in design.

We are moving our efforts into the initial design stages on our products. Our first attempt on a new product has been most encouraging: A potential ninety-seven percent less than the initial design.

This has been accomplished by starting with good cost estimates, using the techniques of function evaluation, FAST diagramming, cost-expenditure, and brainstorming.

R.W. Bartholomew
Ranco Controls Division

CHANGING TRENDS — Changing trends in Value Management in a more general way relates specifically to one's effectiveness. If anything, the science of value engineering has become more exact and therefore requires more attention to details. In the old days, Seat of the Pants decisions forced elimination of functions. Savings were created by brute force. Today, however, most value engineering programs are highly organized with methodologies approaching that of an accountant or personnel officer.

The real question, of course, is the credibility of savings vs the intangible platiitudes of value engineering. One approach is direct tangibility of cost benefit or else! The other approach is isoteric by emphasizing the management technique, management understanding and communications skills among administrators. Perhaps the modern value manager should work to maintain balance of both qualities.

John Hollar, Jr., CSSA
Harrisburg, Pa.

NEXT TOPIC
Should The Value Manager Be A Lion Or A Lamb In Performing His Job? —
Tom King, SAVE Editor

SAD NOTE
Sorry to report the passing of Edward D. Heller, long time member of SAVE, author of the book Value Management, and twice winner of SAVE Best Paper of Year Award.
Thoughts on Thinking

By H. Keith van Heerden

In handbook after handbook on the subject of value analysis and/or value engineering one encounters the famous Job Plan. This varies from the five basic steps of 1. Information Phase, 2. Creative Thinking Phase, 3. Evaluation and Development Phase, 4. Report or Recommend Phase, and 5. Action Phase, each with their respective subdivisions. Some practitioners have expanded this to as many as eleven major phases of Job Plan.

In South Africa the tendency has been to get away from the Job Plan approach. Perhaps this is because the disciplines have been applied less to hardware design and manufacture problems, and more to open-ended major problem areas in a wide spectrum of business and industry. This has happened more through circumstance than by design, and the results have been so good as to be beyond the wildest dreams of the most dedicated value engineers.

At this stage, let it be emphasized that these paths followed have got us away from the term value analysis as not giving an understanding of being a complete discipline — in other words, leaving someone else to find a solution to the subject studied. In the same way value engineering has been largely abandoned because of the engineering connotation — “Look, it would be no good to us, we are not Engineers.” Instead, and quite rightly so, the term value management has come to stay, and any value engineer worth his salt could not possibly rest content until every part of the organization to which he belongs is managing value in everything they do, and more especially in the way they think.

In common with the rest of the world, South Africa has been experiencing severe inflation problems, and there have been the usual exhortations “to work harder,” “be more productive” and especially for “people to remember their responsibilities” if the country is to beat this threat. Sadly though, if it has been said at all, no one mentions what is without doubt the most important anti-inflation weapon; namely, to make one’s thinking more effective. For without improved thought we could easily be working harder, etc., but at the wrong things.

And it behoves us to take a look at our thinking in respect of value analysis, value engineering, value management or whatever you wish to call our common approach to problem solving.

Normal Thinking

However, how many of us have ever taken the trouble to think about our thinking? More often than not we only think we think, when in fact we are only reacting. This applies even to blindly following our Job Plan, without trying to understand fully the thinking philosophy involved.

A useful analogy to use here is that each of us carries around an imaginary rear-view mirror. Encounter a problem, and the first reaction is to check this mirror for a focus on the same or some similar problem in our past experience. If successful, the problem is as good as solved; if not, we go about checking some other person’s rear-view mirrors for the same purpose. In either case, if successful in picking up the desired focus, we have saved ourselves the trouble of thinking. In solving present-day problems in this way, we should bear in mind that we are doing so in the context of conditions, parameters and factors which probably no longer apply, or which have undergone subtle changes in the interval. In truth, we have only reacted. Thinking is one of the most difficult things to get people to do, at any level.

In order to improve our ability to think, it is necessary that we develop an understanding of our normal mental processes, their strengths and weaknesses. Just as we are able to use our motor cars effectively without knowing the detail of their working, but by having a basic understanding of the general principles involved, so, too, is it possible to understand thinking, and thereby use our brains more effectively. It stands to reason that continued practice is essential.

We human beings are very much pattern-orientated. Conformity to orderly patterns is vitally necessary for the welfare of our modern society, and indeed for the survival of the individual in the society. The stark death-toll on the roads, mainly from failure to adhere to the established pattern of road-usage, illustrates this.

We have built up a clear pattern in our behavior of thinking when solving problems, which works something like this (based on work done by Prof. Wallen, University of California). This applies to individuals and/or groups.
Someone, let's say the head of a department, realizes the need to do something about a problem. He gets his people together to examine the problem — Don't let anyone else know — they'll think we don't know our job — ensuring a narrow attack. A statement of the problem is made.

Having got this far someone will offer a solution.

Almost invariably the solution will be judged out of existence — based on experience.

Now a prevalent phenomenon occurs. A guillotine comes down on the thinking, effectively cutting off the development of any further ideas.
Note should be made that under these circumstances there is no way that a new and revolutionary approach to the problem is going to emerge to find a really creative solution to the problem.

Further, way-out ideas are frowned on and have to be practical above all else. It is highly unlikely that anywhere near enough ideas, by our value standards, will be generated.

In fact, the whole patterning process of their minds will have switched the group into seeing the problem as they think it should be seen or the way they are in the habit of seeing it. This without having had a chance of properly analyzing the problem.

It is not surprising, therefore, that in some eighty percent of the major problems what is brought to the conference table is the effect, and not the cause of the troubles. It is axiomatic that if one is able to define the problem at the outset the solution has been pre-empted.

In his books on the subject of Lateral Thinking, Dr. Edward de Bono has shown that the thinking process can be conveniently divided into two phases: 1. The concept or idea phase; and 2. The processing or logic phase.

For thousands of years our thinking processes have concentrated increasingly on the value of logic, and logic has become our modern thinking-idiom.

Man has become so good at it that he has brought into being the computer, the perfect instrument for applying logic, but if the concept is wrong logic is useless.

Again and again Dr. de Bono shows that in order to develop a creative solution to a problem, one has to get different entry points into that problem, that one has to see it differently. We know the difficulty humans have in just seeing things differently. Our environment, experience and learning dictate that we see.

In fact, people can be at the same point in time and place, but be seeing things differently — such as the ship-wrecked sailor and the lost and thirsting prospector reaching the beach of a desert coastline.

This goes even further. In experiments conducted at the University of Kansas, as many as sixty-nine percent of subjects specifying that they were looking for a piece of string were unable to see it, although it was in full view hanging a mirror to a nail in the wall. Somehow, by its useful function of supporting the mirror, the string becomes lost to perception or psychologically unavailable. The moral: How many useful bits of string are lost to us and our organizations in our daily work?

Value Management Thinking

It is with this in mind that in our Think Plan we stress the need for a concentrated analytical phase of thinking. This combines to bring together all relevant information, plus the ability to see in different ways every facet of the subject under study. Our basic tool of function definition backed up by numerical function evaluation, applied by a structured multi-disciplined team, satisfies this need adequately. All in all, this develops a sound understanding of the subject.

Next, we satisfy the demands of lateral thinking by using applied creative thinking to selected functions. Once more, this greatly expands the number of ways of looking at the subject, providing still more entry points. This is our normal creative thinking phase.

These two phases then add up to Dr. de Bono's concept or idea phase.

Lastly, there follows the judicial thinking phase, where we may use logic to our hearts content, but conscious of the need of continuing the process of combating the prejudices built up through our experience and normal learning processes.

A model of Value Thinking follows:

A. Analytical thinking phase — Having realized the need to do something about a problem, a team is structured to attack it — different disciplines and departments to surround the problem and broaden the attack. As the projects dealt with are invariably large, at least seven and preferably not more than ten people comprise the team.
The problem area then is analyzed according to function.

The functions fall conveniently into the following categories.
Basic or Essential functions.
Secondary functions, which may be further broken up as follows:
  a. SECONDARY, but supporting by virtue of the design approach used.
  b. PARASITIC, doing nothing but adding cost.
  c. ANTI-FUNCTIONS, which erode basic values besides adding cost, e.g., in a gold recovery plant “Lose gold” would be a very anti-function.

In most problems it is advisable to use numerical evaluation of function to establish objective order of importance, eliminate prejudice, and develop understanding of the functions listed.
Cost and worth may now be added, if desirable. In major problems, it is often more convenient to apply costs only at the evaluation stage and often to ignore worth altogether.
This completes the analytical thinking phase, which we all recognize as the information phase.
B. Creative thinking phase — This is in effect brainstorming applied to selected functions — sometimes basic, sometimes secondary supporting, and always to the elimination of anti-functions.
C. Judicial thinking phase — This should be applied bearing in mind our natural tendency to lock onto personal prejudice. However, such prejudice has been largely dissipated by what has gone before — and by this time there will invariably be ways opened to creative and even revolutionary but practical solutions to the problem/project under study.
Thus, you can see that the Think Plan has expanded, though simply, on that put forward by Dr. de Bono and could be represented thus:

FUNCTION ANALYSIS  NEW IDEAS  PROCESSING

In this way we ensure proper attention to the concept phase, and even enhance the application of logic by having a much greater base on which to operate.
No more can the lack of barriers block access to creative solutions that elude us when we apply only logic. Dr. de Bono describes it as driving down the road at night with an open road ahead lit up by the headlamps; the open road represents the obvious solution, while a better solution may lie up a side track.

In effect we stop, as a matter of discipline, and prospect in all directions with the function analysis followed by the creative thinking.

It becomes infinitely easier to turn this three-step thinking formula into a new and beneficial habit of thinking — not only in attacking major problems, but in almost everything we do. It has become apparent to many in South Africa applying this principle in general, that they are able to outgun died-in-the-wool users of the old think school. And more often than not is the exclamation: “It’s so obvious, why couldn’t we have thought of it before?”
Results

They say the proof of the pudding is in the eating. Let us look at some of the results from value management training workshops which last just five days.

Mining shaft layout at depth — One of our largest mines was faced with the problem of opening up a large area of reef from depths of 8500 feet and 9500 feet below surface to depths of 9000 feet and 11000 feet, respectively. They used a project team to plan the best possible shaft system. They came up with a plan to use two sub-vertical shaft systems at a capital cost of $15.25 million. The project was then submitted to a value management training session lasting one week, using the original project team, and adding a few additional disciplines such as ventilation and rock-mechanic specialists.

It is interesting to note that on Wednesday morning at about 10:30 a.m., the project leader expressed concern that nothing had yet been accomplished. The group was still in the process of analyzing the problem, while he was already looking for solutions, as his boss had been promised a formal report on Friday at 2 p.m.

Needless to say, the presentation was made at the appointed time. Only three questions were asked by higher authority, and one of two recommendations put forward were adopted forthwith. Capital expenditure proposed was reduced by a minimum of $3.5 million, while expected operating costs were reduced by an estimated $350,000 annually.

In comparing the old think with the new think in this case, the project team had initially considered only three alternatives. In the value workshop sixty-eight alternatives were achieved by the end of the creative thinking phase. These were refined to fourteen possibilities which were looked at in detail, and from which two recommendations were made: one being high capital-low operating cost; the other low capital-high operating cost. The first of these options was adopted. Furthermore, it was noted that the new think catches or "replaces" the old think without doing-it-yourself that the new think becomes a habit through a whole organization, we must employ the best brains in the country. (But are they using them?)

However, having come in contact with the teachings of Dr. Edward de Bono and combining key points from these with those of VE Job Plan, and propagating a new approach to thinking, and an easily proven approach at that, with a by-product being savings, very little progress was made in South Africa in propagating its use. You know the answers one gets: "We do not need this type of training; we employ the best brains in the country.” (But are they using them?)

There can be no doubt that best results are achieved when one is directly involved. When one relates this information to that contained in a paper written in May 1965 and presented to the Institution of Mechanical Engineers (USA) by H. Davies on "Experience with Value Analysis as working Tool," you will see what I mean. He says, "...and there is some evidence the technique will soon be adopted in Japan.”

This indicates that you in the US have by and large kept looking at it as a tool, something mechanical, to produce savings, whereas it would appear to have become a way of life, a philosophy, in Japan.

There must be significance in the fact that while trying to sell the discipline as a technique or tool to generate savings, very little progress was made in South Africa in propagating its use. You know the answers one gets: "We do it anyway, it’s part of the job,” and “That’s what we’re paid to do anyway.” I heard these in my first visit to the US in 1967, and I have been hearing them in my country. Even to the extent that “We don’t need this type of training; we employ the best brains in the country.” (But are they using them?)

In the latter half of 1975, one organization, in a series of three workshops, looked at its corporate structure, its management function and its advertising policy. It is importing and merchandising certain household appliances not manufactured in this country.

The studies led to a well-defined program of problems to be tackled and their order of importance. While no attempt was made to cost workshop results in terms of cash, great importance was laid on the soundness of thinking that went into the decisions taken. Not being a large organization, the result is that the total top management team throughout the country has participated in and understands the new thinking. The company president has, himself, led subsequent project studies, while a number of his senior staff have done the same. There is no shadow of doubt that this organization has gained a tremendous advantage over competitors in that they have been able to take the devaluation of the national currency, in late 1975, in their stride. In fact, they had achieved a positive payback within three months of the first training workshop.

Similar experiences have been had in fields covering computer programming, accounting, timekeeping and production control exercises.

General

It is significant that the only areas where the principles of value management have taken effective root and flourish is where top management has been directly involved. Our experience has been that it is almost impossible to tell people how the discipline works, and it is only through doing-it-yourself that the new think catches on. To relegate the discipline to a department set up for applying it is to gain only a small fraction of its potential value.

I see evidence of this when one reads Commander Rossman’s comments in the November-December 1972 issue of PERFORMANCE Magazine. He was a visitor to the Society of Japanese Value Engineers’ Annual Congress in October of that year. “Almost 700 delegates attended” and “the VE/VA disciplines are totally accepted by management and government in Japan” are a few of the points he made. When one relates this information to that contained in a paper written in May 1965 and presented to the Institution of Mechanical Engineers (USA) by H. Davies on “Experience with Value Analysis as working Tool,” you will see what I mean. He says, "...and there is some evidence the technique will soon be adopted in Japan.”

It is in this field at the highest level that some of the most valuable returns in applying value management lies, both in setting direction and objectives and also in identifying and defining problem areas that need attention.

The very simplicity of the basic approach illustrated, coupled with the practicality and universality of its application, makes value management a must in every conceivable area of business life.

There can be no doubt that best results are achieved when one is directly involved. When one relates this information to that contained in a paper written in May 1965 and presented to the Institution of Mechanical Engineers (USA) by H. Davies on "Experience with Value Analysis as working Tool," you will see what I mean. He says, "...and there is some evidence the technique will soon be adopted in Japan.”

This indicates that you in the US have by and large kept looking at it as a tool, something mechanical, to produce savings, whereas it would appear to have become a way of life, a philosophy, in Japan.
What Professional Certification Means to the Manager of Human Resources

By F. Cecil Hill

The last ten years have produced a profound change in our attitudes toward those who possess expertise in managing our human resources. This is acknowledged in the way we operate our organizations, as well as in periodicals and other literature. The February 1976 issue of Fortune Magazine, for instance, points out that organizations are seeking managers who possess a background and successful experience managing that major asset: Human Resources.

This interest, which is more than the casual interest of the past, is found in the government as well as the industrial sector. The movement is discussed in seminars, articles, books, case histories, etc. The interest is not limited to manufacturing or production-line enterprises, but is also evident in service industries and engineering companies.

These organizations are not merely seeking experts in administering the cosmetic human relations or motivational programs of the sixties. This concern for people appears to come from a real change in management philosophy. Numerous companies are investigating, innovating and reorganizing in order to better utilize the untapped portion of their human resources.

Managers, because of the scarceness of capital dollars, have become acutely aware that there is a vast, untapped potential in the people that are already on board. Managers who gave token acknowledgement to statement that “people are our most important asset” are suddenly concluding that people really are just that. They have decided that there is a need to better understand human productivity, or contribution to goals, as a supplement to the contribution of capital.

Managers are becoming sophisticated enough to know that terms like human motivation, productivity, or job enrichment, and the other commonly used names, are really descriptive of just one small segment of the whole field. They seek people who have a broad perspective and are good managers, but they must also have the ability to develop and utilize human resources. It is, admittedly, proven difficult for many managers to decide exactly what traits are required, and what type of experience and education is needed.

Therefore, ASPI, because of its close association with people in the human resources field, is attempting to provide a method for identifying and training people in the field. Our professional development program is geared to accomplish this. ASPI initiated its professional certification program in May of 1976, after several years of development. The stated goals of the program, which certifies Human Resources Managers, follows:

A. To raise the professional standards and assist with the total management and development of human resources by providing professional recognition by their peers to practitioners who, in fulfilling prescribed standards of performance and conduct, have demonstrated and maintained a high level of competence and ethical practices.

B. To identify practitioners with extensive knowledge in HRM and the ability to professionally apply the principles of Human Resources Management.

C. To develop and implement an ongoing program whose goal is the improvement of individual Human Resources Management skills and professional development.

D. To add to and develop the knowledge in the area and provide standards of conduct for the practice of Human Resources Management.

As is true with any certification program, the program offers a service to those managers who wish to specialize in the field. Its primary service is the system that certifies the holder has fulfilled certain requirements that are known to those who seek managers in the field. A list of certified members is published, and free referral system is provided.

In addition, the professional development program will continue to provide educational material and assess the certification requirements.

Those who are interested in obtaining the information brochure may obtain it by writing F.C. Hill at Hughes Aircraft Company, Building 20, Mail Station X-125, Culver City, California 90230.

I sincerely urge all ASPI members who qualify for certification as professional Human Resource Managers to submit their applications to the certification secretary at the earliest opportunity.

A lot of effort has been directed at the certification program to ensure professionalism, and to provide industry and government with another means of identifying individuals qualified to fill current and future requirements.

Among the future plans for the program will be specific instruction sessions that will provide information to future professionals that need additional training to meet the qualification requirements. If you have any questions regarding the current system or plans for the future, or the names of those certified, these should be directed to F. Cecil Hill, vice-president Professional Development and chairman of the certification committee. On behalf of the ASPI membership, I congratulate Cecil Hill on the launching of this program and commit our wholehearted support to its future growth. — W. Michael Richardson
R.W. JAMISON is manager of Value Analysis at the John Deere Dubuque Works, Dubuque, Iowa. Attended Iowa State University; twenty-eight years with John Deere; thirteen years in industrial engineering management; five years as value analysis manager. Past-president of the Iowa Chapter, SAVE; past-president of the American Institute of Industrial Engineers. Has the responsibility of formulating and developing value engineering programs, directing and coordinating value engineering training at the Dubuque factory.

VALUE CONSCIOUSNESS
a plan for survival

By R.W. Jamison

Introduction
Any business is only as successful as its employees are able to make it so, but until an atmosphere, climate and environment are created in which high and unnecessary costs are acknowledged, no form of profit improvement will survive. Value consciousness does not develop as a result of a single program. Continual evidence is necessary, showing cost savings results and recognizing those employees responsible for good results.

Improved Cost Effectiveness
There are many ways cost effectiveness can be improved. New methods, materials, machines and processes are being developed every day. Much publicized are new management, engineering and manufacturing techniques. One technique we have found to be effective - one that has broad coverage and cuts across all lines within the organization - is Value Analysis. Its basic concept and function approach to the everyday job - the concern for value or value consciousness - I'm convinced, cannot be matched for overall effectiveness by any other similar approach. But, value studies alone, whether on currently manufactured products, new products under development, or procedures are not enough. It does force identification of unnecessary costs. An active program may show a return on investment many times over. However, these programs must be supplemented in the long run by other efforts.

We at the John Deere Dubuque Works do not profess to be models in this respect, but we have several programs and
activities we feel contribute much to this desirable quality of cost consciousness.

A Value Analysis Program

Contrary to most large companies, John Deere does not have a corporate Value Analysis staff, although nearly every factory has a VA program. As you might expect, the program varies in organization. Our organization at the John Deere Dubuque Works is structured as shown in Figure 1. We report directly to the general manager, but receive direction from the Value Management Team. The Value Management Team is comprised of our fourteen top operating heads representing all operations within the factory.

![Figure 1 - Value Analysis Organization](image)

A value-oriented top management team, providing active support and involvement, is a necessary ingredient for success. At our plant this team has the authority and responsibility for policy and major decision-making. (See Figure 2)

![Figure 2 - Duties-VA Management Team](image)

Again, I can’t overemphasize the importance of having top management support and involvement. This structure provides the necessary support the program must have in order to function properly.

A competent VA staff is necessary to administer the program. The emphasis here is on administration and not on responsibilities for implementation. Our staff includes one coordinator and myself, whose responsibilities are shown in Figure 3.

![Figure 3 - VA Staff Duties](image)

Task force teams use the VA Job Plan and Techniques. Our teams are usually comprised of four or five men. A typical team assigned a hardware study might include members from the Product Engineering, Manufacturing Engineering, Reliability, Purchasing, and the Materials Engineering departments. Also assigned is a team sponsor. A sponsor is usually a member of middle management assigned as a key person knowledgeable of current designs and processes of the project being studied. He should be in a position to lend guidance and monitor team activities in a manner to obtain the best results from the study.

Team members are chosen according to qualifications needed to best suit the individual projects. Assignments are made on a part-time basis of about three or four hours a week. A typical study will require 150 man-hours and take about four months to complete. The team concludes its job at the end of the study with a final report.

![Figure 4 - Flowchart-VA Project](image)
There are some disadvantages in working with part-time assignments that take this long to complete studies, but we have found it difficult to draw full-time team members and have the necessary experience and qualified talent. Normally, most of the members shall have had the forty-hour VA seminar training, but occasionally untrained personnel are used.

Suggested project ideas come from all areas of factory operations (See Figure 4). Normally, project ideas are directed to our department but may come through members of the Project Steering Committee. We will investigate each idea, gather data as to potential value improvements, and then submit them to the Project Steering Committee. After approval by these management committees, task force teams are organized, assigned their projects, and the studies are started.

Once studies near completion, preliminary reviews are held with management that will be responsible for implementation to discuss proposals prior to final reports. The team leaders give the final reports to the Value Management Team, who then assign implementation responsibility to operating departments normally responsible for the work.

I would like to stress the results that may be achieved from these preliminary reviews held prior to final reports. All task-force members are present in this meeting. Usually, department heads will have key subordinates also present. Details of the proposals are discussed. Any significant objections are usually cleared up at this meeting. This provides for more complete understanding of the team recommendations and has been a key factor in getting better acceptance and faster implementation.

Final reports to the Value Management Team are usually limited to eight or ten minutes. Visual aids, sample hardware, posters, etc., are used to make these presentations as effective as possible.

Management by objectives sets goals for projects and savings. Figure 5 shows the number of projects completed during the past five years. The lower portion shows Value Analysis hardware projects. Value Engineering projects are shown in the middle, and the top portion reflects software projects. Value Engineering, as we use it, identifies projects applicable to product in the development phase prior to production. Value Analysis applies to the studies of existing or current products. Software includes studies of systems and procedures. Savings from VE activities are classed in a cost avoidance category, where we consider VA as actual cost savings.

Our MBO program, besides including objectives for the number of project studies to be completed, includes a dollar goal on gross savings to be identified, and a training program for a specified number of employees. Setting these objectives is an important step, as it is a basis for our planning at the start of the year and provides a means of commitment and understanding with the Value Management Team. It lets them know what is expected from us and allows us to make plans well in advance.

A monthly report to the Value Management Team is important as a means of communicating status. Our monthly report lists outside suppliers we have contacted, all active projects remaining open, the savings status for the program to date, the status of unimplemented proposals, and general remarks showing staff activities and other important happenings. Our aim is to show progress on every open project each month, such as:

Outside suppliers contacted
Active projects
Savings status
Status of unimplemented proposals
Staff activities and general remarks

Expediting project implementation is our responsibility. Following project implementation is an important step. As already pointed out, this matter is not the responsibility of the task-force team. Of course, the end responsibility of implementing the team proposals is up to the operating divisions. However, we must maintain contact so as not to let the projects die due to a lack of decision, and at the same time avoid antagonizing the implementers. Once the decision to proceed has been made, it is a mistake to assume that implementation will continue smoothly and expeditiously to final installation. Even with careful planning, there are often unexpected developments. The safest thing to assume during the implementation phase is that the brakes are always on and follow-up is continually required if you are going to get results.

A chart used periodically in our monthly management meetings is one showing savings implemented and pending implementation for each division within the factory. We call this an Hour Glass Chart (See Figure 6). This tells each manager how successful he is in implementing savings in his area and those projects with respect to potential dollars of savings yet to be implemented. This usually stimulates discussion and follow-up.

VALUE ANALYSIS PROJECT STATUS

![Figure 6 -- VA Project Status](image-url)

**Value Analysis/Value Engineering Training**
A well-organized Value Analysis training program that
cuts across all lines in the organization is one of the first needs toward developing Value Consciousness. We feel the forty-hour seminar workshop is the backbone of a successful VA/VE program. All efforts should be directed toward a long-range plan for function-oriented value consciousness throughout all areas of the company. Conceivably every employee, as he does his everyday job, should be familiar with the techniques. He has to be sold on the use of the technology — it has to be an automatic step in his planning and design routine. He will be enthusiastic if he knows it will work. These attitudes and skills will lead to success. A short time ago, one of our research engineers who has been assigned a number of Value Studies in the past, made a comment at the opening session of a new project study. The assignment appeared to be a tough one, but he commented, “We’re all at this point a little apprehensive about being successful in this study, but I know, based on past experience, that if our team uses the Value Analysis techniques we will be successful.”

At the start of our program we wanted to be sure that training was as effective as possible. It was evident we needed some assistance in getting started. For this reason we used an outside consultant who conducted our first eight seminars. Later, we developed our own training seminar, following the original format rather closely. More recently we have organized an interfactory training program whereby all of our domestic factories are working together in a joint effort. Essentially, we still follow a forty-hour schedule; however, we have divided the lecture portion from the workshop allowing eight weeks for project development. This provides sufficient time for well-documented reports and allows the team more time in the application of techniques.

Early in our program we recognized the need for refresher training. As a result, two video tapes are used. One is a twenty-minute tape in color entitled “This is Value Analysis,” obtained through the Society of American Value Engineers. The other is a thirty-five-minute tape prepared with the assistance of Value Analysis, Incorporated, that covers the Value Analysis job plan and a detailed overview of the first three steps. Much emphasis is placed on use of function analysis and the techniques, such as the FAST diagram.

A new employee indoctrination program will involve those recently employed. A series of two-hour orientation sessions are conducted at six-month intervals. These sessions are mainly held for those employees who have not been involved either in training or Value Studies and is done to promote cost awareness and suggestions for projects.

Outside Suppliers
Outside suppliers are one of our primary sources of information. Almost every value study includes contacts with at least two suppliers. Often, field trips are arranged to visit outside operations firsthand and learn of vendor capabilities. We find excellent cooperation from these people in providing technical assistance. Our suppliers are told we expect their participation to be a sharing experience with mutual benefits. They are challenged to use Value Analysis in their own operations and to suggest changes that will contribute to improved value and lower cost. These vendors often participate with task-force teams during seminar training.

It is difficult to estimate our outside suppliers’ contributions in terms of savings, but we find about half of the proposals developed in our seminars are originated from suppliers’ suggestions.

In-House Displays
Much work has been done in our factory to promote the simplification of designs and standardization of parts. A photograph of a display of clamping parts is used to promote standardization. Shown are the part numbers, annual usage, and the direct manufacturing cost of each part. Designers use it in selecting parts for new products.

A tremendous wealth and technology is available from outside suppliers at practically no cost to the factory. A photograph of an exhibit displayed in our main office lobby is called “A Gallery of Ideas.” The idea is to exhibit items used in our manufacture that present problems involving high cost, poor quality or workmanship. This display is changed at six-week intervals. Many new ideas have been contributed, and the project has paid for itself many times over.

Another in-house exhibit called “Imagining” was recently installed in our Product Engineering Department. It shows examples of cost reduction, standardized, or preferred parts. The purpose of this exhibit is to show illustrations of new processes or materials. It is aimed at engineers and designers to spawn new ideas for improved designs and lower costs.

Other Cost Improvement Programs
The programs covered above are those administered by our Value Analysis Department. We would be far amiss to infer all factory concerns for cost improvement lie only within these programs. Other programs administered outside our department having a significant effect on cost control and improvement are:

Wage Incentives — A standard hour plan covering direct labor operations with wage incentives.

Work Simplification Program — Work Simplification has been used since 1960. It also uses the task-force team approach. However, teams are permanently assigned who search out their own ideas for cost improvement. Their improvements fall mostly in the manufacturing area and do not involve design changes. Consequently, their projects are what we call “part-oriented” rather than “design-oriented.” Their program has interfaced with ours very well, as most of our projects are of greater scope and fall either in the hardware design or software areas.

Employee Suggestion Plan — The Employee Suggestion Plan involves mainly wage employees. Payment in monetary rewards are made directly to the employees based on one-half of the first year’s savings and one-fourth of the cost installation.

Purchased Profit Improvement Program — This program involves the Purchasing Department personnel in the selection of better sources of materials. They promote improvements in product designs to allow suppliers to reduce costs.

In addition, there are less formally structured cost improvement activities administered within various other departments.

Summary
In summary, we feel our role in Value Analysis must be one that creates constructive discontentment throughout the factory. We must provide an atmosphere to encourage cost creators, those individuals involved in the everyday decision-making process, to take effective action. We also must provide an environment in which suggestions for improvements will be studied with no fear of personal loss but will be reviewed with an economic or profit point of view.

Value Consciousness is the name of the game. It’s how we play it that determines whether we win or lose. In the long run it will also determine our success or failure.
Participation is the name of the game in management today, and one of the oldest forms in which it exists is the company suggestion scheme, as we call it in the United Kingdom, or the suggestion system, program or plan according to the Americans, for whom the words scheme and scheme have negative connotations. But where, amongst the wealth of techniques now available, does the modern manager use the classic suggestion scheme, is its purpose still valid in the management field today, or have changes in industrial relations taken place that render it obsolete? The first formal scheme recorded appears to be the one established in 1867 at the Krupp Works in Essen, Germany. In the United Kingdom, William Denny & Brothers, Limited, shipbuilders in Dumbarton, Scotland, started a scheme in 1880. The National Cash Register company is credited with the first suggestion system on the North American continent in 1894. The last word, however, must be said on behalf of Chance Brothers, Limited, glassworks, of Birmingham, United Kingdom, where, although there was not a formal suggestion scheme as we know it, the practice of paying work people for ideas put forward to management dates back to 1857. Then, ten pounds was paid to a worker who invented a fork for use in connection with flattening glass.

In “Model Factories and Villages,” a book published in 1905, there is an account of some early suggestion schemes in the United Kingdom. Mention also is made of several schemes run by firms in the United States where it was reported that “...this plan of cooperation is much more generally employed.” The author gives the following in support of suggestion schemes:

Hitherto, it has been too much the practice to snub the man who would teach his betters and many an ingenious fellow whose advice would have been invaluable, had it been welcomed, has had either to take his ideas to a rival firm or make no use of them at all. Yet, who is in a better position to devise labour saving and economical methods than the man engaged in the operations concerned?

The situation today shows little change in the attitude of management in the United Kingdom to suggestion schemes. This attitude has always been a reactionary one, while the trade unions in the United Kingdom have continued to regard schemes with suspicion or indifference. The Americans do not appear to experience the same degree of union opposition to their suggestion systems.

Suggestion systems in the United States have received formal recognition since World War I, when a suggestion program was initiated in the U.S. Navy by an Act of Congress in 1918. They were used extensively by the Americans to help the World War II effort with respect to productivity and manpower. The National Association of Suggestion Systems (NASS) was started in the United States in 1942 to give promotion to the use of suggestion systems and to provide a means of constructive communication between member companies. NASS produces a comprehensive annual statistical report or survey of suggestion systems run by member companies, and has even gone as far as establishing a professional certification program that enables members to become qualified suggestion system administrators in an effort to improve the effectiveness of the administration of suggestion systems. NASS also provides a means of comparison of systems’ performance on a national basis through the NASS suggestion system performance index formulae. International conferences are held annually for suggestion system administrators, with as many as ten countries being represented.

During the 1950s, there was considerable expansion in the number and scope of suggestion systems operating in the United States, Canada, and western Europe, with even some being started in Communist countries. But, because of the difference in methods of reporting statistics – or lack of statistics on suggestion schemes, as is the case in the United Kingdom – the data are not worthy of comparison from country to country, except to say that, in general, American management has the most regard for the profitable operation of their systems with respect to the ratio of savings realized for the company to the total costs involved in running the systems.

In the United Kingdom, the Industrial Society, from its inception in 1918, has supported the growth of suggestion schemes, believing “they can play a most useful part in implementing progressive human relations policies over and above the value they undoubtedly have in the productivity field.” As a result of a survey on schemes run in the United Kingdom in 1957, the Industrial Society formed a Suggestion Scheme Group to provide companies with a means of exchange of information on successful policies in the operation of schemes. The lack of response and enthusiasm by management in the United Kingdom, however, has made it difficult to carry out further statistical surveys or even estimate the number of schemes in operation. The last successful survey was in 1965. The British organization, called the National Suggestion Schemes Association, was formed as late as 1970 to continue the work formerly done by the Industrial Society’s Suggestion Scheme Group. The NSSA holds annual conventions for suggestion scheme administrators.

Besides company suggestion schemes, there was a National Suggestion Scheme in the United Kingdom, which
thrive for three years or so and was envisaged as a means of evaluating and directing suggestions from the general public to the appropriate authorities. It published several issues of a booklet called ‘What’ in the late 1960s. From the ANBAR Index on business publications, it can be seen that the number of articles on company suggestion schemes appearing in management literature is, once again, on the increase over the last few years; now that management is becoming more receptive than ever to the various forms of participation by employees.

**Participation**

The idea of worker participation means different things to different people in management. The suggestion scheme principle is intended to encourage employees to participate in improving the efficiency and economy of operations, based on the assumption that they are best able to contribute in their own functional area, and that any contribution beyond an accepted line of responsibility should be financially rewarded. But, as a method of participative management, suggestion schemes have largely been overlooked by top management, except perhaps in the United States, Japan and West Germany, where they have become an integrated part of the national management style.

It could be that the apparent renewed interest is due to the eventual recognition of that venerable institution, the suggestion scheme, as the original practical answer to such new phenomena of management science as job enrichment, code termination, worker participation, value analysis, profit sharing, industrial democracy, etc. All essentially are ways of relating the workers’ needs more closely to the aims of the company, or ways of using all the resources of the company in the most efficient manner. A suggestion scheme sets out to do these things in a basic fashion, in the industrial relations and productivity functions.

An idea can only be written down or discussed out of context of time, place, direction, chance, cause and effect. As soon as the idea is put into practice, it begins to have, or lose, value; it can be evaluated, analyzed, modified, made to succeed or made to fail, depending on the forces it encounters. These forces can be suggestions for improvement coming from those who are practically involved. To work in an environment where your ideas are condemned as worthless, without even the opportunity for those ideas to be spoken or written down for consideration; to work in a position where the job specification clearly says “initiative and judgment – not applicable” can mean the only other outlet for aspirations and identity is with a trade union movement. Initiative and judgment are never inapplicable for anyone in a company that operates a suggestion scheme for all levels of employees.

It is doubtful whether Yugoslav-type workers’ councils and the West German Two-Tier Management Board structure are acceptable in the context of industrial relations as it has developed in the United Kingdom. Anyway, neither of these two methods offers a means of direct participation in management for all individuals, but only a means of representation. Suggestion schemes encourage direct participation through a sense of involvement, available to everyone, as distinct from sharing in decision making by representation.

In these days of frequent change in the economic climate, the confrontation between Them and Us is beginning to be replaced by the realization of a common need, the success of the company and its survival. The conflicting objectives of employer and employee can be channelled into reciprocal aims of employer and employee in the contest of the suggestion scheme. This conflict then becomes constructive rather than remaining destructive, as it is outside the framework of a scheme. There is, of course, the possibility of using this conflict to make productivity agreements or collective bargains between employer and employees, but these efforts to reconcile the aims of the two parties are, at best, only temporary.

**The successful scheme**

Although the suggestion scheme principle is universal, there are no two suggestion schemes exactly the same. The policy decisions that lead to the formula for success in one company’s scheme do not apply to another company. That is why the many comparisons that have been drawn between different schemes operating in similar and different companies only serve to confuse the issue of what different policies practiced give the most successful scheme. The successful scheme is one that fulfills the objectives set for it by top management; and these objectives depend on the attitude of top management to suggestion schemes, and where it sees such a scheme in line with its company objectives for profitability and industrial relations.

The unfortunate assumption of similarity, often made between complaints and suggestions, probably stems from the fact that both were collected in a box in the days when this was the best attempt authoritarian management could make at communication with employees. A well-managed scheme is built into the existing structure of a company’s organization and communication, and so provides a healthy counterpoise for the attitudes of employers and employees in any working situation. In practice, the responsibility of the suggestion scheme can vary from being run by Old Joe Soap about to retire from the personnel department to being the responsibility of the factory manager, company secretary, company director, work study department, production department and, even, the wages or accounts department. The ideal position, in a firm large enough to need a more formal method of communication and control, is that this responsibility should be vested in a top line manager in his own right, independent of other functional or divisional managers. He should have sound skills in sales, communication, administration and investment analysis techniques. He should be given a budget from which to pay for awards and the administration costs for the scheme, and he should be required to show a profit on the scheme’s operation that is not less than the company’s rate of return on capital employed. An alternative way to evaluate a scheme’s performance is by comparison with national average standards of performance. This is possible only if all schemes use the same performance index, the same elements of savings and costs in the savings/costs ratio computation, and keep the same statistical records on the schemes’ performance and operation. Little attempt is made to do this in the United Kingdom at the present time, but in the United States the National Association of Suggestion Systems has the situation well in hand.

The investment potential in a suggestion scheme is clear when one considers the companies in the United States that report a ratio of dollars saved for the company (less implementation costs for suggestions) to dollars spent on the scheme — as high as 6.52 to 1 for 1974. In so many cases in Britain, the suggestion scheme still remains one of the company’s functions that is paid for out of profits because of its industrial relations value alone or, even worse, because top management is unaware of the cost of running the scheme and, therefore, unaware that this cost is considerably higher than the savings from suggestions implemented through the scheme.

**Evidence of changing attitudes and changing schemes**

Having established that there are sound economic
reasons for the existence of a suggestion scheme, why is it that so many United Kingdom schemes end up by being unsuccessful and abandoned? If we say that the administration of these schemes is not to be blamed — and there are many suggestion managers who would defend themselves on this point — then we have left the attitudes of management, the employees, and the unions to these schemes.

Many articles have been written on the financial and industrial relations value of suggestion schemes. It can be concluded that top management attitude on this subject can be divided into three categories:

1. Those who think that the industrial relations value, alone, must justify the creation or continued existence of a suggestion scheme in a company, even if the money saved annually from the suggestions implemented is less than the total costs involved in running the scheme.

2. Those who think that any operation in a company must be made to function profitably in order to justify its continued existence in a company and, thus, that the only acceptable value of a scheme comes from the high savings to costs ratio for its annual operation.

3. The third category comprises those managers who have always been of the opinion that their company does not need a suggestion scheme because employees' ideas are already considered and rewarded in the system of communication already established in the company. But, maybe this is just the attitude they adopt to cover up the fact that they are afraid the introduction of a suggestion scheme would upset the apple cart. It could be that these companies are in need of an improved dialogue between management and the work force, not the unions, because the union has become quite powerful and, consequently, has outgrown its purpose. On the other hand, if this sort of a company's appraisal of its own situation is true, then perhaps they are worthy of more careful consideration as possible examples of the participative management style that both management and unions are struggling to attain today.

The attention given to suggestion schemes by employees can never be any greater than the priority the scheme receives from top management.

The generally suspicious union attitude is confirmed when a suggestion arises that causes changes in manpower requirements or a reduction in the production bonus rate. Otherwise, indifference is the main union reaction that management experiences on this alternative channel of cooperation with its work force that is provided through a suggestion scheme.

Even so, the influential opposition to suggestion schemes sometimes shown by the trade union movement must be considered. This opposition is often based on arguments like the following: If there is to be payment for suggestions, it should be on a more democratic and unilateral basis than the individual award structure in a classic suggestion scheme, because a suggestion that is not implemented by the workers involved would save nothing for the company and no award would result for the one worker/suggester. Also, the considerably larger savings amounts still accruing to the company after the first year of implementation are not considered when the individual award amount is computed. These can be considered as valid comments and such an union attitude has led to the search for alternatives to the classic suggestion scheme and its award structure as we know it. An outline of one such alternative follows. I have called it the Bonus Incentive Suggestion Scheme (or System) — BISS.

**Bonus Incentive Suggestion Scheme**

The Bonus Incentive Suggestion Scheme operates on the principle of savings being made if all employees share equally with management, and then with each other, the monetary benefits derived by the company from the implementation and continued use of the employees' suggestions. The motivation to realize savings in costs is spread throughout the whole company because departmental target savings to be attained are linked into the overall Management by Objectives system operated between top management and supervisor level, and a monthly BISS bonus for all non-management is paid from the total pool of savings currently being earned for the company by employees' suggestions currently in operation.

New suggestions are considered at monthly department meetings attended by the suggesters, a representative from the union, management (the department manager), and a work study engineer, who documents the suggestions and coordinates their statistical evaluation. The suggestions that show a saving are then considered for nonacceptance or implementation by a coordination committee higher than departmental level, but also with union representation. Once implemented, all suggestions are monitored monthly by the work study department for attributable savings on a departmental basis, in order to establish department's savings against the target monthly savings amount set by the department manager, and in order to arrive at a monthly savings bonus pool. This pool amount is the basis for the computation of the monthly BISS bonus for nonmanagerial employees. Each month, once the pool amount has been established, it is first reduced by a certain percentage to cover the company's investment interests before it is split fifty/fifty; one half for the company and one half to be shared between the number of nonmanagerial employees on the payroll that month as their BISS bonus.

Whether or not it is feasible to monitor each month, to any degree of accuracy, the savings being made by implemented suggestions still in operation is not so important when one considers that paying the bonus achieves for the company the objective of continually buying the right to eliminate restrictive practices — a sort of perpetual productivity bargain.

Some other advantages of BISS are:

1. It is a group rather than an individual incentive, using the word group in its widest sense — the company as a whole. It encourages group participation in return for a monthly bonus directly related to the level and quantity of participation by all employees.

2. What the employee fears to lose on the production bonus (as the result of production rates being altered by a suggestion), he gains on the BISS bonus.

3. BISS is an integral part of the overall management of the company by objectives. The setting of target savings to be reached by each department motivates department managers (by whom the targets are set) to give practical support and encouragement for ideas to be put forward by their employees. This overcomes the manager's resistance to time spent on evaluation of suggestions. This resistance is due to the extra work involved and to the fact that under a suggestion scheme there is usually no benefit or recognition for his effort. The fact that managers are often concerned about the amount of time they spend evaluating suggestions when they should be doing their job shows how separately they see their job from the effort of effecting savings for the company from other people's ideas. This is especially true if the manager sees these ideas as criticisms of his work.

4. Technological change in industry is generally facilitated by the group incentive provided under BISS.

5. Savings made as a result of employees' group efforts are directly related to their pay packet as a monthly bonus, instead of being just figures published at the end of the year.
relating to savings the classic suggestion scheme has realized for the company, a certain percentage of which has been given to employees as individual awards.

6. Bonus payment rather than individual awards means that workers are not at a disadvantage if they work in a function which does not lend easily itself as material for suggestions.

7. BISS is more acceptable to the union membership who are not so suspicious of some workers being exploited at the expense of the few who are individually rewarded under a suggestion scheme, nor are they so afraid of giving up restrictive practices, which may be the subject of suggestions, and getting nothing in return.

8. With the suggestion scheme, there is always a degree of bad feeling and confusion resulting from necessary deliberation over the ineligibility of employees to receive awards, or of suggestions for consideration under the scheme's rules. This eligibility usually depends on the scope or level of the employee's job responsibility or on the type of suggestions being eligible for consideration under the rules of the scheme. With BISS all this no longer exists.

9. There is no opportunity for submission of a suggestion under wrong identity in order to try to qualify for an award under the scheme's rules.

10. BISS encourages active participation in management through the attendance of suggesters at the monthly department meetings in order to present and discuss their suggestions.

11. The suggester has the work study engineer present at the meeting to document the idea; any points not clear about the suggestion can be discussed at the outset.

12. Two of the costs to the company, normally associated with the operation of a classic suggestion scheme, are eliminated with BISS: Awards are no longer necessary for suggestions with intangible merit because the bonus comes from only those suggestions with a tangible cash saving to contribute to the bonus pool; it is no longer necessary to isolate the administrative cost of operations, as with a suggestion scheme, since operation of the BISS is absorbed into the administrative system already in existence — such as the work study department and the ordinary productivity bonus activity.

13. There is no reason why administrative workers cannot also participate in BISS. Unlike the production bonus, the BISS bonus would not increase the differential between the take-home pay of administrative and production workers.

The disadvantages of BISS against the classic suggestion scheme are:

1. Considerably more of the company's savings from suggestions are being given to the employees with the BISS bonus than with individual awards. Suggestion awards under a classic scheme are usually based only on the savings from the first year of a suggestion's operation. The bonus is calculated from monthly savings from all suggestions as long as they are still in operation. Although this is a disadvantage for the company, the employees' viewpoint or potential improvement they wish to bring to the attention of management. In this way, management avoids the obligation to give payment for this form of participation. Except for urgent matters, all submissions from employees are kept and considered at department and corporate-level yearly planning sessions, where they are classified into six subject groups according to product, process, market, distribution, finance and administration. The purpose of these sessions is to fit into the company's plans as many of the employees' ideas as possible without making too many different plans. The more urgent issues dealt with during the year are presumably more like the suggestions considered under a classic suggestion scheme, in that they relate to the current production situation, rather than to the company's long-term plans.

The main difficulties associated with operating such a system arise because, unlike the suggestion scheme, there is no need to monitor or estimate savings if awards are not given. Thus, there is no follow-up ensuring that action plans finalized are, in fact, carried out, monitored for progress and modified if necessary.

The main advantage is the anonymous channel of communication for employees' grievances to management. Unfortunately, this anonymity also equally detracts from the communications value of this system, in that no vehicle is provided for management's communication back to the employees concerning their ideas.

In short, this last system works on the principle that a sense of involvement is more important than cash as a motivation factor to employees.

**Where we stand today**

As a method of payment for participation, the classic suggestion scheme stands between the two extreme approaches, developed within the last decade, of payment for all, or no payment at all.

It could be considered that changing attitudes will mean that managers and workers, alike, will expect to give this participation within the usual channels of communication at work, thus rendering obsolete the classic suggestion scheme. On the other hand, attitudes change only as fast as the changing generations; in the meantime, suggestion schemes afford a practical way of using participation in management.

The suggestion scheme principle still holds good today, but its conception as a management tool is having to change as the management/union interface changes over the years. It can be all things to all people or just a dead duck idea, long outgrown by developments in industrial relations and management technique.

There is, clearly, a need for change towards a more democratic management style. To discover how best this can be done was the task appointed by the British Government to the Bullock Committee in 1975. Some sort of a suggestion scheme could, feasibly, be one of the types of worker participation that industry in Britain will be required by law to introduce.
FUTURE
COST REDUCTION POSSIBILITIES
MASS TRANSIT SYSTEMS

By Vincent Lao

VINCENT L. LAO, CVS, principal,
V.L. Lao & Associates, majored in ME
and CE at the University of Wisconsin.
Graduate studies in Highways, Urban
Planning, Sanitary Engineering and
Power Plant Design. Worked for pri­
vate consulting firms and government
agencies with broad and in-depth
experience in planning, design and
construction of public facilities. He
has written numerous technical papers,
most of which have been translated
into Japanese. He received the SAVE
Technical Paper of the Year Award
(1970-71) and the SAVE Editor of the
Year Award (1975-76). In 1975, he
conducted VE seminars in Japan and
the Philippines and was a guest speaker
at the SJVE National Conference. His
specialty is in the teaching and prac­
tice of the art and science of VE in
construction.

Introduction
The success of Value Analysis and Value Engineering in
industrial products is an established fact. However, VA/VE
may not be as successful in the construction industry as it
should be, especially when the government is involved.
There are many reasons for this and some of them will be
discussed in this paper.

Based on well-documented value case studies, ten
percent to twenty percent value improvement/cost
reduction possibilities would be an average for most
construction projects. This means $20 billion cost
reduction per year for the $100 billion construction
industry in the United States. There are cost-reduction
possibilities in applying the philosophy and methodology of
VA/VE to construction items, equipments, operation and
maintenance. However, emphasizing the philosophy and
methodology of VA/VE may not be good enough when
there are time constraints. Application of the art and
science of VE in construction at the early stage of the
design must also be emphasized for substantial value
improvement/cost reduction possibilities.

Cost Escalation
Cost overrun is such popular news in Washington and
other big cities like New York that it is becoming a fashion
for local governments to follow. The talk about bureau­
cracy, inefficiency and waste in government is so like a
broken record that government officials are becoming
immune to it. After all, what is a million-dollar or a billion-
dollar waste here and there? It will mean only a penny or a
few dollars to the taxpayers. This is peanuts compared to
what the average citizen expends every day.

Of course, no one can question how the individual uses
his own money. However, government workers are paid to
make sure that public funds are put to good use instead of
being wasted. Waste is a big business and it is a way of life
in America. The practice of bribery, graft or corruption
tends to dull the sensitivities of public officials to the idea
of waste in government. Elected officials should see to it
that citizens' tax money is getting its greatest value for
public good. VA/VE is a new disciplinary technique that
can be used to extend the value of the citizens' tax dollar.

In 1969, Congressman Larry Winn, Jr., of Kansas con­
ducted a survey concerning the effective application of
VA/VE in the federal government, including the Washing­
ton Metropolitan Area Transit Authority (WMATA). The
administrator of WMATA replied and criticized Congress
for not appropriating the money soon enough to beat infla­
tion. Inflation was used as a cover-up for the other causes
of the cost escalation, especially for the unnecessary cost
that could have been technically controlled.

Before talking about future cost-reduction possibilities
for mass transit systems, we must first know all about the
cost escalations in order to find out where and what the
cost-reduction possibilities are and how they can be
effectuated. According to the January 1965 Report to the
President, "Rail Rapid Transit for the Nation's Capital,"
the capital outlay for the Mass Transit System was approxi­
mately $800 million. In February 1976, the price tag for
more than a 587 percent rise in cost in eleven years. Is this rise in magnitude normal or are there other reasons for the cost escalation? Figure 1 is a conceptual breakdown of where the major cost escalations might have come from and where the cost-reduction possibilities are.

<table>
<thead>
<tr>
<th>Causes for the Cost Escalation</th>
<th>Cost Escalation</th>
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<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>1 Rise in Construction Cost</td>
<td>150*</td>
</tr>
<tr>
<td>2 Modernization &amp; Ignorance</td>
<td>130</td>
</tr>
<tr>
<td>3 Management, Politics, etc.</td>
<td>120</td>
</tr>
<tr>
<td>4 Miscellaneous Cost Escalation</td>
<td>27+</td>
</tr>
<tr>
<td>5 Unnecessary Cost</td>
<td>160**</td>
</tr>
<tr>
<td>Total Cost Escalation</td>
<td>587+</td>
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* The rise in construction cost is approximately 235 percent between 1965 and 1976; Reference: Engineering News Record March 1976. Since more than half of the capital costs were committed earlier than 1976, 150 percent cost escalation for Item 1 does not appear to be sufficient for the purpose of this analysis.
** This is the unnecessary cost that can be technically controlled to almost thirty percent of the total cost escalation. This also shows that effective VA/VE can offset Item 1 to alleviate if not stop inflation.

The cost escalation in Item 1 is due to inflation and may have been used to cover up the other cost escalations. Top management might not realize or would not admit that lack of value assurance of the money in their charge was one of the main causes of inflation. Nor would they volunteer to highlight or mention the cost escalations due to modernization, ignorance, management, politics, etc., as shown in Items 2, 3, and 4. Most likely, they would never admit that there was a cost escalation due to Item 5, Unnecessary Costs; however, the owners (users and taxpayers) who pay the bills and the leaders who appropriate the money should be interested in knowing all the reasons for the cost escalation and the possibilities for cost reduction.

Because of the $4.7 billion cost escalation, the transit riders may have to pay as much as seven times the original estimated cost of twenty-five cents for a local trip ($1.75) or fifty-five cents for outlaying areas ($3) to satisfy the 1965 economic forecast. This is over and above what the taxpayers will have to pay for subsidizing the transit system in Washington, D.C.

Cost Reduction Possibilities

Item 1 — Inflation has many causes and there are many ways to slow it down. Lack of value assurance is one of the basic causes of inflation that very few people know about and much less do they know about VA/VE as a new discipline for value assurance. There are no cost reduction possibilities for this item; however, effective application of VA/VE will assure the greatest value of the investments and help slow down inflation if not stop it.

Item 2 — Modernizing the system is sometimes necessary for long-term, cost-reduction effect. The ignorance factor is due to management's lack of knowledge of VA/VE and value awareness of the short-term and long-term cost impact of modernization. For example, the cost of automation and the additional cost for passenger comfort and convenience may be out of proportion in view of function and cost. Without proper functional and cost analysis of the additional features, it may be too late to control the cost once the initial investments are made. Effective application of VA/VE can have short-term as well as long-term cost reduction possibilities in this regard.

Item 3 — Cost escalation due to mismanagement, political and other intangible factors are complex. Cost reduction possibilities on intangible factors may not be easy to accomplish technically. However, comprehensive understanding and effective application of VA/VE should produce substantial value improvements. Empire or Toy Building is a common practice to justify the existence of the office and its cost; Reference: "The Things I Cannot Change," W. Gentry and R.L. Pool, Civil Engineering Magazine, July 1968.

Unfortunately, the Mass Transit System in the nation's capitol is becoming a political football to be kicked around by the politicians. At best, it is a make-work project for the benefit of the people who are planning, designing, constructing, operating and maintaining the system. The financial situation of the project is in a mess. Its cost effectiveness and economic viability are in great doubt. Either it will become a big white elephant or the taxpayers will have to continue subsidizing it.

Item 4 — Miscellaneous cost escalation may include, but is not limited to, the costs that were not accounted for in the contingencies. In this particular case, it may include the costs of public relations, aesthetic and environmental considerations, etc. With an effective VA/VE application, greater value (tangible and intangible) of the expenditures could have been obtained with half the cost.

Item 5 — Unnecessary cost that can be technically controlled is what VA/VE is trying to avoid. Most administrators and managers will not admit there is such a thing as unnecessary cost. Those who are conscientious about their responsibilities may admit that unnecessary costs always exist, but they will also insist that they are doing VA/VE all the time to reduce if not totally eliminate them. The government and the A/E's claim that they are doing VA/VE all the time as a way-of-life may be true to some extent. However, VA/VE as a way-of-life may not even scrape the tip of the iceberg. It must be applied as a special disciplinary task with its philosophy, methodology, art and science to tap the remaining VA/VE gold mine.

WMATA must have been so busy with the daily administrative duties and technical problems that it was unlikely for them to spend extra time for value assurance. Because of the complexity of the project and the time involved in preparing the contract plans, WMATA and the A/Es were pressed for time (the project was already behind schedule) just to finish the construction plans according to accepted design standards and specifications. How could they possibly spend extra time for innovations and in-depth design-to-cost analysis? Even if they had time to analyze the design-to-cost impact, who was going to take a second look (one of the important concepts of VA/VE) at the preliminary and final design plans according to VA/VE objectives? Besides, VA/VE will not be effective if it is done by the same people who are responsible for the general engineering and construction plans. This is why an outside VA/VE artist should be used.

The VA/VE artist should work with the in-house review sections. While they are reviewing the plans according to accepted standards and conventional designs, the VA/VE artist can concentrate on pinpointing and determining high-value improvement potentials. The VA/VE task should not disturb or lengthen the original time table for the completion of the project. In fact, substantial cost reduction through VA/VE should shorten the time table.

This paper will try to emphasize the cost reduction possibilities by applying VA/VE as a separate disciplinary task after planning and preliminary design, final and detail
design, plan preparation and construction contract award. The following example will show why there are cost reduction possibilities, what they are, when and where they can be located, and how the remaining VA/VE gold mine can be tapped.

Highway tunnel under the reflecting pool.

South portal of the tunnel.

For VA/VECP 1, applying functional and cost analysis of the traffic patterns would have shown that a four-lane tunnel was sufficient for the through traffic. However, for practical considerations, a six-lane tunnel would have been the best solution. This tunnel is located in the Central Business District of Washington, D.C., which was the zero point of the Origin and Destination study. Reversing the ramps at both ends of the tunnel would have automatically eliminated two extra lanes in the tunnel. This would also have resulted in better traffic circulation and highway safety because there would be no weaving traffic inside the tunnel.

Eliminating two lanes in the tunnel would have reduced construction cost by as much as $21 million. This would also have reduced millions of dollars of construction cost for the new Labor Department Building at the north end of the tunnel.

VE Change Proposals

VECPs 1 and 2 will be used to illustrate why the unnecessary cost exists and how the VA/VE gold mine could have been tapped. The eight-lane highway tunnel (I-95) is almost one mile long and crosses the Great Mall under a reflecting pool in front of the Capitol.

This tunnel was at the preliminary and final design stage when the then director of the Bureau of Public Roads testified in the U.S. Senate that they had been doing VE all the time as a way-of-life. But he may not have been aware of the rich VA/VE gold mine that was to be buried and abandoned in this tunnel. This tunnel is only a stone's throw from where the director was speaking. The remaining VA/VE gold mine could only be tapped by applying the philosophy, methodology, art and science of VA/VE as a special disciplinary task.
During the early design of this tunnel, an eight-foot earth cover was to be put on top of it for the trees along its path. This was the plan that the A/E used to prepare the construction drawings. Halfway through the final design of the tunnel, the U.S. Park Service and the D.C. Highway Department agreed on a plan to put a reflecting pool on the Mall, and it happened to be on top of the tunnel where the trees were supposed to be. Probably no one knew about the original design load because of the trees. If someone did, he may not have had the design-to-cost sensitivity to realize the tremendous cost reduction if the design load was reduced to half its original assumptions.

If there was a special VA/VE task in the government (D.C. or FHWA) to apply the art and science of VE, the VE gold mine in VECP 2 could have been easily tapped. If VECP 2 was implemented, the cost reduction would have been approximately twenty-five percent of the original cost or $17.5 million. The cost of redesign and changes in the contract plans would not be more than $100,000. Reducing the construction cost would reduce the construction time and more than offset the time needed to change the construction plans.

FHWA could have caught this oversight if they had someone in charge to review the plans according to VA/VE objectives.

VECP 2 may look simple because everything has been pointed out. Since cost reduction is automatically accomplished by reducing the design load, someone might wonder whether this is what VA/VE is all about. However, he may not realize that VA/VECPs 1 and 2 or any of the other proposals were never discovered and developed because VA/VE was not applied as a separate disciplinary task. He may not even know that effective VA/VE is more than just a way of life. It involves conscious application of its philosophy, methodology, art and science.

**Conclusion**

If VA/VE is effectively applied, substantial value improvement/cost reduction is possible for major construction projects. The total cost-reduction possibility used, for example, is more than twice the average cost reduction that was mentioned in the introduction of this paper. The art and science of VE is for speed, visibility and credibility. It will help expedite the determination, development and evaluation of the value proposals and enhance more cost-reduction possibilities.

Applying the art and science of VE need not delay the completion of the project. In fact, the project can be completed earlier according to the amount of work eliminated and the construction time saved as a result of VA/VE. However, without special authority and responsibility to effectively pursue and follow up value objectives as a separate disciplinary task, the remaining VA/VE gold mine/cost-reduction possibilities will never be tapped.
Participatory Management: The Next Step For Corporations

Dr. ALFRED J. MARROW is president of the American Board of Professional Psychology and former head of New York City's Commission on Human Rights. A pioneer in the use of sensitivity training techniques to stimulate more open, productive working environments, he has conducted ongoing studies of the relationship of people to their work, and has aided corporations and small businesses with his ideas on how to improve the work situation through the use of T-Groups (training groups) that enable participants to understand and reshape their impact on others. His findings on the effectiveness of the T-Group experience have been published in "Behind The Executive Mask," one of the ten books on work that he has written.

A diplomat in industrial psychology, Dr. Marrow has been honored by a Distinguished Service Citation from the U.S. Department of State for his contributions to the refinement of Embassy administration techniques throughout the world.

As we celebrate our two hundredth year, the business community is becoming aware that we need another revolution—a revolution in management. We are just facing the fact that much of our economic sphere is still built on an archaic despotism, a holdover from the Industrial Revolution when the company was the man who headed it! While new innovations are eagerly seized upon by management, creating technology that is second to none, business people are still looking for a way to create a thriving economy and contented personnel on all levels.

The despotism which worked in the Nineteenth Century has long since outlived its usefulness. Today's work force is better educated, more affluent, and brings to the job higher expectations for self-management and self-actualization than have employees in the past. The implications are that conventional procedures that keep all decision making at the top must be revamped.

It was pointed out in the recent government study, "Work in America," that most managers and supervisors are chosen because they possess authoritarian traits. But these very traits can bring managers into daily conflict with their subordinates—particularly those workers, younger and well educated, who have grown up in homes and schools where democratic and participative methods are practiced.

Managers have discovered that shorter hours and higher pay will not provide a satisfactory answer to the employee's yearning for self-fulfillment—or for the loss of self-esteem from having to perform mindless, rate-type tasks. It is also a hard fact of life that climbing wages and stable
prices are economically feasible for companies only through increased productivity. Yet during 1973 and the first half of 1974 the productivity rate in the United States showed no increase, despite an increased rate in modernization of equipment and in improved automation. It is obvious that efficient equipment, though important, cannot do the job alone; there must be a major increase in human productivity. The challenge is to create a work climate in which the employee is motivated to produce.

My own work with corporations, along with countless studies done by others in the field, emphasizes that the weak link in the business community is lack of employee participation in the decision-making process, resulting in the alienation of workers. The organization that is over-managed and over-controlled harvests restlessness and anger, which creeps out of the factories, shops and offices, and into the streets and homes of Americans.

Research has found that people on a job, who have nothing to say about the way things are done, are apt to show little interest or concern with their company’s profits or productivity. They drift along just to get by, while doing as little as they can. However, if they are involved in face-to-face, problem-solving tasks, they join wholeheartedly in finding practical solutions. They are participants. Now they are more than mere hired hands. They no longer feel like robots. They are more than mere hired hands. They are more than mere hired hands.

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PARTICIPATORY MANAGEMENT

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that when the need for change is seen by upper levels of management, and the tools for this change given to executives, they can begin to create the kind of open atmosphere that is the springboard for problem solving. Organization leaders come to recognize that building cohesive teams is a vital process in today's complex organizations. This means that people must be open and trusting of one another — and that trust must extend downward throughout all levels of the company.

To build this trust we have successfully utilized T-Groups (sensitivity training groups for managers). The T-Group creates a group-learning situation in which the participants are taught to see themselves as others see them. It is an open dialog whereby each helps the other to drop the double meaning from transactions and to stay "on the level" with themselves and others. From the T-Group, internal changes are made that help to forge mutual cooperation, increase flexibility and encourage independent creativity among managers.

Some of the questions dealt with in the T-Groups are:

- Is your behavior in tune with your feelings? If not, how do they differ?
- Are your transactions with coworkers and staff straight and clear?
- Can you admit to yourself when you're afraid? What do you do about it?
- Do you trust other people? How well do you trust yourself?
- Do you make unnecessary demands on yourself, and then blame others because you are overworked?
- Can you monitor your tone of voice when presenting ideas or making requests?
- Are you prone to store up resentments to be used later in anger or withdrawal?

Do you take your problems home with you?
Do you always have to be liked?
Do you enjoy your job, or are you storing yourself from taking pleasure in what you do?

These questions help the executive to become more aware of the contradictions between his professed concepts — so many managers espouse views supportive of democratic procedures and greater self-management, yet do not relate any differently to employees — and their actual behavior. The flexibility learned in the T-Group experience can break down the resistance of management toward sharing decision making with employees on other levels.

While there are a number of hypotheses drawn from clinical experience and from such research studies as "The Authoritarian Personality," concluding that some executives need to gain fulfillment through acquiring power, it is also true that they have attained their position because they are capable of flexible response to challenges. They did not reach their positions by running away from problems.

Given the need and the tools for change, management personnel will respond. We have found that managers are willing to revamp their attitudes and reach for more openness among themselves and toward their employees, if they know that this is an effective way to do a better job.

If our basic problems are human ones, then our next challenge is to build a bridge between the behavioral sciences and business management. If we succeed, then the critically needed changes can be made by a skilled and conscious choice. If we don't, the changes will possibly come through the militance of the dissatisfied who will upset the power balance of the past, sabotage and topple the traditional pyramid organization structure and possibly cause serious economic consequences.

In order to maximize the productive capabilities of our employees, we must consider participative management that responds to the social needs of all workers, rather than the authoritarian needs of the managerial few. Our democracy was built on the concept of equal rights for all people, yet over the past two hundred years our corporate structure has sadly strayed from this principle. Surely the lesson of the past industry-wide strikes has been that our trust in the paternalism and authoritarianism of most corporations today is ill-founded.

What happens next will be determined by how enlightened the managers of our country's vast technical and intellectual resources become in this matter. What American industry needs as a priority is not more intricate machinery, but more insight into the intricacies of the human mind and spirit. Treat American workers as adults with ideas as well as hands — with creative impulses as well as a desire for material rewards — and there will be an explosion of energy that will make our next one hundred years a bright and prosperous page in American industry.
HARRY E. WILLIAMS is the director of Quality Assurance and Reliability for Electronic Memories and Magnetics Corporation, Hawthorne, California. Previously, he was manager of Field Operations for Litton Data Systems where he organized and staffed a nationwide field engineering function. He has held managerial and engineering positions with high-technology corporations in the aerospace and cryogenic fields since 1946.

Williams has a Bachelor of Science degree in Engineering and a Master of Arts degree in Business Administration from California Western University. He also holds a Professional Engineer's license in California. He was an officer in the Orange Empire and San Fernando Valley Sections of the American Society for Quality Control and is an active member in the Society for Advancement of Management in Orange County.

He has authored many articles and editorials on product quality, personnel development, and cost-effective organization concepts. Williams also lectures on these subjects to college students.

TOMORROW'S QUALITY CONTROL MANAGER

By Harry E. Williams

The manager of today who has been generally successful in the role of Quality Control possesses some unique characteristics in order to achieve this status. He is product-oriented. He has the ability to organize an effective monitoring system and is usually persuasive when dealing with the customer representative and his peers.

If he has achieved a technical education and is an effective problem solver, these abilities are additional assets of a high magnitude.

Tomorrow’s Quality Control manager not only will require a greater degree of technical expertise, but he also will have to carefully plan what he reads and studies.

It is anticipated that by 1985 the vast amount of information that will be available to the manager will be staggering and impossible to cover for any individual, regardless of his abilities.

One distinct disadvantage will be the difficult task of absorbing this abundance of data. Therefore, he will have to be highly selective in what he chooses to read, and speed reading offers a partial solution to this unique problem.

Another major crisis, which is beginning to impact management, is the flexibility rule. Recognizing and reacting to a change is a skill that more managers will have to develop in order to become successful in the future. Truly, this attitude will be vital to the Quality Control manager of the 1980s. Resistance to change is an action that is undesirable and will slow down progress if allowed to continue or even grow.

Another potential trap in the progress syndrome will be the increased pressure for a manager to do. The necessity to sit back, organize thoughts and plan will become more and more apparent to his supervisors. The ability to apply business statistics and utilize control charts will be almost mandatory for the Quality Control manager who will function in tomorrow’s environment.

Sophisticated information systems will become more complex. The computer will play an ever-increasing role in tabulating, sorting and displaying critical data. The need to understand these systems will increase at a rate greater than the utilization of the resultant data.

The necessity for continuing his education in the field of his choice will plague the Quality Control manager in the 1980s. The semi-conductor industry is an excellent example of a rapidly expanding technology. The utmost in incentives, technical education and personal motivation is required in order to achieve success. Adequate financing is, of course, also an essential ingredient.

In the next decade, the manager must be increasingly alert to the effects of government and international economics. They will have a marked influence on the business or industry where he is employed.

The standards by which managers will be rated also will change. The manager of today who is better than average will be but a mediocre manager in the highly competitive business world of the future.

Although specialization will evolve in most fields, the true general manager will, by necessity, be a generalist. The choice of his staff, and the supervisors that his staff have selected, will be critical with respect to the progress of the organization and its ultimate success.

All of these managers will, essentially, be affected in the same manner as the Quality Control manager. Each
function and responsibility will require a real pro in order to assure success for the company.

As industry moves towards expanded uses of automation, the Quality Control manager will have to increase his expertise in dealing with people. Not just in being persuasive, but more people-oriented than ever before. Without this essential skill, his technical education and information system will not provide the basis for a successful career.

Younger people of both sexes are entering the middle management levels today. Although the trend is not obvious yet, younger managers also are entering the upper management levels. Independent management development companies will prosper as a result of the need for experienced and skilled senior managers to train the younger, less experienced ones. The senior managers will have approximately the same number of years' experience. It could be tragic to have the majority of the decision-making managers involved in an on-the-job training program at the same time. There will be no other method for the up-and-coming manager to learn the necessary skills.

In the future predicted for the Quality Control manager of the 1980s, there is one fact that cannot be overlooked. The world of Quality Management is a dynamic situation, and the good old days—whatever they were—will never, never return. Maybe that's what the evolution theory is all about!

UPDATE
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the system scientifically predetermines times involved in manual and mental work.

Approximately sixty-five percent of Japanese industry uses the Work-Factor system and has engineers trained in its application. This includes such major corporations as Sanyo, Hitachi and Mitsubishi. Over the past twenty-five year, productivity gains by Japan have outpaced all other industrial nations.

ASOC FAVORS SAFE NUCLEAR POWER

At its annual meeting held in Toronto, Canada, the Board of Directors of the American Society for Quality Control issued a statement endorsing safe nuclear power. The statement read, in part:

"There is no question whether nuclear power can be safe. The country has safely operated nuclear reactors for thirty years with a safety record unequalled. "There is no question that utilization of nuclear energy involves risk. Most things that man does to improve his living environment on this earth involve risk. Aviation has inherent risks, yet the commercial airlines in the United States today provide the safest means of transportation in the world. Safer than walking. Yet, the safety record of the airlines does not compare with that of nuclear power generation."

"The thing that makes aviation safe, that made the space programs safe and that makes the nuclear industry safe is intensive knowledge of the risks involved, and the establishment and attainment of standards of design, manufacture, construction, installation, test, operation and maintenance in such a way that the known risks are compensated for by the safety systems involved, and by the training, skill and dedication of the people who make them work."

"It is the firm position of the American Society for Quality Control that the establishment and attainment of rigid standards of quality have given the nuclear industry an enviable reputation for safety. It is our firm conviction that continued development and application of rigorous standards make maintaining that safety reputation a realistically attainable goal."

"To say that something can be safe and has been safe does not guarantee that it the future it will be safe. The engineers, manufacturers and utilities who design, build and operate nuclear plants, and we, the public, should maintain healthy skepticism and eternal vigilance to assure nuclear plants are designed, built and operated to be safe. We must not use it to thwart and to destroy one of the few technologically feasible alternatives capable of resolving a short- age of energy that in itself is more hazardous to our health and safety than the use of nuclear power could ever be."

NASS PAPERS WIN CASH AWARDS

Judges of the National Association of Suggestion Systems' recent International Papers competition selected three papers for top honors. First place and a cash award of $200 was won by Kristine Olsen, whose paper was titled "Suggestion Schemes and the Participation Game." Mrs. Olsen is employed by Vick International S.A., Paris. The second-place award of $75 was made to Roland A. Haedge, a labor-management and employee relations specialist at the Department of Health, Education and Welfare, Dallas. His paper was titled "Motivation Theory." R.W. Chase, project manager at Southam Murray Printing, Weston, Ontario, was the recipient of the third-place award of $50 for his paper "Research and Introduction of an Employee Suggestion Plan at Southam Murray."

The awards were presented at the Association's Annual Conference held at Orlando, Florida, in September 1976. International in scope, the Association annually offers its members an opportunity to compete for cash awards and recognition through creative writing on subjects related to any aspect of Suggestion Systems.
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