SAVE International
2009 Conference Abstracts

Responding to conference attendee requests to organize the technical program into topically oriented "tracks", SAVE International has restructured the technical program. Technical presentations are listed by track and then alphabetically by title. Presentation titles, authors, and scheduled times are subject to change. Check the SAVE International website (www.value-eng.org) for updated information.

Academic Track

Organized by the Miles Value Foundation, the Academic Track session focuses on continuing the scholarly discussion on value and presenting cutting-edge ideas and innovations.

Earning Value to Save Projects

Adedeji B. Badiru, Ph.D., PMP

This presentation will discuss a novel combination of analytical and management approaches to improve communication, cooperation, and coordination across a project life cycle for the purpose of enhancing earned-value performance of the project. Project value can be measured in terms of physical product output, provision of service, or achievement of some desired result. When value cannot be ascertained, it is usually due to deficiencies in the communication, cooperation, and coordination processes. The presenter will discuss how the Triple C model of project management can be used to mitigate such operational problems and ensure that measurable and sustainable value is achieved at each stage of the project.

The Economic Benefits of Green Buildings

Kim LaScola Needy, Ph.D., PE, CFPIM

United States Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system has seen a significant increase in the number of registered and certified projects. An important next step in advancing green building is determining if green buildings are performing as expected and determining their benefits. The author will present a framework developed to examine green building performance for a precast concrete facility and the results of the quantitative and qualitative metrics, including an engineering economic analysis, used to study the project's efficacy as a "green" building.

Deducting Lean Manufacturing: Decoding the Lean Manufacturing Genome by Means of Function Analysis

Javier Masini, AVS

Lean Manufacturing has been around for over two decades and yet the essence of this powerful production system has not been completely understood by many managers who get into the adventure of implementing such a system. One of the main reasons is that most of the learning approaches related to

learning it are based on inductions; meaning that the tools and systems that are part of Lean Manufacturing are learned separately and then the individual tries to figure out how to put them together in the system. This work is intended to approach Lean Manufacturing in a deductive way by describing the functions of some of the most common tools within Lean Manufacturing in order to simplify future training.

Reasons for Applying VM: An International Comparison

Mei-Yung Leung, Ph.D., MICIOB, MHKICM, MRICS, MHKIS, CVS, MHKIVM

Value management (VM) is a multidisciplinary team approach with a structured and analytical process for obtaining the best value. Therefore, it is difficult for the VM team to obtain a consensus in the workshop, especially when there involves different expectations for the application of VM in a project. This study investigates the reasons for practitioners to apply VM in a project/product. A questionnaire survey was conducted internationally. The results indicate that the reasons for applying VM in a project are different in various countries. In general, governmental requirement is the least reason for the application of VM in the industry, while decision support is the major reasons for practitioners to use VM in a project.

Construction

Construction papers focus on buildings, water and wastewater facilities, transportation, design-build, CM at risk/CM/GC.

Advance Value Metrics for Value Analysis of Construction Project

Jong-Kwon Lim, CVS, Ph D., Ho-Kyo Park, CVS, CMP & Heung-Rae Kim, PE

In Korea, value engineering (VE) studies in design phase of construction projects more than $10 million should be carried out because of recently modified Korean construction law. Korean VE history in construction industry will be briefly introduced. We will present meaningful statistics for participants so that they could understand recent rapid development of value methodology (VM) in construction sector of Korea. And also, we will show them Korea developing VE stories for several VE societies such as Korean Construction VE Research Institute, VE and Life Cycle Costing (LCC) Committee of Korea Institute of Construction Some important government organizations such as Korea Expressway Corporation, Korea Water Resources Corporation, Construction Technology Research Institute, etc. have researched LCC guideline and calculation software. We have mainly participated in the research and development teams. I will introduce some key roles and results summarized.

And we will share our experiences for some VE studies for various types of construction projects such as Port, highways, railways, urban development, school buildings for design-build and private finance initiative projects. We will briefly explain our Advanced value methodology including typical VE job plan, function analysis etc. It may be very important how to use value metrics of construction projects such as Port construction, highway construction, urban development, high speed railway etc. in making decision for implementation. It's not easy for value team members who are not familiar with value methodology to evaluate overall performance for projects. In general they focus on each idea, for example they focus on not overall project but the construction method when they compare construction methods for an idea. They do not figure overall project. Also they are very sensitive to value improvement indices

especially under high competence circumstances like design-build and private finance initiative projects. Therefore, value facilitator need to persuade value teams to understand performance measurement for next step of VE job plan. So, he has to have an effective performance criteria and methodology.

Our presentation will focus on how to measure performance for projects during value engineering workshop. We took detailed 20~30 performance attributes from Level-1 and 2. performance attributes of Level-1 are very general and comprehensive. Those of Level 2 are more detailed performance attributes to evaluate performance for each alternative.

VE studies of several real projects including large-scale Busan Port development project about 9 billion dollar (9000 billion won) will be introduced. Especially, advanced value metrics technique for evaluation of huge construction projects will be emphasized.

It is stated that the proposed advanced value metric was very useful for better communication and consensus with decision makers and VE team members in case of huge construction projects.

Embedding VM in a Large Organisation

Michael F. Dallas, MA, MICE, FIVM

I want to tell the story of an exciting challenge that came my way in 1997. To develop, embed and deliver a value management programme in a large, global construction consultancy.

In 1997, Davis Langdon was primarily known as a firm of cost consultants. The senior partner, Paul Morrell, had the vision to broaden its offerings to encompass all the key services required to deliver successful projects, except design and construction. This included, amongst many things, value management.

I accepted the challenge and began one of the most rewarding chapters of my life.

This gave me the opportunity to put into practice the methods advocated in the then newly drafted European Standard in VM, BS EN 12973. It worked like clockwork.

I was appointed as champion for the project and had the backing and visible support of the most senior partners in firm (a key requirement).

We developed a VM policy at a day-long workshop of about 50 partners from all over the UK about ten days after I joined (a terrifying experience but hugely rewarding in gaining an agreed policy and buy-in from the leaders of the business – another key requirement).

We set up a steering group to whom I reported regularly and who offered valuable advice.

I developed and delivered training courses, accredited by the UK Institute of Value Management, at awareness, foundation and practitioner levels. Delivering these all around the UK as well as in Southeast Asia had the dual effect of building up a culture that recognised the distinction between cost and value as well as developing delivery capability across the business. It is noteworthy that most of those whom I trained to deliver VM in the early days have now evolved into the new leaders in the business. And, of course, they understand and promote VM because they believe in it. The ideal situation and, of course, another key requirement of a successful programme.

Our core team of one in 1997 has grown to over 30 full time qualified practitioners, one of the largest teams in the world.

We are on course to deliver around 300 studies in 2008, varying from short interventions of about one man week's effort to long term engagements involving several people full time, at all stages in the project lifecycle and covering virtually every sector in the built environment.

This has been an exciting success story and I would like to share it with you in your 50th anniversary year.

Getting 100% of the VE Savings: Value Engineering for the General Contractor

Jeffrey Plant, MBA, P.Eng., PMP, AVS

While it is becoming increasingly common for owners to offer incentives to general contractors to find savings on construction contracts, general contractors can sometimes do better by undertaking independent value studies to identify savings that contractually do not need to be shared with the owner. This paper explores the types of incentives that are being offered on different types of contracts, including unit price, design-bid-build, design-build, and design-build-operate.

Improving Cost Analysis as Part Value Analysis

Charles R. McDuff, PE, CVS-Life

The typical Module I workshop gives little time for building a practical level for understanding the importance of cost estimating in construction related VA workshops. The presenter has over 40 years of design, construction and construction cost estimating experience. The presentation will focus on how build a firm foundation for sound cost analysis within the typical workshop, review pitfalls in cost comparisons between alternatives and provide insights into what works well and what does not. Topics to be reviewed include building a team that includes cost analysis skills, where to best use your limited VA time during your workshops, how to improve your level of confidence in the outcomes from the team estimates and risk-related cost confidence factors.

A Study on the Sequential Job Plan for Construction Project with Quality Model Factors

Chi-Sung In, Chang-Taek Hyun, Gue-Whan Lee & In-Il Namkung

The job plan is a sequential process that enhances function and reduces cost of projects. The information phase of the project is one of the important factors to the function analysis phase, idea creation phase, and evaluation phase. There are many needs and desires brought together in the information phase during the kick-off meeting and gathered from the stakeholders. Unfortunately, they have not been fully adapted or have frequently ignored the next phase, such as the function analysis phase and other consecutive phases. The purpose of this paper is for information deployment (ID) to the VE process for medium and large construction projects.

For facilitating usage of the information effectively, the process and content of this paper is followed:

Analyze project functions as usual and then classify the analyzed functions with the higher ranked stakeholders' intentions and desires among such information. Thirdly, draw FAST diagrams with the classified functions at the same time functions on some of the critical path functions. Fourth, choose the

functions after evaluation and put them on an idea creation sheet. Finally, evaluate ideas briefly with the higher ranked quality factors from the information phase on the evaluation sheet.

In conclusion, because of size and characteristic of the project in the construction field, the information factors have been ignored or not influenced to the next phase of the job plan, which was the cause of the discontinuity of the process. With the proper usage of the information factors, the VE job plan becomes easier.

VE of Preliminary Design Phase for the GeayRyong Multi Community Center Build-Transfer-Lease Scheme

Myung-Sub Son, CVS & Hyeong-Sun Yoo

According to BTL (Build-Transfer-Lease) promote method of the private investment law the GeayRyong multi community center private investment institution put into operation. Using a plan, construction, and maintenance administration lead maximized to creation of civil and utility. As result VE team put in effect based on VE plan in conformity with construction technology control law an Enforcement Ordinance Article 38 13: "economical efficiency of plan and all enforcement guide about examination" to make contributory cultural facilities in comfortable cultural circumstance and promotion of convenience.

The last 47 cases VE proposal was adopted through an idea creation and an idea evaluation process. Especially construction field 13 cases, stage field nine cases and mechanical field eight cases, the last selected electric field five cases, etc. The most of proposal improved a project value with cost reduction and function improvement. Total $830,000 reduced in value renovation style proposal and obtained the result of curtailment of construction expense preparation 4.5 percent.

Information Technology

The information technology category involves topics relating the application of VM to computer software, hardware, and the Internet.

Benefits of Applying Value Analysis to Information Technology Projects, Products, and Services

Craig L. Squires, AVS

While it is common for businesses to attempt to develop and deliver information technology (IT) solutions, current approaches to analyzing and designing such systems are faced with many obstacles and failure is too often the result of such efforts. Where there is great difficulty there is also great opportunity. As such the realm of IT is an area with tremendous potential as a field where value analysis can be applied. This paper outlines some important benefits and outcomes of applying value analysis to IT projects, products, and services. It describes the reasons why applying value analysis to the design, production, and management of IT products and services is desperately needed and has the potential to make a substantial impact.

The Use of Visualization Tools to Enhance the VE Experience

Andrea L. Ball, MLS, AVS, MSIM & Steven Paget, CVS, LEED AP

The ability to visualize a problem and its various solutions is a powerful thing. But how can one, without the aid of a drafting team or graphic artist, illustrate the ideas generated in a value study? There are several visualization and analysis tools available that can be of benefit such as Google Earth and SketchUp, Adobe Pro and Photoshop, Live View and Paint.Net, as well as modeling tools such as eQuest, VE-Toolkits and others. This presentation will introduce the audience to a few of the commonly used tools, provide examples of their use in value studies and discuss their benefit to the value process.

Value Creation through Open Innovation

Ragavendra Prabhakar & Mahesh Natarajan

In a world where change is the only constant thing, companies need to deliver products in a better way, which will change the dynamics of the market. This will help the companies to withstand the competition. The products should be innovative, cost effective, with a shorter lead-time and which should also have a better intellectual property (IP) rights to keep the competition at bay. Is there a secret mantra, which will help the companies to achieve these things? The secret mantra will be open innovation.

"Open Innovation", coined by Chesbrough, can be described as: combining internal and external ideas as well as internal and external paths to market to advance the development of new technologies. To implement open innovation, it requires a paradigm shift in the way companies operate. This business model can be extension of the service sector business model, which has been a primary driving force in South Asia's booming economy. The extent and type of innovation should be determined by current business performance and future expectations and by the organization's tolerance of risk.

This papers showcases a successful business strategy, which has helped Satyam computer services limited to grow up in its value chain creation for the customer and to itself by implementing open innovation. It will help in understanding few known theories of open innovation in a better way, it also provide a practical insight of the business model, as well as it answers few of the intriguing questions regarding the IP and tools be used.

The Combination of Japanese Tear-down with FAST & Cost Matrix as a Tool for Competitor Analysis and Target Cost

Oscar E. Villegas, AVS & Maria Malagrida, AVS

The increased competition in the manufacturing industry, the downturn in the economy and the continuous cost pressure from the OEM's to their suppliers, have pushed companies to look for alternative ways of improving value management and competitive analysis. In addition, the use of Target Costing process during development has become a key tool to ensure that the Target Selling Prices are met, while maintaining the desired profit margins.

This paper will explain how Autoliv merged the Japanese Tear-Down with SAVE International techniques (FAST & Cost Matrix) to be used as a tool to identify value opportunities as well as to be used as base line for Function Target Costing. In addition, it will explore the potentials of these tools to

generate a "Design Based" competitive analysis to understand the company's position in the market place.

Incorporating the Value Methodology in the Product Development Process

Drew M. Algase, CVS-Life, FSAVE

This presentation illustrates the active use of value engineering in Freudenberg-NOK's product development process. VE is not an extra task, but rather an integral part of our High Velocity Product Development℠ (HVPD) process. The value methodology is used early in the HVPD process to assure all customer needs are identified, translated into functional requirements, and understood by the design team. Then, design concepts are suggested, evaluated, and developed into the high value solution. An example of a recent product development and launch will be presented, demonstrating the successful use of the value methodology.

"Jump Start" a Value Methodology Process within Manufacturing

James D. Bolton, PE, CVS, PVM

The importance of the value methodology within the manufacturing community is no more important than right now during the economic recession that is being experienced globally. Manufacturing jobs drive the economy and giving the consumer the very best product for the absolute best price is of utmost importance in a depressed economy. However, this is also the time when the development of an internal value methodology process with manufacturing organizations is needed the most. This paper will give insight as to how to develop a value methodology process within a manufacturing environment, how to pique interest in such a process, and how to establish guidelines for the growth and acceptance of that process.

Product Benchmarking Leads to VA/VE Opportunities

Greg Andrysiak, CVS

This is an approach using product benchmarking as a first step leading to the use of value management. Systematic selections of current products in the marketplace are evaluated for current advantages and duplicate products can be performance tested for comparison purposes. These tear-down parts and cost analysis effectively becomes a basis for value analysis. Depending upon the objective, a clear starting point for a VA/VE team is function analysis to create the better product from the benchmark products. Thus, for manufactured products, this benchmark technique brings a better product to the marketplace using value management.

Value Management Using Outcome-Driven Innovation®

Kenton H. Barker, AVS, BSME

One of the biggest challenges in value management is determining where to improve function and where to reduce cost in order to increase the value of products and services to customers. Outcome-Driven Innovation®, developed by Strategyn, Inc. and adopted by many well-known companies, can help value management practitioners overcome this challenge. This paper gives an overview of Outcome-Driven Innovation® and shows how it can be incorporated into the value methodology job plan.

Value with a "Capital" V: Capital Equipment VE Study of an Automotive Component Assembly Line

Gordon S. Johnson, CVS

The realm of capital equipment expense is a frequently overlooked opportunity area in the world of manufactured products. There is often a lack of comprehensive understanding of the complete system between customers and supplier partners, and the resulting solution can be of poor value. Through strategic application of the value methodology in a committed and ambitious customer/supplier effort, significant value gains can be achieved in the design and development of assembly equipment capital, as shown in the case study presented in this paper.

Sustainability

Sustainability topics include energy, fuel, utilities, facilities, green built, and LEED.

Finding Value in China's Environment

Munsel McPhillips, Ph.D.

China's rapid growth and new emphasis on sustainability can produce either intractable design conflicts or exciting opportunities for creativity. In a recent project outside Tianjin, PRC, value methodology helped achieve the later. The author is part of a team of wetland/storm water designers invited to bring this technology to a fast track design of a city with housing, schools, commercial/ industrial and entertainment facilities for 50,000 people. The entire complex had a three-year construction period and included stringent water quality standards. Over the course of the VM study, the essential elements of sustainable design were integrated throughout the project and a true team was created. Value methodology, particularly function analysis, was critical to the process. In this application VM was used as a design tool rather than for project review. The project was successfully constructed and the designers are incorporating the methods learned in other projects throughout China.

How to Conduct Energy Savings Analysis in a Facility VE Study

Benson Kwong, CVS, PE, CEM, LEED AP

Energy cost analysis for facility projects can lead to substantial life cycle savings during the design phase. It is a good issue to be addressed by a VE team since it requires an interdisciplinary approach. A systematic understanding of energy cost analysis is helpful to develop quick, accurate, and verifiable calculations of energy savings in a VE setting. This paper will survey the different approaches for energy cost analysis (computer modeling, engineering calculations, and rules of thumb) and discuss the merits and drawbacks for each for a value study.

The Synergy between Value Engineering and Sustainable Construction

Abdulaziz S. Al-Yousefi, CVS-Life, FSAVE

In the past two decades, there has been a growing awareness of the importance of both value engineering and sustainable development within the construction industry. Both subjects play crucial roles in realizing quality, reliability, and durability as well as enhancing performance throughout the life of a project. They also help to improve service related outcomes within budget constraints, achieve a more efficient use of

resources, and accomplish an optimum combination of life cycle costings and quality to satisfy the user requirements. This paper proposes a conceptual synergy between VE and sustainable construction that leads to achieving best value over the life span of a project.

Transportation

Transportation papers discuss roadways, bridges, transit, multi-modal, information system technologies.

Broward County SunPort Intermodal People Mover

Tim Brock, PE

The multi-disciplined team of FDOT personnel and consultants showed innovation and creativity by integrating the value engineering process to accommodate the different modes of transportation and the various concerns, needs, and issues of the individual stakeholders in a proposed automated people mover or bus rapid transit improvements needed to develop improved access between the Fort Lauderdale–Hollywood International Airport with a mass transit system and intermodal center stations with the Port Everglades Cargo and Passenger Seaport.

Practical Design Meets Value Engineering

Warren A. Knoles, PE, AVS

Departments of Transportation (DOTs) across the nation are facing funding shortfalls and increasing pressure to "build more with less." The Missouri Department of Transportation (MDOT) has been a leader in developing the "Practical Design" highway design philosophy, which customizes its design standards to each project to reduce costs, while meeting the essential needs of the project.

On a recent complex interchange project, Crawford, Murphy & Tilly, Inc., employed the value methodology during an intense 1-day "Practical Design Workshop" (PDW) at the beginning of the detailed design process. The traditional value engineering (VE) job plan was adapted to the workshop so as to incorporate the essential elements of the value methodology within the 1-day time limitation.

The PDW workshop generated 80 creative ideas for consideration in the design which ultimately yielded 14 Practical Design/Value Engineering (PD/VE) proposals. These alternative PD/VE proposals were incorporated into a revised interchange design concept with estimated construction savings totaling $13 million (28% of the project baseline construction budget).

Value Analysis as a Safety and Ops Tool

Mike E. Pearsall, P. Eng., CVS

Highway agencies are faced with making tough decisions as budgets shrink and traffic volumes continue to increase. Each agency receives many requests to improve the safety or operations of particular sections of highway. As much as it would be desirable to do extensive improvements at each location of concern, there are often limited funds to do these improvements and decisions need to be made. The value methodology combined with focused explicit safety analysis can be a powerful tool in making decisions

on these improvements. By conducting a small concept-level VE study incorporating safety analysis tools, decisions can be made on improvements with the most value which can then be prioritized accordingly.

VE Basics

VE basics are aimed toward newcomers to the value profession and include introduction papers on the six-step job plan, facilitation, and team development.

Applying the Theory of Spiral Dynamics to the Practice of Value Analysis

Robert D. Prager, PE

"Spiral Dynamics" is a theory describing the development and interactions between individuals, cultures, organizations and cultures. Its origins parallel those of value methodology and the founders of both methodologies met regularly and exchanged ideas. One methodology addresses the process of innovation (VM) while the other examines how people and organizations respond to the notion of innovation (SD). By exploring how people and their organizations respond to the challenges posed by the value methodology process, Spiral Dynamics offers insight into more successful team building and reducing the barriers to accepting recommendations.

A Fresh Look at Creativity

Gary R. Myers, PE, CVS

Creativity is like a lot of subjects—we have trouble defining it, but can recognize it when we see it. Creativity is central to the value methodology, yet there are signs that all is not well. Team members often fail to see the link between function analysis and creativity. Study sponsors complain of a lack of fresh ideas as they repeatedly see many of the same ideas recommended repeatedly. Using a technique familiar to those in the VM field, the author uses function analysis system technique (FAST) to analyze Robert Epstein's theory of creativity and clarify its understanding principles and their relationships. FAST is then used to show how value practitioners can improve creativity in the studies they lead.

A Value Management Framework for the Wicked Briefing Process

Xiaochun Luo & Qiping Shen, Ph.D., MIVM, MHKIVM, VMF, CVS

Construction briefing is the process through which a client informs others of his or her needs, aspirations, and desires for a project. Value management is introduced to the process and purports to provide a systematic identification and clear definition of client requirements. Because of client inexperience, misunderstanding the difference between client and designer, and evaluation difficulties, the promises of VM are undermined. This paper describes a new, comprehensive VM briefing framework which integrates pattern language and case-based reasoning with functional performance specification to address those problems.

A Web-Based VE Supporting System for VE Facilitators and Members in VE Workshops

Heung-Min Park, Ph.D., CVS, Jong-Kwon Lim, Ph.D., CVS, Sung-Hoon Kim & Yong-Min Chon, CVS

It is important to improve team performance in VE workshop, however it is difficult to satisfy difference needs and ideas for team members in current VE workshop system. Also most of each phase in VE job

plan need to work collaboratively but it is not easy to improve collaboration. Efficient VE study couldn't be conducted in limited time without automatically S/W system because it takes time to get information and generate outputs. So it is need to develop automatically and efficiently VE supporting S/W system.

This developed system will support to perform VE job plan for VE facilitator and team members, and it will be very useful to team leaders by web based management in VE workshop. We can save time to get information and to generate ideas by using this web based system. This VE S/W system can get data from individual knowledge and VE facilitator can handle these by online operation.

Through this, we can accomplish collaborative performance between members. And we need function to show outputs of VE Study in VE workshop instantly. This system will reduce time and efforts to make presentation for showing outputs. It can show outputs of VE study by automatic reporting function in real time. Also this system identify VE standardization by establishing VE process and offering applicable tool.

This system has been developed by Visual C++ and based on web. It is divided by team leader and members system each and included all VE job plan phases. All data from projects is managed by VE facilitator and accumulated in this system database. All database is using to improve value of VE projects. LCC S/W has been already developed for engineers and used widely, but efficient VE System is not activated yet. It is stated that the developed VE supporting web based system will be very useful for better communication, consensus and team performance between decision makers and VE team members in case of complicated projects

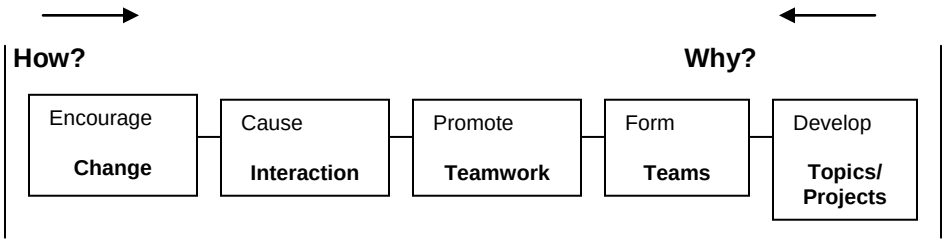
What Are the Functions of Function Analysis?

James A. Rains, Jr., CVS-Life, FSAVE, PVM

The heart and soul of value engineering has always been the analysis of function. Lawrence D. Miles the "Father of Value Analysis" stated that, "all the customer wants is function". In the days of Larry Miles, function analysis was part of the Information Phase; however, in recent times the Function Analysis Phase has developed into its own phase of the Value Methodology Job Plan. The purpose of this paper is to explore the reasons for performing function analysis or in other words, "What are the functions of Function Analysis".

This year's conference theme is "SAVE at 50: Celebrating Our Past, Driving Future Value." More than celebrating our past, I am hoping that this paper will better able us to understand our past and what the Value Methodology (VM) is based on. In 2002 my SAVE paper discussed in detail the basic function of the VE practitioner depicted below as "Encourage Change".

The critical path functions described in that paper were:



Many professionals feel that the main purpose or objective of function analysis is to identify the greatest opportunity for value improvement. I agree with this statement. But to me function analysis is the catalyst that promotes or "causes team interaction". This interaction when asked the "Why" question, results in "Encourage Change". Another way of saying this comes from Ted Fowler. Ted prepared a paper that unfortunately he was never able to deliver in full. The title of his paper is "Why Bother with Function Analysis?" Using the thoughts in Ted's paper, he would prefer to replace "Cause Interaction" with "Change Viewpoint". With that in mind I happen to agree with Ted and am now making that replacement. "Cause Interaction" in the full FAST diagram then falls under "Change viewpoint" as a function that happens at the same time as or is caused by "Change viewpoint". In writing this paper the author is assuming that the reader has had some basic exposure to training, practicing and using value engineering.

Value Engineering in the Government

Donald E. Parker, PE, CCE, CVS-Life, FSAVE

This paper relates the author's experience in establishing and directing the General Service Administration's Public Buildings Service value management program and one of the major challenges he experienced in maintaining the program in a government environment. The paper answers the following questions: Why support VE above all other programs competing for resources? Why should it get special attention and treatment in an organization? The author answers these questions from a government perspective in which profit and increased sales are not necessarily the objective of the organization.

VE in Japan

Application of the value methodology remains strong in Japan. This track highlights the many effective and influential value engineering developments in Japan.

KEYNOTE SPEECH: Application of VE at AISIN Development Co., Ltd.

Yasuhiro Suzuki, President, AISIN Development Co., Ltd.

The history of VE at AISIN Development has begun in the early 90's. Having gone through its introduction, promotion and development stages, the company has aimed at becoming an "Excellent Company" and VE has consistently been applied as a key tool to achieve this goal. As the president of AISIN Development, Suzuki has been promoting VE through a strong top-down leadership, and incorporating the basic concept of VE in the company management philosophy. He says, "Value Engineering is a philosophy, a technique and a way of human resource development." This message is strongly reflected by the company's fundamental policy of VE application.

Human Resource Development to Improve Potential of In-House VE Practitioners

Mitsuaki Usuginu, CVS

The environment surrounding corporations is significantly changing and it is even more difficult to ensure the customer satisfaction and profitability. In order to gain drastic ideas in VE studies, it is more effective that people who have experienced in business practice for certain period of time learn the principles of VE properly and apply it into practice, rather than those experts who practice VE

exclusively do the same. Although at IHI, we have been providing our staff with VE training and assistance in their VE studies and encourage them to conduct VE activity autonomously, we have not been successful in fostering people who is able to do so appropriately and independently.

In this paper, the author will determine the problems in training people in practical skills of VE and propose a human resource development program to foster people who would be able to conduct VE studies autonomously through their own capabilities and experiences. The program had a great success and the people who have received training under this program are certainly improving their practical skills.

New Product Development Based on Life Research

Hiroshi Tsuchiya, CVS, FSAVE

"Life Research" is to grasp the real needs of products or services, find the seeds of development or improvement, and create a new concept based on the people's current living conditions and life experiences. It has been applied in Japanese companies ever since around 1985 and effects have been demonstrated. The speaker is one of the pioneers of the research and practical instruction in VE. He will address the necessity of Life Research, scope of its application, practical methods, and other details.

Target Costing of Japanese Companies

Masayasu Tanaka, CVS, Ph.D., FSAVE & Katsuyuki Noda, CVS

The term "Target Costing" was first used as a new pillar for cost management at Toyota Motor Corporation in 1963. Since then, it has been developed not only for the cost management of new products but also played an extremely important role in developing corporate mid-and-long term profit planning and/or profit strategies. The presenter has been a pioneer for teaching Japanese companies in target costing, both in research and practice bases. He will describe the whole picture of "Target Costing of Japanese Companies".

VE Application in Japanese Construction Industry

Setsuo Matsuda, CVS

Japanese construction industry has a long history of VE application. Why has VE entrenched in the construction sector even it has undergone various vicissitudes? The speaker has been working for a company which has one of the oldest histories and outcomes of VE application among Japanese construction companies. He has not only led in-house VE efforts but also contribute greatly for the promotion of VE in Japanese construction industry. He will discuss some problems he has gone through, how he resolved them, innovations and efforts he has been practicing in order to enjoy doing VE.

VE Application in Japanese Manufacturing Industry

Yoshihiko Sato, CVS, FSAVE

Japanese manufacturing industry has steadily been developed by overcoming various waves of business cycle. What is the philosophy of "MONO-TSUKURI (Manufacturing)" underpinned by Japanese manufacturing industry? What are the major reasons which led to the improvement of global competitiveness? What is the origin of the power to create high quality function products in sequence? The speaker will describe the multifaceted VE application which has been constructed in Japanese manufacturing industry over many years. Also, he will address some new issues facing Japanese

manufacturing industry, which can be shown in the contraction of GDP due to the severe economic depression starting the end of last year.

VE Certification Program in Japan

Yoshio Nakagami, CVS, FSAVE

The certification program for Value Engineering is a valuable system in promoting the use of Value Engineering and also to disseminate it throughout Japanese industry and government. The Value Engineering Certification Program by SJVE is an acknowledged qualification system for Value Engineering by Japanese industry and government, and has been maintaining the number of applicants at a certain level. As a public benefit corporation, SJVE should be and is maintaining its VE certification program and promoting the importance of obtaining these certifications for the Japanese industry and government people.

Why Problems Cannot Be Solved and Why VE Is Effective

Hisaya Yokota, CVS

This paper is a development of the utility of "Functional Approach" which the author has learned through his practices of VE studies as a principle for problem solving. The author has come up with a principle why VE is effective for problem solving. Whenever doing or not doing VE, the author believes any problem can be solved if one knows of this principle. Why a problem can be solved with VE? What else is different from other problem-solving techniques? The author suggests to consider a problem to be solved in 5 steps "I-S-S-U-E", because most of the other problem solving techniques are disclosed only a part of them. Especially, the first 2 steps I (Identification) and S (Speculation) are important. VE has much to do with these 2 steps.

Other

This catch-all category consists of papers with topics that do not readily fit within any of the above tracks, but still present valuable information.

Applying the Tourism Concepts of Local Governments with Value Analysis

Istvan Tarjani, CVS & Marianna Tunde Tarjanine Illes, CVS

Value management consultancy can be improved through the solution of consultancy tasks at local governments and public administration institutions and the application of efficacious techniques. The task is as complex as the demands: the scope of those generating demands, the take-off points, and the synergies should be defined in a multidimensional environment. Owing to its complexity, the consultant may face numerous difficulties. In this paper, the authors touch upon the methodologies applied successfully, the steps taken to understand the resistance to changes, and the management of the topic limits of the project.

Best-in-Class: An Executive Level Application of the Value Methodology

Ronald J. Tanenbaum, CVS, Ph.D., PE, GE, F.ASCE, Solomon Moore, PE & Gordon Johnson, PE, CVS

Sometimes we, as value practitioners, do not see all of the opportunities to which the value methodology—in whole or in part—can be successfully applied. Then, along comes a forward-seeing

agency that has a goal to self-inspect its operating procedures and to change these procedures in its quest to become the Best-in-Class in their arena of practice and service to the public. This was the case with the Metropolitan Water District of Southern California, which approached Value Management Strategies, Inc. to lead a series of unique workshops addressing three critical areas where the District saw opportunities to improve: alternate delivery methods, engineer's cost estimates, and construction change order management. The paper will conclude with recommendations for performing successful Best-in-Class workshops for any agency that shares a goal to self-inspect its operations, accepts change, and possesses a sincere desire to be better, if not the best.

Buick-General Motors VM History: 1962 to 1988, plus Before and After

Ronald L. Harris, PE

The purpose of this paper and presentation is to present a small piece of a large company's value focused history during SAVE International's 50 year history. This will include GM's impact on the author's related Value experiences prior to, and after, his Buick/GM assignments.

The author joined the Buick Motor Division's Value Engineering Group in 1964, and left in 1988, after a major reorganization. The intent of this paper is to review some Buick and General Motors related value methodologies and benefits over this period. Some time will be taken to describe the Buick Division and its relationship to other Divisions, the GM Corporation, the Automotive Industry, and SAVE International.

For example the value methodologies was used to serve all functional areas and management levels in the division and the corporation such as the styling studios, the draftsman's board, as well the board room and international teleconferences. The VM process was gradually expanded to optimization products, organizations, management performance, customer satisfaction, and to actually redefine divisional and corporate processes.

What happened? Why isn't it happening now? The reason is probably due to the lack of belief and faith.

Can Value Methodology Enhance the Competitiveness of the Supply Chain?

Ferenc Nádasdi, Ph.D., CVS-Life, FSAVE

Essentially, the "supply chain" may be seen as several processes linked together. Hungarian and international experience shows that Value Methodology (VM) can be used effectively in the analysis of particular processes. We have seen that in addition to enhancing the efficiency of certain stages of processes VM can produce excellent results in linking these stages together. The problem is further worsened by the fact that the linkage between each vertically related unit is controlled by traders, and the main criteria include time of delivery, price, payment method, as well as a guarantee for quality set forth in the relevant documents. Experimental projects all demonstrate that it would be important to ensure more efficient cooperation between each vertically related unit in the case of delivery contracts or even in the case of R&D activities and the planning of investments. Commercial agreements cannot prescribe any technical conditions that would facilitate effective further processing. In our view "vertical Value Analysis/Value Engineering" can significantly facilitate the more efficient operation of the entire vertical structure.

Criteria Analysis of Consumer Products

Presented by Donald E. Parker, CVS-Life, FSAVE

This paper, originally written and presented by David J. DeMarle in 1971, will be re-presented by Donald E. Parker in the MVF Forum.

Criteria analysis is a systematic method for evaluating performance. It has been used successfully to select design alternatives which offer the best overall value in new product design. In this paper I will show how criteria analysis can be applied to the analysis of consumer products characterized by aesthetic as well as functional value. The analysis of such products is difficult using standard value engineering methods, which work best on highly functional products.

How to prove VM/VE Programs Deliver Return on Investment: Tracking, Quantifying & Implementing Ideas

James D. McCuish, CVS MBIM & George Padvorac, AVS

How can value engineering practitioners and value improving practice teams use the latest IT technology to solidify and supercharge the impact of value engineering across the enterprise? How can we credibly track and characterize the improved results from value improving practice studies, including value engineering, as we are challenged with managing the ideas from value improving practice studies ... and holding those accountable for delivery? This paper explains how to innovatively leverage both the theory and available software output to significantly improve the VE study deliverables, and to track the impact of the value engineering program across the enterprise.

Membership, the Life Blood of Any Organization

Luis A. Arroyo, CPIM, MBB, VMP

Industry is saturated with professional and business organizations, the majority of which strive to achieve the same result: promote the business and professional interests of their members. Most organizations in the past 10 years have experience a decline in membership or flat growth. Furthermore, many organizations are increasing their scope, reinventing themselves, and increasing value to their members. SAVE has not been immune to the membership decline. This paper will draw from two surveys of active and inactive members and share from the understanding of their "voice of the customer." Key conclusions will address strengths and areas that require improvement with objectives of improving the retention rate and value to the member.

Patent Design Using FAST

Peter Hanik, PE

Patents have become increasingly important in business today because patents protect the innovations upon which future revenues depend. Engineers develop innovations in technical language. Patent attorneys write patent claims in legal language. There is a gap between language and knowledge of the attorneys and engineers. Failure to effectively bridge this gap often leads to weak, overly narrow patents. This paper will show how to use FAST diagrams to structure patent claims and to bridge the communication gap between the patent attorney and the engineer. The result is stronger and broader patent claims.

Using VE to Strategically Plan Our Future

Margie Jeffs, Lori Braase, AVS, Darcie Martinson, AVS & Alison Connor, CVS-Life

Value engineering (VE) methodology is a tool for efficiently and effectively developing strategy maps and scorecards demonstrated by Robert Kaplan and David Norton from the Balanced Scorecard Collaborative/Palladium Group. This can be accomplished by focusing on functions. Some examples are: the mission of a strategy map being the basic function and the vision statement being the higher order function. The FAST diagram helps to assure success of this by using an integrated approach to the strategy map by formulating a cause and effect relationship and establishing the how and the why behind the strategy map. By utilizing the VE job plan phases, one is able to move from strategic thinking all the way through to execution of the strategy.

Value Engineering and Service Contracts

James R. Vickers, AVS & Jay Mandelbaum

Most value engineering (VE) savings, especially those that are contractor initiated, are based on savings in the acquisition of hardware. However, the government now predominantly spends its acquisition dollars on services where contractor initiated VE proposals are rare. This presentation will provide an analysis of why VE is not being used extensively in service contracts and discuss the difficulties in adopting current VE processes, with its decidedly hardware focus, to the unique requirements of services. The presentation will also provide recommendations for actions which could and should be taken to improve the use of VE for services. *This paper will be presented during the MVF Forum.*