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I asked him, "How in the world do you keep that white woolen tunic so clean?"

"Do I have to be scientific about this simple cleaning problem?" he protested.

"Please," I begged. "The spotless white tunic of Austro-Hungarian officers are a mystery to all of us. How do you keep them clean?"

After clearing his throat, he told us, "The secret is in the cleaning fluid," he explained as he sat down, "We owe is to Dr. Nikolaus Otto, Gottlieb Daimler, his daughter Mercedes, and Carl Benz. They discovered a waste product of petroleum refining.

"A waste product! . . .?" I cut in.

THE OBJECTIVE OF THE FUNCTION

It is true. Gasoline was a waste product from petroleum. It was refined to separate the oil from the tar. One of the products of this separation was gasoline. Too dangerous for illumination and cooking, it was sold only as a cleaning fluid.

Like the rest of us, the Brazilians suffered a shortage of fuel during the Near East oil embargo. The obvious function could be Produce Fuel, but they looked at the objective of the function to produce fuel on the surface of Brazil.

Solving problems and unravelling mysteries does have value. The mystery of the spotless white tunic of CzarianRussians and Austro-Hungarians led us to the humble origin of gasoline. Another mystery is how, at the height of the Spanish Empire, little Portugal, though barely a corner of the Iberian Peninsula, gave rise to Brazil. Unravelling this mystery can lead to a better understanding of the Brazilians.

Brazil has a huge tropical rain forest, thinly inhabited by native Americans who are just entering the Neolithic. In addition to hunting and gathering, these forest peoples have learned to grow some of their own food. This food is very nutritious cassava or manioc root. Fermented and distilled it can be used as motor fuel.

GROWING THEIR OWN MOTOR FUEL

The Federal Republic of Brazil is doing just that. Not only have they solved their energy problem but they are on the way to solving their balance of trade problem, manufacturing more motor vehicles than all other South American countries together and building ships for export.

I have lived and worked in the Amazon region and I have been rescued by a Brazilian monitor. A monitor? . . . !

A monitor, to be sure, not the lizard but the naval vessel. They both exist. Maybe I had better explain.

**How Brazil came about**

Late in the XVth Century, Spain and Portugal implemented a papal dividing line with the Treaty of Tordesillas. The treaty recognized Portugal's African colonies but also gave Portugal a toe-hold on the coast of South America.

At the independence from Europe, each Spanish colony became a separate nation but the Brazilians united into an American Empire. Their pioneers, the bandeirantes (flag bearers) followed all rivers upstream. They gained control and jurisdiction over the meeting places of the great rivers that flow into the mighty Amazon.

The Brazilians are good value engineers too. We have had them at our international conferences.

**Effectiveness of group dynamics**

I had thought that Professor Kurt Lewin's skill in analyzing the activity of groups was unique. Then I discovered the value task groups of Larry Miles. Neither oceans, nor cultural barriers can nullify people's need to work together. Once in a while someone arises who finds a way to make this work truly fruitful. Such is the method developed by Lawrence D. Miles. Larry's management techniques enhance the best characteristics of human groups.

There is no room for the them-and-us hostility in value improvement. It has to be a truly joint effort. We are all trying to turn out greater value for the resources committed. The value work of Larry Miles is done in the utmost friendliness and it is a lot of fun.

We have sense organs that reveal reality to us through sight, sound, smell, feel and God knows what else. How well do we understand reality? Are logic and mathematics enough to cope with this problem?

Hardly.

When a successful manager says, "I have a good (or a bad) feeling for this idea," he is summing-up all his ancestral genetic heritage, maybe as far back as the dinosaurs and possibly further.

**Heritage of intuition**

The living descendants of the dinosaurs: the alligator, the cayman, the crocodile and the gavial, must have done something right to be alive today. They must have made some good decisions. That ancient heritage shows up in our feelings. Add to this language, writing, and the
Shopping for Value In Construction

By Robert A. Feger

Reprinted with permission from the November 1982 issue of Shopping Center World: a publication of Communication Channels, Inc., Atlanta, Georgia.

Very few retailers or shopping center owners and developers sit down at the inception of a building program with a blank checkbook. With today’s tight money and uncertain economy, each has to make some tough decisions and encourage creative teamwork by the architect and contractor to produce a quality building within their budget and schedule.

Unfortunately, too many owners face the unpleasant economic facts only when working drawings are completed and the job is bid. But when cuts have to be made at this stage, the redesign can be costly and the delays significant. There is a remedy, however, that gives the owner more effective - and earlier - control over project costs and schedule. It is called value engineering (VE).

Four-Stage Process

VE is not just cost-cutting. It involves analyzing a shopping center or retail store design from the construction viewpoint with the goal of balancing performance and quality against initial and life cycle cost. The objective is to optimize quality, time and cost.

By bringing in a qualified construction manager/general contractor at the beginning of the design phase, owners can analyze costs at the stage where they can exercise the most control over them. VE gives the owner, the architect and the contractor the information on which to base sound decisions. For a small, up-front investment of time and money, the retailer or developer can realize significant savings - without sacrificing the function, quality or design integrity of the building.

The key to success is to start early in the project. Typically, VE is conducted at several stages of the project, beginning after the functional planning phase when schematics have been prepared. VE is often conducted again during the design phase, and “value management studies” are conducted during the construction phase.

The important fact for the retail owner/developer to recognize is that potential savings are greatest during the early stages, and decline as the project progresses (see Graph A).

Depending upon the owner’s needs and the complexity of the project, VE efforts range from informal suggestions to a formal, organized process. Normally, VE incorporates these steps:

1. The information stage, in which the construction manager/general contractor’s estimating group identifies the high-cost or “problem” areas of the project, based upon a study of the schematics.

2. The brainstorming phase is the creative aspect of VE, during which the estimators -and often the entire building team - take a second look at the specifications and try to determine what alternate systems or products or construction methods could perform the required function at a lower cost.

Sometimes this may involve a comparison of several structural systems or skin types. Often, it goes beyond systems and products to look at construction methods that might be employed, bidding techniques that might save money, purchasing procedures, administrative systems and processes, scheduling, life cycle costs such as maintenance and energy utilization.

Here, the construction manager/general contractor must be familiar with retail functions and systems to contribute meaningful ideas. For example, many large retail chains have master specifications for their stores, but an experienced contractor will know these characteristics and may still be able to suggest various options to adapt the store or center to the geographic conditions, or to improve function, aesthetics or cost-efficiency.

3. The recommendation phase allows the entire building team to evaluate the VE results. The VE team has identified what it believes are alternatives that will either enhance the quality, lower initial or life cycle costs, or shorten the construction schedule.

It is up to the architect and the owner to accept or reject the alternatives - or to modify them to suit the owner’s needs or enhance the design. Often, the VE reports do no more than lay out the facts and costs. What VE does is to give the owner, as well as the other team members, the information and perspective needed to weigh alternatives.

Graph A

Ability to Impact Cost
4. During the implementation phase, the building team takes the recommendations that are accepted by owner and architect and works them into the final design and construction schedule.

Worth the Effort

How the VE effort can meet the needs of owners with different priorities and interests can be illustrated by several projects on which the technique was successfully applied.

On the 145,000-sq. ft. Sears store at Westridge Mall in Phoenix, which cost about $3,600,000 in 1980, the owner saved more than $157,000 through VE.

A large part of the savings was made by analyzing the exterior skin and the structural system of the building early in the design. Four exterior masonry wall types were compared for initial cost maintenance and aesthetics. They were eight-inch high, integrally-colored, split-faced, fluted masonry block, eight-inch high, painted, split-faced, fluted block and the same two options with four-inch high blocks. To save on expensive maintenance, the choice was narrowed down to the integrally-colored blocks. By choosing the eight-inch instead of four-inch blocks, approximately $19,800 was saved, primarily in labor costs.

Three schemes for the structural system were studied, ranging from $3.83 to $4.53 per square foot. By selecting the least expensive of the acceptable alternatives, Sears saved approximately $43,000.

Other savings were made to maintain the required quality while bringing the project within the owner’s budget.

Fiesta Mall, built by Kitchell in Mesa, Arizona, in 1978-1979, was a lump sum, competitive bid project. Although input in the early phases of the project was not possible under this type of contract, our firm conducted considerable value management to resolve construction feasibility problems. We worked with the architect to develop the best way to construct the mall’s skylights and researched alternative floor coverings when the originally specified tile was found to have durability problems.

In a case like this, value management can help prevent project delays and minimize costly order changes.

Small Changes Save Big Blocks

Many shopping center owners and developers are interested in renovation of existing properties, now that some of the early malls built in the 1950s are in need of facelifts. At the open-air Park Central Mall in downtown Phoenix, the most cost-effective method of enclosing the structure (which our firm built in the late 50s) currently is being analyzed.

Working with the architect and owners, five different schematic designs for cost consequences and construction feasibility have been studied. Three were conventional structural steel plans with varying architectural detail and finishes, while the other two used structural steel with Teflon-coated fiberglass fabric skin. There was a $50,000 difference between the most and least expensive cost estimate, providing the owners with the information on cost and feasibility early on, before expensive design time was spent on a plan that might have exceeded the owner’s budget and presented unforeseen construction problems.

Often, VE recommendations concern improvements in construction methods that impact design. For example, on a Sears store in Flagstaff, Arizona, plans called for the sprinkler system to run parallel to the main structural members. By rotating the sprinkler system 90 degrees, to run at right angles to the structural steel and attach to it, we were able to save the owner approximately 20% of estimated installations costs.

On the same project, we developed an alternative method for constructing the lighting system, substituting a plug wire system for the original scheme, which called for all light fixtures to run off a pigtail. With the new system, the light fixtures could be removed completely for repair and another fixture plugged into place immediately - an obvious improvement in flexibility, ease of maintenance and in long-term cost benefit to store operations.

Some owners don’t want VE, despite its well-documented results. Some are not will-


Value engineering during the construction phase is called value management. As used on the Fiesta Mall in Mesa, Arizona, it studies the most cost-effective ways to resolve any problems with constructability or product availability.

Various schematic designs were analyzed for cost and construction feasibility of enclosing Park Central Mall in Phoenix, with a cost range of $50,000 between the most and least expensive schemes.
ing to spend the small initial investment that the
review entails. Experts estimate that a
comprehensive VE effort will cost from 0.1% to 0.5% of the project cost and will take several weeks to a month. Savings realized from the effort typically range from 10% to much more.

The other drawback for some owners is the
time they must devote to the effort. Once
again, the savings may justify the involve-
ment of the owner, but the process can be painful. The nature of VE requires that some
decisions be made.

How can owner/developers who want
thorough VE for their retail projects make sure they will get it? First, consider VE capabilities when selecting a construction manager/general contractor. Do they listen to your needs? Which one offers a strong technical staff of estimators and schedules? Who has prior examples of VE studies that yielded good results for their clients? Check the references and success stories.

Second, select one person in your organiza-
tion who can represent you on the project team. This person must be able to make deci-
sions or obtain a decision quickly, and must be willing to get involved in the process.

Third, if you are serious about VE, you may want to write into the contract with your archi-
cect and construction manager/general contractor the specified stages at which you want VE studies conducted - usually after schematics are completed, during the design/development stage, and finally, when working drawings are completed.

Basically, VE is value seeking, an effort which involves an entire building team - the owner, the architect and construction manager/general contractor - in getting the most store or shopping center for the least cost. It isn't easy, but most owners who have used it find the results well worth the effort. As center retailers and developers know, it pays to shop for value.

Robert A. Feger is vice president-construction for Kitchell Contractors' Arizona Contracting Division. Feger has been with Kitchell since 1963 and has served as project manager on a number of retail projects. In his position, he has overall responsibility for management of the firm's operations department and for projects under construction. Kitchell, one of the top 50 building contractors/construction managers in the U.S., has offices in Phoenix, Newport Beach and Dallas.

**APPLES TO APPLES**

*by A. E. Mudge, CVS*

Making sure that you are comparing apples to apples is one of the most difficult things to do when analyzing different companies Cost Improvement/Value Engineering Activities. One of the reasons for this difficulty, in part, is the various methods used by companies in calculating both their Project and Annual Savings.

Although there are a multitude of methods used, the three most prominent are noted below. These are shown with the most conservative first and progressing to the most liberal.

A. (Direct Material + Fringe Benefits) x Annual Volume - Amortized Implementation Cost = Project Savings.

B. (Direct Material + Direct Labor + Full Burden) x Annual Volume - Project Savings.

C. (Direct Material + Direct Labor + Full Burden + Programmed Expense) x Annual Volume - Project Savings.

A second factor, which further complicates this comparison, is the direction of the pro-
grams intensity. If the efforts are directed at the Material and Expense Costs content, the difference between the three methods will not be that great. However, if the efforts are directed at the Labor content of the costs, the results of the three formulas can be greatly skewed, particularly "B" and "C". This is because Full Burden is usually taken/calculated as a percentage of Direct Labor.

There is yet a third factor which makes the comparison more difficult; this is Annual Volume. Some companies use planned Annual Volume with no post-audits for correction to actual Annual Volume. Other companies use more than one year's Volume, sometimes two, three even up to five years, to determine Savings.

When comparing one company's Cost Im-
provement Activity results to any other, be sure that you know all of the facts and factors being used. Make sure that you are comparing apples to apples.

(Fallon Continued)

blessed conflagrations that baked the Summnerian and Babylonian clay tablets into lasting brick, and we have a treasure-trove of information, wisdom and judgement going back to the dim past. For the present we have the here and now advantage of the specialists in the value task group.

**REFERENCE**

Park, R.J. and Associates: *Park's Catalog of Frequently Used Functions in Value Engineering*. This catalog is a substantial contribution to our work.

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SOCIAL VALUE ANALYSIS AGAINST UNEMPLOYMENT
by Giacomo d’Ascanio

I. WORLD UNEMPLOYMENT AND ITS COST FOR THE COMMUNITY

Figure 1.1 shows world employment data in the years 1972-1980, from studies conducted by the ILO (International Labor Office) of Geneva, Switzerland, and the UN (United Nations), New York. The trend is clearly an alarming one.

The cost of unemployment can be calculated taking into account its various components, grouped (for simplicity’s sake) into seven classes:

1. Benefits distributed directly to unemployed workers.

2. Governmental loss of social security contributions normally paid by workers and employers.

3. Loss of income tax. In a number of countries the unemployment benefit paid out is not subject to tax, either because the government intends it that way or because it falls below the minimum tax threshold. But at the same time the unemployed person continues to derive a full entitlement to all other social security benefits, including retirement, medical and educational, although neither the unemployed person, nor his former employers, are making contributions.

4. Costs incurred due to incentives provided in various forms to create jobs in depressed industries, or in particular sections of the population.

5. Losses in industrial output, which would otherwise have been produced by the unemployed labor. This loss is a real one and provokes a general decrease in the national standard of living.

6. Costs ensuing from the socially and politically unstable situation, discouraging investments.

7. Human cost of unemployment, which can be qualified by hypotheses.

If we limit our calculations to the first three classes in the list, we notice that they are enough to total a cost that is roughly the same as the wages earned by the workers before losing their jobs.

Figure 1.2 shows the cost of unemployment in the countries of the European Economic Community (EEC), according to data collected by Neil Irons.

II. FAILURE TO INTRODUCE INNOVATIONS AS NEW AND DECISIVE CAUSE OF TODAY’S UNEMPLOYMENT.

Unemployment has always existed in the working world, ever since the times of ancient Egypt, as pointed out by J.A. Garraty in his Unemployment in History. It is only in the last 200 years that this problem has been taken into consideration by a growing myriad of scholars. Sir Frederick Morton Eden (1797) is regarded as a pioneer, and contributions towards a thorough study of this issue have been made by, among others, T.B. Malthus, A.C. Pigou, and J.M. Keynes.

In recent years, particular relevance is to be attributed to the studies conducted at the International Institute for Applied System Analysis (IIASA), Laxenburg, Austria, by C. Marchetti et al., on the great events capable of affecting energy sources and the oddly rigid law that regulates the succession of inventions and innovations (See Fig. 2.1). These occur, one might say, like cherries that ripen when their time comes. The distance between invention and innovation is statistically defined and shows a tendency to become shorter with the passing of time. Figure 2.1 shows a series of three historical inventions and innovation waves (represented, respectively, by wood, hay power, and coal) and the present oil wave. The pairs of straight lines represent respectively the dates when important inventions and innovations took place. The left side represent fundamental inventions and the right side, the dates of their implementation. For example electricity production: invention 1788, innovation 1800. It is also surprising how the diagram predicted, with considerable insight, the fall of oil prices that we are witnessing.

The most worrisome datum seems to be the trend in the capital stock required for the maintenance of a job, which shows a more than linear growth (See Fig. 2.2). This was clearly put by W. W. Leontief: “Given the rate of technological advance, the creation of one additional job that 20 years ago might have required an investment of $50,000, now demands $100,000 and in 20 years will demand $500,000 even with inflation discounted.”

With regard to political
Jantsch defines technology as "the vast area of utilitarian application of the contents of physical, natural, and behavioral sciences," and includes in it "all technical notions, as well as medicine, agriculture, management, etc., with their practical and theoretical teachings." ¹³

In this concept of technology, products and services may be regarded as particular technological forms developed to cope with given tasks. We can thus affirm that a vast new discipline encompassing applied research, transfer of technology and utilization, is now well under development. It could aptly be named the Science of Technological Innovation.

In the sphere of this new science, Value Analysis (VA) represents the inner core, that pertains to the domain of envisioning and creating the new where "envisioning" and "creating" are used as operational terms.

To give an example, one might say that if we had to set up a condensed course to teach managers this new discipline, we should teach them Value Analysis. In fact, the problem that must be faced (if one has to adapt oneself satisfactorily to a new situation and, in general, if a productive unit is to survive at all) is a problem of "value": if we assume as a measure of value for products or services the ratio of worth (duly quantified) vs. total cost of production, such a ratio should of necessity be greater than 1. Above 1 means success, 1 means survival, less than 1 means commercial death.

Nevertheless, everything conspires to bring this ratio as low as possible.

Scientific progress provokes a continuous change in the user's tastes and requirements: if the products on the market are not modified when the necessity arises he finds decreasing satisfaction of his need. The advancement of technology coupled with normal production "learning", allow the most skillful manufacturers to produce at decreasing costs, and to sell more cheaply, lowering further the numerator of this ratio.

Diminution of the manufacturer is also caused by the progressive saturation of the markets, to which is added a decrease in market satisfaction for an identical commodity unit, as accounted for by the well-known law of diminishing utility.

In many countries we are witnessing a serious crisis in the public sector, particularly in public utilities, and it may well be getting worse. Similar to what happens for any other product or service, the problem is one of value.

The government (which has accepted, no doubt for praiseworthy reasons, full liability for the expenditure originating from the service) shows inability to administer it economically in a changing world, and thus compels the community to pay for it with extremely burdensome prices. There results a diminished capacity for expenditure for all parties involved, a lowering of the general standard of living, and, beyond a certain point, an irresistible push towards unemployment.

It is not enough, however, to be capable of solving the problem of innovation in purely technical terms alone. It is often uneconomical for the productive unit to proceed with innovation. At this stage I must stress that to innovate, to create new products or services of high value, is equivalent to creating more jobs, and therefore to accomplishing a social function that should in any case be accomplished.

It may thus be inferred that it is entirely proper for the community to reward whoever introduces the "social function" in his production unit, as explained in sections 4 and 6.

Going back to the feasibility of innovation, one might raise objections, or set limits both of fruition or technology. On this point, too, I am an optimist. Regarding fruition, there comes to our aid (either luckily or unluckily) man's insatiability, which requires ever new products or services, in sharp contrast with man's satiability derived from a particular product or service. As to possible technological limits,¹³ there is no irreplaceable technology, the market buys "functions" not products, as expounded in section 4. It will suffice to point out here that in the future most of the means of transport, which have so far performed the function of "permitting communication" will be replaced by more expedient means so that the physical movement of human beings will become unnecessary. A provision must be made, perhaps, for a certain degree of "viscosity" of the system, which suggests the necessity of not charming too swiftly. Once mankind has reached a general level of well-being, any ad-
III. A MODEL FOR THE PRODUCTIVE SYSTEM: THE ERGOSPACE

A productive system, whether it pertains to a whole nation or a part of it, when examined from an occupational standpoint, can be represented in terms of the model (See Fig. 3.1) named "Ergospace".

The representation takes into account two variables only: the capital intensity and the personnel employed at the various levels of capital intensity. It is possible, if need be, to use a third variable having discrete values and relating to the geographical distribution of the labor force.

We define as capital-intensity of a productive unit the relationship "t" between the capital stock and the total number of workers. This relationship, when it is regarded as an aggregate value, is also assumed to be fairly representative of the level of technological development in its usual meaning. Let us then represent with portions of space the labor force which is available. More exactly, the areas encompassed by the two levels "t" and "t1" in Figure 3.1 represent, on the appropriate scale, the labor force available between the two levels, while at a disaggregate level the areas represented by circles in Figure 3.4 are single productive units of given products.

If a third variable is introduced (See Figs. 3.2 and 3.3), it is also possible to concurrently take into account the geographical areas of particular interest, e.g. the North vs. the South, very often occupationally extremely diversified.

The diagram shows available labor that results from the sum of employed and unemployed workers. For the distribution of the unemployed among the various technological levels it is, of course, necessary to make the appropriate hypotheses. Figs. 3.1.b, 3.2.b, and 3.3.b represent unemployment in the range of technological development in the productive system under consideration.

It can be particularly interesting to follow dynamically on the Ergospace the occupational phenomenon, as outlined in Fig. 3.4. The birth of new products or services takes place, as a rule, in the inferior sections of Ergospace, characterized by low intensity of capital. A typical instance of such a phenomenon occurred in the U.S. in 1973-1979, when three new services (fast food, health care, and business administration) were capable of creating an average of 1 million new jobs each.

At a later stage, a fusional phenomenon of the productive units takes place, and thus at a superior level greater units are formed, the productivity of which is higher than the original units. This is followed by a further technological advancement, which causes labor derating. The process of contemporary technological growth and labor squeeze normally goes on, despite additional fusions, till the death of the product or service due to obsolescence. It is noteworthy how birth and death of new products or services produce serious occupational consequences only in the geographical areas which witness the cycle, because of the viscosity of labor mobility. It is almost as if Ergospace were a pot of boiling water, with bubbles moving along vertical axes only.

In the suggested representation, the average national level of technological development is at a barycentric height of the whole ergospace surface (See Fig. 3.5). The figure shows (a) a typical developing country, (b) a typical developed country, and (c) a country with a marked imbalance between its developed northern region and its developing southern region, as evidence by the use of a third variable.

IV. SOCIAL VALUE ANALYSIS AS SPECIFIC DISCIPLINE TO OPERATE INNOVATION IN SOCIO-ECONOMIC TERMS.

Human knowledge has become so vast nowadays, and keeps changing so swiftly, that an individual is no longer able to plan an industrial plant, a product, or any service whatsoever from beginning to end. Every product must be the result of the co-operation of a group of professionals who contribute their respective skills. This is a truth almost everybody agrees with, although almost nobody really knows what to do next. VA*1, in its essence, purports to transform the work of this team of professionals into a successful venture, by organizing into a single body of discipline the skills and methods most necessary to fulfill such a task. First of all VA is required to develop a language that allows communication among experts from several fields, for example marketing, finance, design, production, buying, costs, management, and, if necessary, other departments of a firm, so that they may form a productive unit capable of exchanging views profitably and creatively. This purpose is served by the so-called "functional language".

For example, a chair will no longer be described as having four legs, a seat, etc., but according to its functions: "outdistance body", "support body", etc., so that the prob-
lem under examination may be viewed by everybody in its essential components. Such a language has another important advantage: it is highly creative. Going back to our example, it would be most natural to design a masonry chair if the function "permit shifting" were not required, or, perhaps in the Far East where the function "outdoorness body" would be unnecessary — one might design a carpet to serve as a chair. Further, if the functional language were not enough to generate ideas, it would always be possible to use other systems of creative thinking. Each function requires, also, that it be stated in quantitative terms, and for each function it is necessary to consider the various solutions by taking as a guideline their respective values defined in terms of the ratio performance vs. cost.

This discipline suggests the appropriate methods to quantify immaterial things such as beauty, or prestige — so that, to afford evaluation of different solutions, they will be exactly defined in terms of monetary value and cost.

It should be possible to obtain for each function a diagram that represents the user's satisfaction, and a diagram showing the cost of realization, to afford maximization of value. (See Fig. 4.1).

There are various methods to assess and select the best solution. Some of them are extremely simple, others extremely complex and are used, if need be, with the assistance of the experts in operational research. All this is a part of a work program, the "job plan", which is a series of logical operations that must be performed successively and systematically.

One might go as far as to state that in every firm there is, scattered in the cultural background of its employees, the necessary body of scientific knowledge.

The firm only needs to be offered a way to break the watertight bulkheads, both organizational and psychological, that prevent these ideas from circulating and getting fused into a successful new production. It is also true that somewhere in the firm some good ideas are normally discarded, being regarded as "foreign bodies". VA, with its methods of multidisciplinarian team work and its knowledge of psychology applied to team work, succeeds in overcoming any process of rejection and makes it possible to accept change as an idea or plan pertaining to the individual business functions.

Very often a VA study is not limited to analyzing and optimizing a single product, which has a relative importance in the whole business economy; rather it is an attempt to optimize the value of the entire output. In analyzing and optimizing a single product, the individual business functions.

Figure 4.1

I explained in the paper presented at the 1975 SAVE Conference, Functions such as "create jobs", "reduce pollution", etc., that the individual firm cannot afford to take into consideration, are social functions. Since the benefit arising from them will be enjoyed by the community, it is appropriate that the costs thereof should be paid by the community up to the extent and at the cost accepted by it.

One can thus understand how, while the use of VA affords management of change and, therefore, innovation on economic grounds, the adoption of Social Value Analysis affords management of change and innovation in socio-economic terms with important consequences on employment.

VI. A PROPOSAL TO ADOPT RULES PROVIDING INCENTIVES FOR SOCIAL VALUE ANALYSIS STUDIES.

From the above, particularly sections II, III, and IV, it should be clear how it is to be hoped that the government will decide to motivate Social Value Analysis studies having as their social function: "create jobs". It is high time for us to state the problem of definition and quantification of the incentive. The provision for incentives, if its ultimate goal is to fight unemployment, must be expressed with regard to various possible situations.

Figure 5.1

<table>
<thead>
<tr>
<th>ARMY</th>
<th>NAVY</th>
<th>AF</th>
<th>DLA</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. VECPs Submitted</td>
<td>411</td>
<td>122</td>
<td>234</td>
<td>213</td>
</tr>
<tr>
<td>b. Percent of Total</td>
<td>41</td>
<td>12</td>
<td>23</td>
<td>21</td>
</tr>
<tr>
<td>c. VECPs Approved</td>
<td>124</td>
<td>32</td>
<td>84</td>
<td>96</td>
</tr>
<tr>
<td>d. Percent of Total</td>
<td>37</td>
<td>10</td>
<td>25</td>
<td>29</td>
</tr>
<tr>
<td>e. $ Savings (k)</td>
<td>13,533</td>
<td>1,393</td>
<td>6,858</td>
<td>438</td>
</tr>
<tr>
<td>f. Percent of Total</td>
<td>61</td>
<td>6</td>
<td>31</td>
<td>2</td>
</tr>
<tr>
<td>g. VECP Approval Rate (line c - a) (%)</td>
<td>30</td>
<td>26</td>
<td>36</td>
<td>45</td>
</tr>
<tr>
<td>h. Average $ Savings/Approved VECP (e - c) (K)</td>
<td>109</td>
<td>44</td>
<td>82</td>
<td>5</td>
</tr>
</tbody>
</table>
(a) Birth of new products or services, capable of opening entirely new markets.

(b) Birth of products or services to replace the old ones, which will not open new markets, but will be helpful for their induced effects (for example, alternative energy sources).

(c) Steps aimed at countering the reduction of personnel due to technological advancement.

In general, it is logical that the incentive should be allocated: (1) in a form which can be audited; (2) in proportion to an assessment of the number of jobs to be created; (3) in an amount not higher than the cost the collectivity should bear for the unemployed eliminated during the economic life-cycle of the new product, new plant, or new service.

For new plant or new service (hypothesis "a"), the calculation of new jobs is comparatively simple; the same applies to the incentive attributable to them. Particular attention must be paid to the event more and more diffused because of its inherent effectiveness when production of the new product or service is going to get started in one or several assembly points, which require a limited number of hands, while the component parts of the same are produced elsewhere. In such an occurrence, the benefit to be allocated should be calculated on the total number of new jobs, (jobs in assembly points plus jobs in component parts departments).

The computation of the incentive to be allocated to finance technical or marketing research, or the development of plans to create new products or new services, is more complex and yet, thanks to the appropriate techniques of statistical evaluation, quite feasible.

In the case of a firm intending to install the equipment to produce a product or a service having "induced effect" (hypothesis "b"), the computation of the incentive cannot be done for each case separately. The authority must first supply the appropriate data, which must be obtained through a study for this purpose. For example, the authority could determine that a saving of x tons of oil per year creates a new job, because of its induced effect. This can be regarded as a typical example. In some countries it is impossible to stimulate growth of GNP (which would automatically create new jobs) because imports would rise to such an extent, due to the coefficient of marginal propensity to import, that the balance of trade would be dangerously unbalanced. This creates monetary problems and inflation. Nor is it possible to rely on the simultaneous growth of exports because they depend on other factors, such as home demand and competitiveness of national output. An example of incentive regulations to save energy is in the rule 1303/78EEC of the European Economic Community (EEC).

And finally, as to hypothesis "c", which regards a company in a depressed segment of market needful of restructuring, the incentive could be computed making the hypothesis of a standard technology, having a standard productivity with regard to the labor factor. In a period of diffused unemployment and as long as the crisis persists, the adoption of relatively labor-intensive costs thus ensuing must be borne by the community. We leave out the practical calculation of the incentive that does not present (if the suggested hypotheses are adopted) any difficulty whatever. The results are briefly shown in Figure 6.1, which explains how the firm that benefits from the incentive avails itself of a reduction in cost of labor. This can be used in any intermediate form to the following:

1. At a parity of total production cost, output can be increased up to the extent that its iso-cost "2" becomes a tangent of output isoquant "I".
2. At a parity of output, an inferior total cost can be obtained: iso-cost "3" tangent of isoquant "II".
3. In a fast-changing world, specific production equipment rapidly becomes obsolete. Production shifting gets increasingly costly and is much slower than is the case with less specialized and less costly machinery.

The model here proposed under the name of "Ergospace" clearly shows how the long wave of employment is substantially dependent on the birth, or absence of birth, of new products or services.

It is thus that innovation (in the form of creation of ever new products or services) is the basis for a sound and stable employment policy.

Social Value Analysis (of which we have outlined the characteristics and ways of implementation) can be regarded as the most promising tool now available to successfully manage innovation and fight unemployment.

National authorities must become convinced of the rationality of this new configuration of the problem and test its validity by a few trials.

REFERENCES
YOU HOLD THE KEYS

by A. E. Mudge

You hold the keys to successful cost improvement that will unlock the door to the reduction or elimination of unnecessary costs.

Starting today, you should take the positive approach toward every problem and/or high cost areas. Take the approach that you, and only you, are the first person that has seen or isolated this situation. Then take the few minutes necessary to outline the conditions, including as many specifics as possible. Then submit this information, along with your idea(s) of how to correct and/or overcome it, to your Cost Improvement Department.

Such problems or high costs can include, but not be limited to, Products, Processes, procedures or Paperwork. In reality they can be related to anything that incurs cost to your location. Only by each individual highlighting such problems or high cost areas that they see, can we ever hope to correct or eliminate them.

Only as we work together, as an informal or formal team, can we maintain or improve our competitive position in the market that we serve. Such competitiveness maintains or increases our sales in today’s and tomorrow’s economic environment, which, in turn, improves the job security of everyone at your location.

Yes, your eyes, ears and mind hold the vital keys; put them to work today, tomorrow and every day.

SAVE VIDEOTAPE RENTALS

The Society of American Value Engineers has three videotapes for your use through the permission and cooperation of Joy Manufacturing Company and Harbridge House, Inc. These tapes are for top executive use only. Therefore, we make the tapes available for one of your meetings, so that your entire top management staff can view it. We think you will agree that these 30 minute tapes will be the answer you have been looking for and in your language.

VIDEOTAPE #1 CHAIRMAN’S THOUGHTS ON COST IMPROVEMENT

This tape is by Mr. J. W. Wilcock, President and Chairman of the Board, Joy Manufacturing Company. This tape has been prepared so that executive management is talking to executive management. It was made prior to Mr. Wilcock's retirement.

Mr. Wilcock put his thoughts on Value Engineering and JOY’s Cost Improvement Program on this tape. He is a strong proponent of the concept and feels that every top executive should avail himself of this invaluable tool. He explains how it should be applied, where it should report in the organization, what it takes to have a successful program, training required and a few examples of how it has been applied.

VIDEOTAPE #2 VALUE ENGINEERING FOR MANAGEMENT

This tape is by Mr. George J. Rabstejnek, President of Harbridge House, Inc.

Mr. Rabstejnek put his thoughts on Value Engineering on this tape after viewing what has been available throughout the Society. He is a strong proponent of the concept and feels that every top executive should avail himself of this invaluable tool. He explains how it should be applied, where it should report in the organization, what it takes to have a successful program, training required and a few examples of how it has been applied.

VIDEOTAPE #3 COST IMPROVEMENTS’S CONTRIBUTION TO FINANCIAL FLEXIBILITY

This tape is by Mr. Andre R. Horn, Chairman of the Board, Joy Manufacturing Company. Prior to becoming Chairman, Mr. Horn was Vice Chairman and Chief Financial Officer.

Mr. Horn demonstrates in this tape how an effective Cost Improvement Activity contributes to improved Return on Sales, Return on Investment, Debt Ratio and Return on Equity. He accomplishes this by simplified P&L and Balance Sheets of a model company, first without Cost Improvement, then with Cost Improvement using actual audited results of JOY’s activity.

The equipment required is a ¼” cassette player capable of using NTSC recorded tapes and a compatible television set. The equipment can be rented, but usually can be found at most larger corporations in their training facilities or in the Industrial Relations Department.

Please request the Letter Agreement for Videotape #1, #2 or #3 from the SAVE Business Office, 220 N. Story Rd, Suite 114, Irving, TX 75061. If you fully agree to abide by the terms and conditions stated therein, have your President or Vice President sign it and mail one copy with your check for $50.00 (per videotape) to the SAVE Business Office.

Thank you Bill.

I’m highly impressed with the presentation that was made on behalf of all of the various countries represented here. I think that’s marvelous! It’s these kinds of things that I think are important to spread the gospel of value throughout the world and to avoid some of the problems facing us in the area of “Protectionism”. I feel somewhat like addressing a UN gathering this morning with all the flags. I don’t have a grasp of all of the languages that the presenter had, but I was reminded of a little incident that happened to me about a dozen years ago when I was a young fledgling vice-president of Brunswick Corporation and running our Marine business. We were dedicating a plant in Petit Rechain, Belgium and we had everybody in our company that was anybody over there, the entire board of Directors, all of our Corporate officers and many dignitaries from Belgium. They had asked me to dedicate the plant in French, and I don’t speak French. So I had gone over early and had memorized my remarks. But immediately before going on and dedicating this plant I was kind of walking back and forth, obviously a little nervous. The then Chairman of the Company came up to me and said, “Jack, what’s the matter?” I said, “Mr. Hanigan, I don’t speak French and I’m going to go out before this huge gathering of people and make a fool of myself speaking French.” He said: “Just relax - just relax - and don’t worry about it. First of all you don’t know what you’re saying, and the way you speak French they won’t know what you’re talking about either.” So that was the one time that I did try to speak bilingually and I made it.

I’m delighted to be here and I appreciate this opportunity to talk to you. I feel somewhat inadequate, however, because frankly I could perhaps best be described in the area of Value Analysis and Value Engineering as being the champion. I am not the doer. The people who are responsible for whatever measure of success we have reached, in what I consider to be a very important program for our company, would be Dr. Henry Marvin, our Vice-President of Technology, Bud Rose, our Director of Corporate Purchasing, and Hoshang Karani, our Corporate Manager of Value Programs and General Chairman of this Conference. Those are the people who have really made it happen within our Company. However, since you asked that I tell you what’s going on, I’ll do the very best I can to tell you what we have accomplished, when it started and what our results have been to date.

It’s kind of interesting how this whole issue came to my attention. It was when I was running our Mercury Marine operation, in Fond du Lac, Wisconsin. I was called Group Executive at the time, and we did not have Value Analysis or Value Engineering anywhere within the company. It was about the mid 70’s and I had read a number of papers on Value Analysis and Value Engineering... and I was intrigued. But, being a non-technical type I really didn’t know whether there was substance there or not. So I called the head of our Engineering Department in and I said, “I think there is something here and I think we really ought to look into Value Analysis and, of course, subsequently develop it into Value Engineering.” The response I got, which made a lasting impression on me was, “This isn’t anything new. We do it all the time and apparently you’ve just picked up a new buzz word.” I must say that that disturbed me a little bit, but frankly and candidly, we didn’t start any Value Analysis programs while I headed up our Marine operation.

When I moved from our Marine Power operations to become President and Chief Operating Officer of the parent Company a year or two later, I was still bothered by this issue. Bud Rose, whom I introduced earlier, was brought into our Company from Xerox, and I said to Bud, “I really believe that there is something to this Value Analysis program, but I don’t know how to start it and I don’t think there is very much enthusiasm in the Company for it. I would really like to have you go out and look into it and come back and tell me what you think we would have to do to get it started. We don’t have to get it started in all of our divisions.”

At that time, we were organized into some 14 divisions, but I said, “Let’s get it started even if we have to pay for it.” And typically in larger companies, why, you have those corporate folks who are the overhead, and the operating divisions who are not. At any rate I said, “I’ll pay the bill. Just find me one of our operations who is willing to start with a Value Analysis program.”

Bud did, and interestingly enough, we went right back to where I had come from, Mercury, which shows that Bud was a lot better salesman than I am. And we decided to institute a Value Analysis program in some four or five different specific product areas at Mercury. We paid all the cost. We went out and brought in outside consultants. It was suc-
cessful. In the first year, measurable quantifiable results were something like a million dollars and, obviously even in a business that large, you know, a million here and a million there and pretty soon you're starting to talk about real money. People got enthused and, therefore, Value Analysis really started within our Company because of Bud’s efforts in our Marine operation.

One of the things we do within our Company, which I don’t think is abnormal or unusual, is to bring all of our Division General Managers together at about four times a year, typically, in our Skokie Headquarters. Each of them makes a presentation to the Corporate Officers and to each other. It’s kind of a “share the knowledge” type of a quarterly meeting where what one is doing in one business may have application to another one of our businesses. And I had asked that Value Analysis be presented by the successful division that used it; namely, Mercury. And we have done this continuously over the years, if not only to share the benefits among our people, but to try to encourage other people to use initially Value Analysis and, of course, subsequently, Value Engineering where appropriate.

It has spread into other such exciting products as the core of our basic business, Bowling, in a number of major capital equipment items; and into billiard tables - a major, major cost reduction and improvement in quality was done in this product line by the application of Value Analysis. Believe it or not, we did it in our retail bowling centers. We own and operate world wide more than 200 retail bowling centers. Value analysis was applied in the architectural design and physical layout of those bowling centers. And it was done in our Technical business in industrial filtration, valves and controls and related products.

By the end of the decade of the 70’s we looked like we had something going. We then decided that it might be a good idea to have the program brought in-house. We did not have anyone in the area of Value Analysis. Bud Rose was championing the program from his role as the head of Corporate Purchasing. We did a little study and we decided that we could do a much better job if we could bring the professionals into the corporate staff and offer the service for our operating divisions. And, of course, we found Hoshang who has a done a marvelous job for the Company.

The numbers that they have given me are that we have done about 40 Value Analysis programs within Brunswick. We have encompassed about 35 product lines and we have saved well over a million dollars a year from that program. And I'll tell you one of the reasons why I have championed this. I have personally sat through the beginning and the end of a Value Analysis program with Hoshang. I have seen him bring a group of people in who didn’t know how they were going to approach the subject, and have seen them take these people through the introduction to Value Analysis. I have come back and revisited those same people when they made their presentation to management, and I have been very impressed. I have been impressed not only with the results, but I have been impressed with the absolute total enthusiasm of our employees who were involved in the program of Value Analysis.

We think that our program in Value Analysis is giving us a payoff of about 9-to-1 through cost reductions and other things that we have achieved. More important than anything else, in terms of my own personal philosophy, is that we are providing better values to our end-users. And in the final analysis if you think about why all of us are in business and why we have plants and why we have employees, we have them for only one fundamental reason. And that is to provide our customer base, whoever they are, with a superior value at a profit. And that’s the only reason you’re here and that’s the only reason I’m here. And if we don’t supply a superior value to our group of customers at a profit, we aren’t going to be around. So Value Analysis is very much a cornerstone of what we are doing in the Company.

I had an example with Hoshang in our valve actuator plant in St. Charles, Illinois. We had a product line that we were about to discontinue. And we decided, what the hell! Let’s give it to a group of people using value techniques and see what happens. The result was that costs were cut in half! In half! The product is now in the market and we are gaining market share. This shows how smart people are if you only tap the human resource and the skills which they have. So, obviously, we’re pretty excited about Value Analysis. I don’t know that we are one of the companies that you can say have saved the most money, but I know the program is alive, it’s vibrant, our people like it, our people are using it and we have moved into many of our operations from what I would call Value Analysis to where we should be and that is into Value Engineering.

I have all of our operating division general managers report directly to me as Chief Executive. I have eliminated all the tiers of management between them and me. I’ve done this within the last year. Therefore, I travel all over the country. I’m in a pretty active guy. Last week I was in about four different cities in five days and the fifth day was at a Carroll College Board meeting. I was at Zebco where we make fishing reels and talked to the General Manager and asked him what he thinks of Value Engineering. His comment was, “We had the best first run introduction of a product we’ve ever had in the history of Zebco.” A week ago Friday I was at Mercury, our largest operation. I talked to the Division General Manager and Vice President of that operation and he very proudly told me what he had accomplished that I had never accomplished when I was up there. He said, “We now get our new products in on time and we meet our cost targets.” I never did that.

And now I’d like to talk about apples and oranges for just a moment because I really think a better way of looking at our success in this whole area of Value Analysis and Value Engineering is a total picture of what we have done in the area of cost reductions. And at the forefront of it was this program. In 1979, I decided after budgeting that I was going to give everybody a cost reduction target. It didn’t make any difference whether it was capital related, whether it was Value Analysis related, or whether it was Purchasing related. But I wanted specific ad hoc committees established to address certain issues in the Company. We set a target. It was fairly modest, about $18 million. We exceeded the target and our cost reductions were far in excess of $20 million. In 1980, we did the same thing. We beat our target!

I think there’s been a tendency within American business, because of the mentality of some senior people, to play a portfolio management game, and not addressing the basic issue of tending to the store and running the business. A lot of people will pay lip service to something and then let it die. I can tell you this. We aren’t going to let this program die at Brunswick.

I’d like to tell you a little bit about some of the things that we have done, to emphasize the point that I’m making about the value of this program. About 14 months ago our Company almost was lost as the result of an unfriendly tender attack, which we defeated. I don’t know whether you know this, but of every six companies which are attacked, about five lose and one survives. We survived! It was a very difficult period for the Company and upon its conclusion, I was made Chief Executive Officer of the Company from Chief Operating Officer. It was at that time I decided to make a massive move back towards what I consider to be fundamental values of the business. I chose to decentralize the Company in a massive way. To give you an idea of how massive, we had three group executives and we eliminated the entire group executive level. To show you what I thought of my previous job, I eliminated it! We had 14 divisions, we cut to 8. We reduced our Corporate staff by over 50% and I said to the operating divisions, “Your responsibility is to create wealth and we’re going to get out of your way and worry about doing that. But created wealth is created by designing, making, selling, and servicing high quality products and services. No wealth is created in the Corporate office, although Corporate does play a key role in the preservation of wealth. Wealth is created by the doers who design, make, sell, and service products. Therefore, Corporate staff was reduced significantly.

Because these actions affected people, it wasn’t a very pleasant task. But I felt it was necessary for us to do that within Brunswick. I won’t try to pretend that I personally used Value Analysis at all, but we looked very thoroughly at where the values were coming from within the Company and where they
weren’t. And we reduced on that basis and saved our Company some $18 million in corporate overhead on an annual basis. Why do I tell you all of that? Because one thing we did not touch was Value Analysis or Value Engineering.

The major reductions we made were in the accounting and administrative areas. I said we’re going to stop counting beans and make more of them.” And we significantly reduced what I consider to be the administrative part of business. I have been ser­monizing for sometime on this whole issue and I think our Company really understands it now. I really believe they do. I say to you again, for whatever it’s worth, that wealth is only created in designing, making, selling, and servicing products. There is no other wealth created. And energies and resources, both financial and human, ought to be directed towards that area; more people and better people designing and making and more and better people selling and marketing and servicing products. That’s where we’re focus­ing our energies. I have a very simple philosophy. Number one, the most important thing I have to work with is our people. If our people feel that we have a set of common goals and common values and if they believe that what I stand for is consistent with their value system, we will be enormously suc­cessful and if they don’t, we won’t. So my core point and philosophy is to serve customers and only to serve customers. And I think American business, and for that matter business abroad, has gotten fouled up in worry­ing about that part of business which doesn’t create wealth and forgetting that we survive only if we provide a value to the end­user at a profit. Therefore, I’ve refocused our efforts and said to our people, the customer must come first in every respect and every endeavor and in everything that we do in business . . . and that means we must provide better values.

And finally I must talk about quality. We have a very effective “cost of quality” pro­gram that is spread throughout the Company by that same technology organization. We believe at Brunswick if we have a problem we ought to fix it and if we have a problem in cost in a good product area, we’re going to ad­dress it. If the answer is Value Engineering, well, that’s what we are going to do, and we don’t want a bureaucracy to obscure the problem.

Thank you for the opportunity to talk to you this morning. I think Value Engineering is ex­cellent. I compliment all of you for your diligence and your commitment to it. There is little doubt in my mind that the world is going through a difficult period in time in which more and more you hear about “protectionism”. That is of no value to anybody. “Protectionism” is the refuge of people who have not done their job of making sure that they provide superior values to their audience of users. Whatever form it takes, that is a fact. And Fair Trade is the right way to go. I believe there is a big difference between Fair Trade and Free Trade, but that isn’t the purpose of this discussion. You have a large task, an im­portant task! You have an exciting task because you involve people and it is as ex­citing to see a group of people from different disciplines come together and really get turned on, and have positive results because of their efforts. That’s what life is all about.

Good Luck!

Mr. Jack F. Reichert is the President and C.E.O. of Brunswick Corporation, and a member of its Board of Directors. He is a trustee of Carroll College in Waukesha, Wisconsin; a member of the University of Wisconsin Business School Advisory Coun­cil; a director of McCormick Theological Seminary in Chicago, Illinois; a trustee of the First Presbyterian Church of Lake Forest in Lake Forest, Illinois; and a director of NROADS/Chicago, Inc.

At the SAVE Conference in Chicago, the title of “Honorary Vice President of the Society of American Value Engineers” was awarded to Mr. Reichert in recognition of his personal commitment to and active support of an active value program at Brunswick Corporation.

MURPHY’S LAWS

IF MORE THAN ONE PERSON IS RESPONSIBLE FOR A MISCAL­CULATION, NO ONE WILL BE AT FAULT.

IN CASE OF DOUBT, MAKE IT SOUND CONVINCING.

NEVER ARGUE WITH A FOOL, PEOPLE MIGHT NOT KNOW THE DIFFERENCE.

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EASTERN SHORE REVISITED

A Society Insight
by Tom King

Easton, on the Eastern Shore - Maryland
TIME: Early morning - September 23

Nostalgia for Breakfast

Five years have slipped by. As I turn the corner past the rustic EDGEFIELD signpost, leading to the Miles estate, my pulse quickens. How nice it is to be again invited to the autumn SAVE national board meeting, regularly hosted by Larry and Eleanor Miles.

Peacocks temporarily halt my further progress down the lane leaving a moment for reflective thought. When last here things were quite different for SAVE; and perhaps for me also. The board had then contemplated and approved the business office move from Michigan to Texas. It was not an easy decision to make. However, as a board member at that time I had vetoed the move. In retrospect, I think it had something to do with my lack of enthusiasm for the name - IRVING. Going from Smyrna, Georgia to Southfield, Michigan, and on to Irving, Texas, in just a few short years was disruptive but all in all, necessary.

I wonder if peacocks are good to eat? The flock has now edged off the lane and I continue into the Miles parking circle. Most vividly one can recall the feasts served up by Eleanor on previous visits here: roast duck, peach cobbler, crab quiche, and damson plum brandy graced the menu.

At Sedgefield: A Colloquy with L.D. Miles, Father of Value Analysis

Recently an employment agency called my office in search of a qualified value engineer to fill an important job opening. During the discussion the agent inquired the following:

What credentials or qualification would the most ideal candidate possess?

Hesitating not a moment, I replied, "Look for a college major in education, a former high school principal perhaps, with some added bank teller experience. As an adder it would be helpful if he/she had somehow managed to get a B.S. degree in electrical engineering, ultimately became a buyer,
and finally, consider it a big plus if his/her birthplace was the state of Nebraska."

The person that I am describing is of course - Larry D. Miles, the father of the Value Engineering discipline.

Larry is a most important contributor to the autumn SAVE board meeting; his remarks are ever timely and imaginative.

"You know," Larry begins in a reflective tone, "The Value Analysis technique is not for everybody. It is a technique for smart, effective, productive people. Just give them the technique and they can go to town.

"After all," Larry continues, "Even champions need coaching. The greatest golf heroes still have a coach, the same with tennis pros, skating champions, and the like. So it is with training engineers, buyers or whomever in Value techniques. The VE development process always makes participants more valuable contributors to their company."

During the first VA workshop held at the Edison Club in Schenectady, New York, in October, 1952, Larry addressed the group this way, "Gentlemen; we are expecting each of you to at least double your value to General Electric and possibly yourself during the next thirty days. We expect you without exception to be able to earn ten to twenty-five dollars for every dollar it takes to support you and your office."

And they did. The first VE workshop, a milestone in VE history, lasted four weeks and included about sixty people.

Larry Miles is adamant about one philosophical point. Value techniques not only builds better products which cost less, value techniques build people; ie, the people who participate in workshops and other VE projects. It builds people during that job (workshop) and every job thereafter. The impact is far reaching. The VE process teaches people to think; it helps people with important decisions to make. Concluding his remarks to me, Larry adds, "The proof and evidence of VE's staying power is out there. VE is being used throughout the world. People are becoming so much more competent through the VE process that they have to make progressive changes just to absorb the extra competency.

One could go on and on about Larry Miles, but not now.

---

**Board Meeting Activity**

To my pleasure I found the prevailing style of SAVE board meetings efficient, productive, and imaginative. SAVE has matured. Sub-committees now perform the detail work that formerly sapped much of the Board's critical meeting time.

The atmosphere is candid and open. Short and long-term planning seems tied to strategies; and the strategies in turn are supported by goals and action plans.

Had it not been for the severe economic downturn one imagines that the growth of the Society would have been dramatic.

Some significant happenings occurred during the autumn meeting:

**Conferences**

- Selected San Antonio/Marr-ott Hotel for the 1985 SAVE annual conference; Miami Beach for the 1986 conference, and then beyond - perhaps New York.
- Early conference registration will be rewarded with a choice of books from NBO.

**Financial**

- Arrangements are being made so that members can use credit cards for conference fees and dues payments.

**Communications**

- Appointed Jim Vogl as Technical Editor of Value World in addition to Interactions and conference papers.

**Outreach**

- Arranged the distribution and use of new video tapes, "Miles, The Story of Value Analysis."
- Arranged for news correspondent to represent SAVE at SJVE Tokyo conference and the presentation of the annual L.D. Miles award.

**Systems**

- Reviewed and approved the new chapter effectiveness manual.
- Described methods for National Society to assist deteriorating chapters.

In addition to these agenda items the SAVE board brainstormed the subject of...

"How can SAVE better provide for the wants of Corporate executives?"

What a full two days. One gets the feeling through observation that the Board activities are upbeat and an even better situation lies ahead.

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COST AND VALUE
ENGINEERING SERVICES

Charles L. Mason, recently announced the formation of a new value engineering company in Acton, MA. Mason, President of Cost and Value engineering Services, will be specializing in certified value engineering, design to cost and cost reduction.

G.K.S., INC.

Russ Brannen, SAVE Fellow, reports that a small business he represents, G.K.S., Inc. has just received acceptance of a Value Engineering Change Proposal thru the Army Tank Command, Warren, Michigan. The saving to Spare Parts Procurement amounts to $240,000 over a 3 year period. This is a first submission by this Company to the Army.

NORTHERN TELECOM

Value Management Stressed

Northern Telecom Canada is expanding its value management program to include key supplier companies. The program will use VE and VA techniques (the components of value management) to explore ways in which productivity can be improved and costs reduced.

D.E. Knox, director, purchasing, for Northern Telecom Canada said the objectives of the seminars will be to improve long-term productivity; generate funds for NTC’s Open World project and its associated research and development; improve Northern Telecom’s competitive position in the marketplace, and make better use of assets and resources.

Northern Telecom cannot achieve its objectives unilaterally, he said, especially when suppliers contribute 70 percent of the components of manufactured cost of sales.

NTC, he said, will supply the training and expertise that suppliers can then apply in their own operations. Not only will their participation lead to a sharing of the ultimate benefits, he added, but the seminars will provide information that will allow them to initiate in-house value management programs.

NTC has already conducted a pilot seminar with a Montreal firm that supplies its analog and radio division. This program achieved a 20 percent cost improvement factor and the benefits were shared equally with the supplier.

Employee Suggestions Pay Off

Savings and rewards came in record numbers this year for Northern Telecom Canada’s suggestion awards program.

The $2.3 million Northern Telecom saved was the highest in the program’s 40-year history. It also meant employees received a record $416,000 for their suggestions, which reached an all-time acceptance rate of 77 per cent.

The suggestion awards program pays employees $25 for an adopted suggestion, and a further 20 per cent of the amount of money the suggestion saves Northern Telecom in one year.

It’s a program whose benefits are priceless, according to one of its former administrators, Ed Cavanaugh, who retires this year after 35 years with the communication cable plant in Lachine, Quebec.

He told winners at the banquet: “I would recommend to all suggestors here tonight, and especially the executives, to encourage the suggestion plan because it’s a very profitable institution.”

NTC president David G. Vice, also urges employees to keep thinking of ways to improve efficiency and productivity. In a message to employees, Mr. Vice said this year’s performance “reflects a realization that in today’s highly competitive marketplace, our future depends on our ability to become more efficient and more productive, as individuals and as a company.”

— Network, Vol. 4, No. 2

PARKER HANNIFIN
CORPORATION

Team Study Saves 20%

If you made a butter churn, you wouldn’t start with a solid log and whittle away everything but the sides and bottom. You’d probably use slats for the sides and a round plug for the bottom and use the wood only where you needed it.

A hydraulic accumulator could be compared to a butter churn. Traditionally, an accumulator starts as a forging, where metal is removed to make the cylindrical shape similar to the housing for the butter churn. By incorporating a new process, however, an ac-
Value Engineering Specialist Diploma Program

The Department of Engineering and Applied Science, University of Wisconsin, Madison has granted its first diploma as a VE Specialist to Andrew V. Rushing, Physical Plant Director, Mid-America Nazarene College, Olathe, Kansas. Started in the academic year of 1978-1979, the VE Specialist Diploma Program presently has 25 enrollees. The objectives of the program are to educate individuals in the latest VE Techniques, understand the fundamentals of organization as it relates to the VE activity, carry out an individual VE Independent study project, and expand knowledge in related subjects.

The program requires 45 Continuing Education Units (CEUs) where each CEU represents 10 hours of classroom or assigned study. Five required courses totaling 36.6 CEUs, 6 CEUs of electives in related subjects and 2.4 CEUs for preparation and successfully passing a final exam make up the 45 required units. Twenty-five of the CEUs are of the independent study type and can be taken at home or in a person's place of business.

Presently two series of courses leading to the VE Specialist Diploma are available, one for individuals in industry or services and one for those in design and construction.

Participants can transfer up to eleven CEUs. Completion of the program must be within a four year period and all transferred courses must be within the four year time frame. A minimum of 37.5 CEUs should represent courses receiving a satisfactory.

VEI, INC.

Dallas-based Value Engineering Inc., an internationally recognized, multi-disciplinary engineering and consulting firm, has announced a new corporate identity and name, VEI, Inc.

The name change is consistent with other changes within the organization, including a shift in corporate objectives and direction, according to Bill Lenzer, VEI's founder and president. "Many factors entered into the decision to change the company's name," Lenzer said, "not the least of which is a certain level of confusion surrounding the terminology and concept of VE."

In the recent past the company has encountered various difficulties in business dealings, due to different interpretations of the term, "value engineering". Many people have the opinion that VE consultants only conduct workshops and seminars or are constantly immersed in analytical detail," Lenzer said. "It finally became apparent that our name had become somewhat of a detriment to the firm's future development. Following our analysis of our organization and a decision to redirect our efforts, the name became the first item for change on our agenda."

VEI has also shifted to a greater emphasis on marketing and business development by identifying and pursuing new markets and potential clients. The firm projects a planned pattern of growth over the next five years.

VEI was founded in 1975 as Value Engineering Inc. It has shown consistent growth since its inception and has reached the point when corporate officials feel the Company is at a cross-roads. "VEI represents more than a name change," Lenzer commented. "It represents the first step of a philosophical and marketing re-direction which we believe will result in a very bright future for the organization."

— Viewpoint, Vol. 1, No. 1

IIE

Project Management

A revised, expanded version of Project Management: Techniques, Applications, and Managerial

Issues was released in August by Industrial Engineering and Management Press, a division of the Institute of Industrial Engineers.

The second edition includes updated information on the scientific approach to organizing, scheduling and managing projects. The new material keeps pace with changes and developments since the book was originally published in 1976 and is targeted at those who work with project management and as a text for company training programs, college classes and education seminars.

Productivity Today, An Inside Report

This survey was based on 723 responses which were the result of 2500 questionnaires mailed to US members of the Institute.

For further information on the above items contact: IIE, 25 Technology Park/Atlanta, Norcross, GA 30092 404/449-0460.

SME

SME announces a new video tape cassette service called "The SME Video Magazine" featuring panel discussions with manufacturing leaders on new technology developments. For further information, contact SME Video Communications Department, Society of Manufacturing Engineers, One SME Drive, PO Box 930, Dearborn, MI 48121 or call Steve Bollinger 313/271-1500, ext 402.

Plan to attend 1984 SAVE International Conference May 6-9 Sacramento, California and celebrate SAVE's 25th Anniversary
Following are two abstracts from a series by The Hospital Council of Western Pennsylvania. For further information contact: Mr. T. Robert Sankey, Director, Research and Development, The Hospital Council of Pennsylvania, 500 Commonwealth Drive, Warrendale, PA 15086 (412) 776-6400. Copies of the abstracts are available for $10.00 each and a 350 page full report backup to the abstracts is available for $75.00.

Project Abstract Number One

URINARY CATHETER CARE

STUDY INDICATES A POTENTIAL COST AVOIDANCE OF

$1,304,576

FOR THE 98 MEMBER HOSPITALS OF THE HOSPITAL COUNCIL OF WESTERN PENNSYLVANIA

A detailed evaluation revealed daily meatal care using a regimen of soap and water with an application of antimicrobial ointment around the meatus/catheter junction provides effective patient care at a fraction of the cost of commerical catheter care kits. The study reveals a potential cost avoidance of $1.03 per procedure, or $20,600 a year for the hospital that implements this recommendation and performs 20,000 procedures annually.

STUDY ASSIGNMENT

The VASE Steering Committee selected a value analysis study of urinary catheter care, as recommended by a member hospital. A preliminary study conducted by that hospital revealed a potential avoidance of $73,392 per year by eliminating the use of a manufacturer’s kit. In addition, there is considerable controversy over the efficacy of daily meatal care. Based on the potential savings and controversy, the Steering Committee recommended a Project Team consisting of a urology nurse, epidemiologist, pharmacist, management engineer, central supply director and materials manager to conduct the study. The Committee felt a multidisciplinarian approach would lead to a solution based on all points of view, involving all related professionals in the program.

The Project Team was to review the available information on urinary catheter care, draw from their individual as well as collective expertise and develop guidelines and recommendations for member hospitals.

METHODOLOGY: VALUE ANALYSIS

The value analysis technique was selected for its systematic approach in analyzing a product function, determining function necessity and developing the most economic alternative without sacrificing quality patient care.

INFORMATION GATHERING

The Project Committee conducted an indepth review of relevant literature and research studies on this subject, existing procedures in member hospitals and the products presently used.

From this review, the team developed an understanding of the controversy that surrounds the urinary catheter care issue. Britt, et al. reported that twice daily meatal cleaning with a povidone-iodine solution, followed by the application of a povidone-iodine ointment, failed to reduce the infection incidence of catheter-associated bacteria.

Cleland, on the other hand, studies the effect of no catheter care, except what the patient did independently, without any teaching, versus a variety of perineal care regimens. He concluded from his data that perineal care does reduce the frequency of bacteriuria regardless of the protocol used.

In addition, the team found a variety of procedures being performed in hospitals. Some hospitals have no catheter care procedures; a variety of potential products were reviewed; soap and water, povidone-iodine scrub, isopropyl alcohol, peroxide, chlorhexidine gluconate, tincture of green soap, povidone-iodine ointment, triple antibiotic ointment and a variety of sterile and nonsterile kits. However, no correlation could be drawn between the regimen or products used and the related number of urinary tract infections due to the many variables examined.

INVESTIGATION

The Team investigated the feasibility of each of the potential solutions derived in the Evaluation Phase. The investigation involved consulting with other professionals, Steering Committee, vendors and other member hospitals. In addition, a cost analysis was performed for each alternative.

Criteria for the investigation of product alternatives included the effectiveness, advantages/disadvantages (e.g., drying properties, pragmatism of application, etc.), packaging options and costs.

Soap was selected for its ability to reduce surface tension, which allows the freeing up of microbial skin flora. The friction produced by the washcloth can then remove the superficial flora. Other advantages of using soap include its enexpensiveness and availability. Either a wrapped or unwrapped bar of soap may be used as long as it is not maintained in a moisture containing environment that allows bacterial growth. The bar may be stored on an absorbent paper towel.

An antimicrobial ointment was selected to provide a physical barrier, blocking the migration of bacteria along the catheter through the meatus. Povidone-iodine ointment is a broad spectrum antimicrobial with a low rate of allergic reactions (less than 2 percent). It is effective against gram-positive and gram-negative bacteria, fungi, viruses, protozoa and yeasts. The ointment lubricates the meatus/catheter junction, reducing irritation of the mucous sheath. A triple antibiotic ointment may be substituted for patients with allergic responses to povidone-iodine at approximately the same cost. However, triple antibiotics have a narrower scope of antimicrobial effectiveness and have a potential for neomycin sensitivity for neomycin nephrotoxicity and ototoxicity.
A further regimen option for meatal care is the application of povidone-iodine solution, but only when following the removal of gross contamination with soap and water. The solution provides an uncertain degree of prophylaxis to the area and the manufacturer's claim states antimicrobial activity exists as long as the reddish brown color can be seen. However, the presence of moisture and uric acid tend to dilute the length of povidone-iodine's activity. Povidone-iodine is relatively inexpensive, readily available and comes in a variety of packaging. Other antiseptics reviewed had narrower scopes of antimicrobial effectiveness, higher rates of allergic responses and were more costly.

It was determined only one nonsterile exam glove is necessary for the soap and water procedure. This glove should be used for applying the ointment bead. Two gloves may be used in the providone-iodine procedure to prevent the hands from being stained and to apply the ointment bead.

Most patients with indwelling catheters have an underpad beneath the linen. The underpad could also be used for disposing of used supplies. If the soap and water procedure is performed during routine A.M. care and linen change follows, the expense of using an additional underpad can be eliminated.

A separate washcloth should be used exclusively for meatal care. The washcloth can be reusable or disposable. The cost per use of either type is about the same. However, the disposable washcloth has been found to provide less friction. Also, the hospital which presently uses reusable washcloths incurs additional inventory and distribution costs for the disposable cloths.

The cost analysis, including materials and labor, indicate the most economical means of supplying the required products for meatal care is to use the floor stock already available on the nursing unit (Exhibit A). In addition to the initial savings on the purchase price of the kit, only the required quantities of supplies are used for each patient. Furthermore, the use of existing floor stock items allows the same products to be used for a number of procedures other than urinary catheter care while avoiding the additional costs of stocking specialized kits containing similar items. The additional time spent collecting supplies from a centralized location is insignificant when compared to obtaining a kit from the same area.

In the investigation, the Team also noted that the current guidelines issued by the Center for Disease Control state no particular meatal care regimen is currently endorsed.

**RECOMMENDATION**

Having completed all phases, the Team developed the following premises: the reduction of microbial contamination at a particular site normally leads to a subsequent decrease in the risk of infection from that site. Therefore, daily meatal care is warranted.

It is strongly recommended a procedure replacing the use of an antimicrobial cleanser with a simple soap and water cleansing around the meatus, followed by application of povidone-iodine ointment around the meatus/catheter junction be used. Since this procedure is merely an extension of routine daily care and does not constitute an invasive procedure, it should be regarded as a clean rather than a sterile procedure. As a consequence, minimal skill is needed and all levels of nursing personnel can be taught the proper technique. It is further anticipated the simplicity of the procedure will tend to promote its frequency of performance. Addressing the question of frequency, the Team recommends the protocol be performed daily, following routine A.M. care and thereafter as needed to maintain cleanliness of the catheter and perineal area.

A further regimen of povidone-iodine solution can be used, but only following the removal of gross contamination with soap and water. Povidone-iodine prep pads provide the most effective and economical means for applying this antiseptic. The use of routine floor stock items, instead of a kit, is the most economical means of procurement.

It is recommended this proposal be submitted to the hospital's infection control and product evaluation committees, with full administrative support, for implementation. The full documentation of the study and investigative techniques is available at The Hospital Council of Western Pennsylvania for a fee.

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**EXHIBIT A**

**URINARY CATHETER CARE COST COMPARISONS**

<table>
<thead>
<tr>
<th>PRODUCT COMPONENTS</th>
<th>RECOMMENDED POVIDONE IODINE PRODUCTS</th>
<th>IN-HOUSE VENDOR</th>
<th>VARIOUS NONSTERILE</th>
<th>VARIOUS NONSTERILE</th>
<th>VARIOUS STERILE</th>
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<tr>
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<td>Drape, Patient (Top)</td>
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<td>Underpad</td>
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</tr>
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<td>Povidone-Iodine Solution</td>
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<td>Povidone-Iodine Swab Stick</td>
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<td>Cotton Tip Applicators</td>
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<td>ICS Tech 30sec/kit</td>
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**AVERAGE TOTAL COST/PROCEDURE**

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**SAVINGS**

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**Annual Procedures**

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Pricing:
Washcloth:
Reusable: $0.04/use includes initial cost, laundering and replacement.
Disposable: $0.035 ea. 9½ x 13½”
Glove, nonsterile latex exam: $0.049 ea.
Ointment, antimicrobial, ½ oz.: $0.055 ea.
Soap, bar, 1 oz. unwrapped: $0.02/use
Povidone-iodine prep pad: $0.03 ea. (4)

CS tech labor cost: $6.00/hr. + 25% fringe benefits divided by 120 kits/hr.

Kits: Average cost of HCWP contract pricing and survey of noncontract vendor pricing.

Exhibit B

Urinary Catheter Care Procedure

(soap and water)

To be performed following morning bath or A.M. perineal care.

1. Assemble supplies.
2. Wash hands thoroughly.
3. Spread underpad beneath patient to protect bedding.
4. Saturate washcloth with soapy water.
5. Grasp penis with one hand and retract foreskin for male patient.
5.1 Wipe around the meatus in a circular motion with washcloth.
5.2 Rinse the washcloth and rewipe area.
5.3 Pat dry.
6. Spread the labia with one hand for female patient.
6.1 Wipe each side of the labia and the meatus with one downward stroke, rinsing the washcloth after each wipe.
6.2 Rinse the washcloth and rewipe area.
6.3 Pat dry.
7. Wipe catheter with one downward stroke from meatus to catheter/tubing juncture.
8. Don glove.
9. Apply iodine ointment bead around catheter where it enters the urethra.
10. Remove glove and place on underpad.
11. Dispose of underpad and glove by rolling up underpad and discarding in appropriate receptacle.
12. Discard dirty water, replace washcloth and rinse basin.
13. Visually inspect intact system.
14. Wash hands thoroughly.
15. Chart procedure.

Value Engineer

B.S. degree in I.E., E.E., or M.E.; or equivalent experience. Successful completion of V.E. seminar preferred. Minimum of 1 to 3 years recent V.E. experience in a manufacturing environment, preferably electronics assembly.

Position is located in So. Arizona and offers growth opportunity as well as a pleasant family-oriented lifestyle.

Please send your resume to:

Personnel Department
Chamberlain Manufacturing Corporation
P.O. Box 1809
Nogales, AZ 85621

We are an E.E.O. Employer M/F/M.

Resource Management
Through Value Engineering

R.J. Park and Associates, Inc. 861 Vinewood Avenue • Birmingham, Michigan 48009 • Phone (313) 646-4118

Value Engineering

Senior/Principal Value Engineer

A challenging position for an innovative individual to lead teams of 4-6 people using V.E. techniques to develop cost effective alternatives. BSEE or BSME and 5-8 years’ high-tech experience in design and manufacturing including cost reduction analysis at both the systems and subsystems level.

Interested candidates should please send resume to John Moon at the address below.

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INVESTIGATION

The objective of the investigation phase was to investigate the feasibility of each potential solution derived in the evaluation phase. This investigation involved consulting with other professionals, including the Steering Committee, vendors, recognized authorities and other member hospitals. In addition, a final cost analysis was performed for each alternative.

Mouthwashes are generally defined as medicated liquid used to cleanse the mouth or for treating diseased states of the oral mucous membrane. Many of the commercial mouthwashes are used for rinsing the mouth and providing a pleasant taste or odor. Mouthwashes designed only for cosmetic purposes are not included in the Council on Dental Therapeutics' (CDT) acceptance program. A two percent solution of sodium bicarbonate or a warm hypertonic sodium chloride solution is often recommended following instrumentation and in the treatment of acute inflammatory conditions. CDT also does not presently recognize any substantial contribution to oral health in the unsupervised use of mouthwashes by the general public. CDT feels the need for therapeutic mouthwash and its degree of usefulness should be ascertained by a dentist or physician. Mouthwashes that do overcome mouth odors may be masking the real problems of poor oral hygiene or an oral systemic disease. In light of the CDT position on mouthwashes, the Team does not recommend the routine distribution of any mouthwash to patients. Therapeutic mouthwashes should be controlled by the pharmacist and issued upon physician order.

Toothbrushes were felt to be required for good oral hygiene as they contribute to quality patient care. A substitute could not be found that provided the friction needed to remove gross debris from crevices between the teeth and oral cavity. The Team feels toothbrushes are relatively inexpensive and recommends toothbrushes be available on the nursing unit for those patients who do not already have one. Routine proper brushing is recommended over the use of mouthwashes and can also be used for cleaning dentures.

Toothpaste (dentrifrices) used in conjunction with a toothbrush does decrease the incidence of dental caries and gum disease, reduces mouth odors and enhances personal appearance by intensifying the scrubbing power of the toothbrush in the removal of stains, debris and dental plaque on the tooth surface. Most dentrifice formulations contain the same types or classes of agents, principally abrasives, foaming agents and flavoring mixtures in addition to water, thickening agents or binders. Low abrasion dentrifices or water should be used by patients with exposed root surfaces, cementum, dentin or softer restorative materials.

Based on its effectiveness, the Team recommends dentrifice be available on the nursing units for patients who do not already have their own. They feel the additional cost of a fluoridated dentrifice is not necessary for the acute care patient with an average patient stay of seven days and a small tube is adequate.

Oral swabs (disposable toothbrush) consist of a ribbed sponge on a stick and a foaming dentrifice. They are used to loosen gross debris in the mouth and freshen breath. Supported by a random survey of hospitals, the Team does not find this product to be effective in performing its intended function. A tongue blade wrapped in gauze is suggested for a substitution of this product if needed.

Lemon glycerine swabs are used to moisten the lips and mouth of postoperative patients who are not able to take fluids orally, elderly patients with limited oral intake and occasionally for unconscious patients who are on mechanical ventilation. The swabs also soothe tissue, freshen the breath, lubricate the gums and comfort the patient. The Team felt this product contributed to patient care and could find no substitute. It is recommended these swabs be available on the nursing unit and used as required for patient care.

Body lotions contain emollients which soothe and moisturize dry, irritated skin and reduce odor. The Team found most nonmedicated body lotions sold to hospitals to be acceptable, except those containing parabens which may cause allergic reactions. Parabens, mainly methyl and propyl, panthenol, are used to prevent bacterial growth. A four-ounce bottle was determined to be adequate for the average patient stay and should be disbursed only by prescription from nursing floor stock to avoid unnecessary costs.

Body powder containing talc was found to be one of the most popular personal care items issued to patients and is used to absorb excessive body moisture and reduce friction against the skin. Commercial talcum powder is a mixture of talc (hydrated magnesium silicate) and other silicates which have been reported to cause pneumoconioses, lung cancer and cancer of the pleura and gastrointestinal tract. Numerous cases of infantile powder aspiration have also been reported to cause severe bronchiolar obstruction leading to respiratory distress and ultimately death. Talc is milled soapstone which chemically resembles asbestos and is a mixture of particulate and fibrous material. The latter, much like asbestos and some talc, contains silica. There is some uncertainty regarding which component of talc is responsible for pulmonary fibrosis. The asbestos-like fibers are the most important fibrogenic portion of talc.

The Team also noted powder presents a safety hazard if allowed to spill on the floor where a patient may slip on it. Powder has also been found to cause vaginal irritation.

In view of the abundance of evidence that talc may be hazardous to the patient, the...
Team does not recommend the disbursement of body powder by the hospital.

Since corn starch has many of the negative qualities of talc and provides a good media for bacterial growth, it is not recommended as an acceptable substitute for talc. Use of talcum and starch based products should be only by prescription at the discretion of the physician.

Bath oil is an all-over skin moisturizer valuable in the treatment of dry skin and mild skin irritations. However, it is not considered a routine personal care item. Due to the hazard it presents by causing the patient to slip in the bathtub, we recommend this be a prescription item dispensed by the pharmacy.

Toilettes, premoistened and individually packaged, are routinely supplied by several hospitals to avoid unnecessary cost. It is recommended either a moistened washcloth, facial tissue or napkin, which are already supplied, be used in place of toilettes.

Slippers (disposable) are an item hospitals frequently supply to patients who need them, while other hospitals have reported they include them in an admission kit. The most popular slipper is a foam ankle style. The Team reviewed alternatives, including flat paper “pocket style” slippers. In view of the “nonskid” safety feature of foam slippers, the Team recommends no substitutes. This item should be supplied only upon request and be distributed from floor stock.

Pencil (a two or three-inch) is a routinely needed item provided in most kits for marking the dietary menus. The Team recommends this item be distributed by the dietary staff during their clinical interview. The issuance of a pencil during the interview promotes patient contact with dietary, which is felt to facilitate quality patient care. In order to reduce potential cross-contamination, this pencil should not be reused by another patient.

Washcloths (disposable) are included in some admission kits. The cost per use of a disposable washcloth is about equal to that of a standard reusable. However, the Team did not feel disposables provided friction as effectively as reusables. The disposables also incur additional carrying costs when reusable cloths are used elsewhere in the hospital, and disposables have been reported to clog the plumbing when disposed in the toilet. Reusable washcloths are recommended over disposables and should be routinely distributed with other linen.

Facial tissues, used mainly for absorbing secretions, were felt to be required for most patients. A sample study revealed a significant number of additional boxes of tissue were still needed, in addition to the admission kit, requiring backup stock on the units. The Team, therefore, recommends a box of 50 (five by eight-inch) tissues be routinely supplied by the housekeeping department to patients upon admission. Patients with voluminous secretions should be supplied additional tissues from floor stock, as required, or have tissues brought in by the family.

Soap is required by all patients. Alternatives were reviewed for this function, including bar soap and liquid soap in containers. Since several cases of contamination were cited for soap in containers, and the cost per use is higher than bar soap, the Team recommends one 1/4 ounce unwrapped bar soap be issued to patients through the housekeeping department. The bar of soap should be stored on an absorbent paper towel to reduce the possibility of providing a medium for bacterial growth. Bar soap can then be replaced as needed during housekeeping’s daily rounds.

Toothbrush holder alternative recommended is wrapping the toothbrush in a paper towel and placing it in the patient’s drawer. Concealed moisture is a medium for bacterial growth, but the paper towel will not facilitate such growth through absorption if discarded daily.

Denture cup alternatives were reviewed, including those made of waxed cardboard. It is recommended a hard plastic denture cup be used with a tight fitting lid. Due to the high expense of repairing dentures which may crack upon impact with the floor and the relative low cost of plastic denture cups, the Team concluded the additional expense of the plastic was justifiable. This item should be available as needed from the nursing floor stock.

Sanitary napkin and tampon disbursement was reviewed. In light of the implications that tampon use may be associated with toxic shock syndrome, they should not be supplied; however, tampons may be brought in by the patient if so desired. In lieu of tampons, the Team recommends standard obstetrical pads be made available as requested from par stock or cart exchange.

Utensils (reusable), as noted in an extensive cost analysis, are considerably less expensive to reprocess than the purchase, stocking and distribution of disposable utensils, such as bedpans, urinals and wash basins (see Exhibit B). The study also indicated at this time the cost difference between using stainless steel or reusable plastic-nylon utensils was insignificant. The complete cost analysis is part of the original report and is available through The Research and Development Department of The Hospital Council of Western Pennsylvania.

**RECOMMENDATION**

Having completed all phases of value analysis with emphasis on function and evaluation of viable alternatives, the Project Team developed the following recommendation: personal care items for the routine acute care admission should not be distributed via admission kit. This recommendation is based on the following premises:

- Only six functional areas were identified requiring items routinely used by all patients and distribution channels presently exist in most hospitals for the disbursement and control of these items. Refer to Exhibit C for recommended channels of distribution for these six items and other personal care items.
- Items supplied in admission kits are also distributed in other areas of the hospital, duplicating carrying costs for the same items.
- Admission kits are frequently broken down for additional supplies required by patients; these kits are then incomplete and cannot be used for a new admission.
- The existence of an admission kit within the hospital promotes the introduction of other personal care items into the kit that may not be economical to the patient or hospital. In several cases these kits do not contribute to effective patient care for all patients receiving these items.

Distribution of a standardized admission kit does not necessarily contribute to quality patient care and does increase health care costs to the hospital and ultimately to the patient.

It is recommended this proposal be submitted to the product evaluation/standardization committee or cost containment committee for review and implementation with full administrative support.

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**CITY OF PHILADELPHIA WATER DEPARTMENT WATER POLLUTION ABATEMENT PROGRAM**

In an ongoing effort to update and expand a previously established Pre-qualified Procurement List for Value Engineering Services, the Water Department of the City of Philadelphia is soliciting Statements of Qualifications from Interested consulting firms.

Consultants may submit Statements of Qualifications by returning a completed Water Pollution Abatement Program Standard Qualification Form for Value Engineering Services to the Water Department. These forms may be obtained only upon written request to Mr. Leonard K. Bernstein, P.E., Design Coordinator, Philadelphia Water Department, 1180 Municipal Services Building, Philadelphia, PA 19107.

Consulting firms presently listed on the Water Department’s Prequalified Procurement List for Value Engineering Services may submit supplemental information if desired. Minority-owned and Women-owned firms are encouraged to submit Statements of Qualification.
### ROUTINE PERSONAL CARE ITEMS FOR THE ACUTE CARE ADMISSION

#### COST COMPARISONS

<table>
<thead>
<tr>
<th>COMPONENTS</th>
<th>HOSPITAL “A” PURCHASED KIT</th>
<th>HOSPITAL “B” PURCHASED KIT</th>
<th>HCWP RECOMMENDED ITEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mouthwash</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Toothbrush</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Toothpaste</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Comb</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Tissues</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Emesis Basin</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Water Pitcher</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Tumbler</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Powder</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Soap</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Wash Basin</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Draw String Bag</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Pencil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body Lotion</td>
<td>X</td>
<td>X</td>
<td>$5.20</td>
</tr>
</tbody>
</table>

**COST AVOIDANCE PER ADMISSION**: hospital “A” $4.41; hospital “B” $2.73; total $79.

**ANNUAL ADMISSIONS**

<table>
<thead>
<tr>
<th>Annual Admissions</th>
<th>Cost Avoidances</th>
</tr>
</thead>
<tbody>
<tr>
<td>10,000</td>
<td>$44,100.00</td>
</tr>
<tr>
<td>15,000</td>
<td>$66,150.00</td>
</tr>
<tr>
<td>20,000</td>
<td>$88,200.00</td>
</tr>
<tr>
<td>35,000</td>
<td>$154,350.00</td>
</tr>
<tr>
<td>50,000</td>
<td>$220,500.00</td>
</tr>
</tbody>
</table>

**TOTAL COST AVOIDANCE**: $2,804,310

**COST AVOIDANCE SUMMARY**

### PRICING

<table>
<thead>
<tr>
<th>Components</th>
<th>Contract Pricing</th>
<th>Through HCWP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tissues</td>
<td>$.15</td>
<td></td>
</tr>
<tr>
<td>Emesis Basin</td>
<td>.10</td>
<td></td>
</tr>
<tr>
<td>Water Pitcher</td>
<td>.33</td>
<td></td>
</tr>
<tr>
<td>Tumbler</td>
<td>.05</td>
<td></td>
</tr>
<tr>
<td>Soap</td>
<td>.14</td>
<td></td>
</tr>
<tr>
<td>Pencil</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>Emesis Basin</td>
<td>$ .79</td>
<td></td>
</tr>
</tbody>
</table>

*Includes inventory carrying costs.

**COST AVOIDANCE PER 785,521 ADMISSIONS**

<table>
<thead>
<tr>
<th>Hospital “A”</th>
<th>Hospital “B”</th>
<th>= Average Cost of Adm. Kit</th>
<th>= 785,521</th>
<th>= Cost Avoidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>$4.41</td>
<td>$2.73</td>
<td>$.57</td>
<td>$2,804,310</td>
<td></td>
</tr>
</tbody>
</table>

**COST AVOIDANCE PER UTENSIL CHANGE FOR 785,521 ADMISSIONS**

<table>
<thead>
<tr>
<th>Utensil</th>
<th>Cost</th>
<th>No. Admissions</th>
<th>% Use of Admissions</th>
<th>Cost Avoidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urinal</td>
<td>$.53</td>
<td>785,521</td>
<td>20</td>
<td>$83,265</td>
</tr>
<tr>
<td>Bedpan</td>
<td>1.74</td>
<td>785,521</td>
<td>40</td>
<td>546,722</td>
</tr>
<tr>
<td>Wash Basin</td>
<td>.07</td>
<td>785,521</td>
<td>80</td>
<td>43,989</td>
</tr>
</tbody>
</table>

**TOTAL COST AVOIDANCE**:

- **COST AVOIDANCE PER 785,521 ADMISSIONS**: $2,804,310
- **COST AVOIDANCE PER UTENSIL CHANGE FOR 785,521 ADMISSIONS**: $673,976
- **TOTAL COST AVOIDANCE**: $3,478,286

Substantial additional cost avoidance can be realized when those items identified in Exhibit C are transferred with proper notification to the gift shop for distribution.
## PERSONAL CARE ITEMS
### RECOMMENDED CHANNELS OF DISTRIBUTION

<table>
<thead>
<tr>
<th>Item</th>
<th>Alternative</th>
<th>Distribution Channel</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ROUTINE DISTRIBUTION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emesis Basin</td>
<td>Disposable/Reusable</td>
<td>Floor stock</td>
<td>Disposible</td>
</tr>
<tr>
<td>Facial Tissue</td>
<td></td>
<td>Housekeeping</td>
<td>Housekeeping replaces as needed daily. Approximately 1x 8&quot;</td>
</tr>
<tr>
<td>Pencil</td>
<td></td>
<td>Dietary</td>
<td>Golf pencil — Dietary interview</td>
</tr>
<tr>
<td>Soap</td>
<td></td>
<td>Housekeeping</td>
<td>Distribute upon discharge and daily rounds. 1.5 oz. unwrapped</td>
</tr>
<tr>
<td>Tumbler/Cup</td>
<td></td>
<td>Housekeeping</td>
<td>Disposable</td>
</tr>
<tr>
<td>Water Pitcher</td>
<td>Disposable/Reusable</td>
<td>Floor stock</td>
<td>Inservice of patient care personnel required</td>
</tr>
<tr>
<td><strong>PHYSICIAN ORDER</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bath Oil</td>
<td></td>
<td>Pharmacy</td>
<td>May cause slipping in tub</td>
</tr>
<tr>
<td>Mouthwash</td>
<td></td>
<td>Pharmacy</td>
<td>Physician prescription. ADA does not endorse: unproven effectiveness. Should not be used on dental patients. 4 oz.</td>
</tr>
<tr>
<td><strong>p.r.n.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bedpan</td>
<td></td>
<td>Housekeeping</td>
<td>Reusable stainless wrapped by central processing</td>
</tr>
<tr>
<td>Body Lotion</td>
<td>Petroleum</td>
<td>Floor stock</td>
<td>Should be nonmedicated. Only medicated when prescribed by doctor. May be eliminated if bath oil already prescribed by physician. 4 oz. bottle</td>
</tr>
<tr>
<td>Comb</td>
<td></td>
<td>Floor stock</td>
<td>As required</td>
</tr>
<tr>
<td>Denture Cup</td>
<td></td>
<td>Floor stock</td>
<td>Hard plastic with tight cap</td>
</tr>
<tr>
<td>Emery Board</td>
<td></td>
<td>Floor stock</td>
<td>As required</td>
</tr>
<tr>
<td>Lemon/Glycerine Swab</td>
<td></td>
<td>Floor stock</td>
<td>Should not contain sugar</td>
</tr>
<tr>
<td>Manicure Stick</td>
<td></td>
<td>Floor stock</td>
<td>As required</td>
</tr>
<tr>
<td>Petrolatum</td>
<td></td>
<td>Floor stock</td>
<td>As required</td>
</tr>
<tr>
<td>Razors</td>
<td>Prep shaver</td>
<td>Floor stock</td>
<td>As required</td>
</tr>
<tr>
<td>Sanitary Napkin</td>
<td></td>
<td>Floor stock</td>
<td>Do not recommend tampon</td>
</tr>
<tr>
<td>Sanitary Napkin Bag</td>
<td></td>
<td>Floor stock</td>
<td>As required</td>
</tr>
<tr>
<td>Slippers</td>
<td></td>
<td>Floor stock</td>
<td>Use sponge for antiskid</td>
</tr>
<tr>
<td>Straw</td>
<td></td>
<td>Floor stock</td>
<td>As required</td>
</tr>
<tr>
<td>Thermometer</td>
<td></td>
<td>Floor stock</td>
<td>Not personal care item</td>
</tr>
</tbody>
</table>

| **NOT TO BE DISTRIBUTED BY HOSPITAL** |                      |                      |                                                                                                                                 |
| Body Powder            |                      |                      | Causes pneumoconioses, lung cancer, makes floor slippery. Vaginal irritation potential                |
| Dental Floss           |                      | Gift Shop            | Personal preference item                                                                            |
| Denture Adhesive       |                      | Gift Shop            | Personal preference item                                                                            |
| Denture Cleaner        | Toothbrush/paste Peroxide Tube or Tablet | Gift Shop | Personal preference item                                                                            |
| Deodorant              |                      | Gift Shop            | Personal preference item                                                                            |
| Electric Shaving Preparation |                      | Gift Shop            | Personal preference item                                                                            |
| Hair Brush             |                      | Gift Shop            | Personal preference item                                                                            |
| Lip Balm               | Cold cream, lemon/glycerine swabs | Gift Shop | Personal preference item                                                                            |
| Sanitizer              |                      | Gift Shop            | Not necessary                                                                                       |
| Shampoo                | Soap and Water       | Gift Shop            | Personal preference item                                                                            |
| Shaving Cream          | Soap and Water       | Gift Shop            | Personal preference item                                                                            |
| Shower Cap             |                      | Gift Shop            | As required                                                                                         |
| Tampons                |                      | Gift Shop            | Personal preference item                                                                            |
| Toothbrush Holder      | Paper towel          | Use paper towel in room                                      |
| Toothettes             |                      |                      | Does not perform function it was designed to do                                                      |
| Tray                   | Paper towel          | Use paper towel in room                                      |

**ELIMINATED FROM SCOPE OF STUDY**

- Diaper
- Disposable Ashtray
- Nail Polish Remover
- Nursing Pad
- Paper Towels
- Perineal Cleansing Pad
- Rubbing Alcohol
- Soap Dispenser
- Toilet Tissue
- Underpads
- Washcloths
Already a world leader in digital switching, Northern Telecom has evolved into a new era where communications technology is increasing the world's capacity to accumulate, absorb and integrate information. In this competitive business environment, Northern Telecom has an increasing commitment to productivity improvement.

To further this commitment, we now require a Manager, Value Engineering to assist in planning, promoting, organizing and controlling the application of productivity generating techniques to tap the synergistic potential of Northern Telecom Canada Limited.

Based at our Toronto Headquarters, you will contribute significantly to the attainment of major financial targets and potential improvements measured in tens of millions of dollars annually.

Ideally you will have a minimum of 10 years design/manufacturing experience in an industrial environment coupled with an engineering degree. Certification in Value Engineering is a prerequisite as you will be involved in the leading of workshops or sponsoring of the same. The successful candidate must possess leadership qualities, be both highly motivated and motivating, and able to communicate effectively at all levels within the organization.

In addition to a competitive salary and comprehensive benefits including relocation assistance where necessary, we offer in-house training and development, and performance based progression.

Please send your resume, in confidence, to: Cynthia J. Yano, Staffing Manager, Northern Telecom Canada Limited, 304 The East Mall, Islington, Ontario, Canada M9B 6E4 (416) 232-2000
THE PROFESSIONAL SOCIETY VS. THE DRINKING GLASS

by A. E. Mudge, CVS

For too many years to mention I have run into a disturbing, sometimes mind-boggling situation in regard to professional society membership. A situation which I would like to discuss with you.

Many individuals, after paying their dues, immediately and for the tenure of their membership, sit back and say, “What is this society doing for me?” The longer the time from joining to the present, the angrier they become because they don’t see a return on their investment.

They fail to realize that with the society, like the drinking glass, something can be taken out only after it has been put in. It has been said that nothing can have value unless it has both an input and an output. These individuals forget or fail to hear and understand the first part of this bit of wisdom.

It is also important to consider the input in all its aspects. If the input is singular, so must be the output. Whereas if the input is multiple, so will be the output. If, in the case of the drinking glass, only water is put in, only that one basically tasteless element can be taken out. But if ice and other liquids are put in with the water, a more refreshing, tasteful combination can be taken out.

Yes, the output of a professional society is directly controlled by the input of its members. If everyone puts in their bits and pieces of knowledge and experience, the output will be a vast amount of meaningful exposure and feedback and knowledge for all its members.

In essence, we should be taking to heart a slight modification of President Kennedy’s famous statement, i.e., ask not what your society is doing for you, but what you can do for your society.