



Business Information & Management Solutions
A TRAINING, CONFERENCING & EVENTS COMPANY

Guidelines and principles of Value Management (VM) and Value Engineering (VE)

Value Engineering in Projects

Understanding the application and advantages of Value Engineering in order to identify core problem areas and designing cost effective solutions

Dates: 18 - 20 October 2011

Venue: Focus Rooms, Sunninghill, Johannesburg



3 CPD POINTS

An Intensive 3 Day Workshop!

What past delegates had to say:

- Deputy Director of Mines SA: "Excellent in all Categories"
- Manager Hydrology – Namwater: "Excellent course – valuable – will apply in Workplace"
- Project Manager – Namwater: "Brilliant – knowledgeable and training method – simplified in understanding"
- Director Engineer: "3 Days well spent – well organised – valuable and benefited from course"

PMI will award category 4.24 CPU Points - 1 per course hour

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How can you achieve the lowest life cycle cost available for your project?

Engineering projects remain some of the most complex projects undertaken at any point in time. The vast majorities of projects span years and frequently go through a myriad of issues ranging from cost over - runs to shortages in materials or manpower. As organisations try to limit their risks and exposures in a "new economy", it puts immense pressure on project managers to deliver their projects within time and budgets.

Achieving **built-in value** in the most **cost efficient** way is key to the project manager. Good time management leads to efficiency in functionality, especially in turbulent times. **Cost efficient projects**, consistent with **required performance, reliability and quality** can be simplified by incorporating **Value Engineering** at the early design stage of a project.

This course will equip you with the most **essential tools and techniques** to effectively apply **Value Improvement Practices (VIP's)** such as **process simplification** and **technology selection** to ensure **successful project completion**.

This comprehensive, highly practical course will over 3 days delve into the more practical aspects of engineering project management. As a highly interactive PMI certified course, it will impart real time, practical knowledge to all delegates. As South Africa is going through a slew of infrastructure capacity raising projects, it would be the right time for project managers to be at the course and update themselves on the latest tools and techniques.

Your 11 key learning outcomes, insights and takeaways include:

- Introduction to the VM/VE terminology, concepts and benefits as applied in the engineering design and project management applications
- Integrating human dynamics and teamwork to ensure successful alignment
- Functional thinking: Ensuring proper data preparation to develop a comprehensive understanding of the project or proposal and outlining the desired objectives
- Information gathering and sharing: Explaining the main concepts, project objectives, design constraints, specifications and estimated costs
- Defining functional significance: Identifying major project components, determining their functions and assigning an estimated cost to each component
- Creative phase: Considering alternatives for each selected phase project function and advocating alternative means of accomplishing the function within the project
- Evaluation phase: Analysing and investigating ideas generated in the creative phase
- Investigation phase: Further ensuring correct decision making by measuring recommendations against cost justification models
- Presentation phase: Preparation of effective recommendations to enhance the decision making quality
- Implementation and project follow-up
- Discussion on VM/VE applications utilised in Strategic and Operational Applications (Case Studies)

About your course facilitator:



KJ Huber

Pr Tech Eng. CVS (Life), Managing Director, VM Services Pty Limited

"This course will equip you with the most **essential tools and techniques** to effectively apply **Value Improvement Practices (VIP's)** such as **process simplification** and **technology selection** to ensure **successful project completion**."

Kurt Huber is currently Chairman of the Standards Generating Group – Value Engineering (part of the Engineering SGB of the Engineering Council of South Africa). Kurt graduated from the University of the Witwatersrand as an Industrial Engineer in 1991 and is a Certified Value Specialist (for Life) registered with SAVE International. Swiss born, Kurt is also an appointed part time member of staff at the University of the Witwatersrand since 1994. He also lectures at various Business School. He has over 24 years of Value Engineering experience. He facilitated more than 350 Value Engineering Workshops / Studies and lectured in the Value Engineering / Value Management Methodology to over 3000 People Worldwide.



The training programme has been validated by the Engineering Council of South Africa (ECSA) for 3 CPD points.

Who should attend?

- Engineering Project Manager
- Engineering Manager
- Design & Development Manager
- Design Engineer
- Project Engineer
- Senior Engineer
- Principle Engineer
- Divisional Group Engineering Manager
- Area Project Manager
- Technical Engineering Manager
- Civil Engineer
- Plant Engineer

Day 1: 18 October 2011

08h00 Registration and early-morning refreshments

08h45 Facilitators opening remarks: Kurt J Huber

09h00 Session 1:

Introduction to the Value Engineering (VE) terminology, concepts and benefits as applied in the engineering design and project management applications

- Defining VE as a tool to optimise value by prioritising all functions within a project or challenge to identify how best to achieve value-added outcomes
- Understanding the benefits that can be achieved by implementing VE in the early design stages of a project
- Learning various advantages and applications of VE on strategic, tactical or technical opportunities in projects
- Defining the Value Engineering think plan
- Introduction to Value Improvement Practices (VIP's)

10h30 Mid-morning refreshments & networking

11h00 Session 2:

Integrating human dynamics and teamwork to ensure successful alignment

- Understanding the complexities of interactive forces at work in groups
- Establishing the practicalities and techniques that will ensure free flow of information in teams
- Managing change through the development and application of a specific course of action to ensure constructive permanent improvement
- Sigmoid Curve – First Order Change and Second Order Change
- Paradigms / Mindset
- Application of Johari window principles to improve sharing skills
- Value Systems
- Gaining maximum benefit from your team diversity

12h30 Lunch

13h30 Session 3:

Functional thinking: Ensuring proper data preparation to develop a comprehensive understanding of the project or proposal and outlining the desired objectives

- Determine the purpose of a VE intervention
- Discussion on who should be involved in the VE study, workshop, session
- Planning of VE study, workshop, session
- Duration
- Venue
- Agenda

15h00 Mid-afternoon refreshments

15h15 Session 4:

Information gathering and sharing - Explaining the main concepts, project objectives, design constraints, specifications and estimated costs

- Various tools and techniques for gathering and sharing information to establish greatest cost saving potential or improvement
- Pareto's Principle (80-20)
- Value Influence Curve
- Gathering information – Listing of Issues and Concerns
- Determining required outcomes by applying the Objective Matrix
- Objective Setting
- Outcomes to achieve
- Outcomes to prevent
- Obtainable resources
- Possible constraints

16h00 Chairman's closing remarks

16h00 Close of Day 1

Day 2: 19 October 2011

08h00 Registration and early-morning refreshments

08h45 Facilitators opening remarks

09h00 Practical session:

Ve Session Planning and Setting of Objective

Small Teams will create a purpose statement, determine correct participation, list issues and concerns and establish a clear objective including environmental influences.

10h30 Mid-morning refreshments & networking

11h00 Session 5:

Defining Functional Significance: Identifying major project components, determining their functions and assigning an estimated cost to each component

- Describing correct functional terms for business needs and / or products, systems, processes
- Tools and techniques to assess the significance of information gathering in order to identify specific areas to be addressed
- Numerical Evaluation and Cause and Effect Graph
- FAST Diagram (Functional Analysis System Technique)
- Identifying types of information required to suite the stage of the projects
- Establishing the purpose to produce accurate and consistent group information, that will satisfy group and business units needs
- Determining basic and secondary functions and assigning estimated cost to each component
- Measuring value as a ratio of Function to Cost to visibly expose the functional costs while maintaining clarity of functional priorities and duplication

12h30 Lunch

13h00 Practical Session:

Function Identification & Numerical Evaluation

Small Teams will identify the functional requirements for achieving the Objective. An evaluation of the functions against priority will show results based on Pareto's Principle (80-20).

15h15 Practical Session:

FAST Diagramming

FAST significantly contributes to the function analysis phase of the Value Engineering process by graphically mapping out the functions in a FAST diagram. It has developed into a simple yet effective tool for evaluating existing procedures and components to find more cost effective answers to problems

16h00 Feedback Session:

Discussion on the practical applications

16h25 Facilitator's closing remarks

16h30 Close of Day 2

Day 3: 20 October 2011**08h00 Registration and early-morning refreshments****08h45 Facilitators opening remarks****09h00 Session 6:*****Creative Phase - Considering alternatives for each selected project function and advocating alternative means of accomplishing the function within the project***

- Differentiating between digital and analogue processing in order to stimulate creativity
- Creating an organisational environment that will support innovation and free flow of ideas
- Stimulating idea generation and creativity by using different resourceful techniques such as:
- Brainstorming
- Creative Synthesis
- Lateral thinking
- Random word

09h45 Session 7:***Evaluation phase - Analysing and investigating ideas generated in creative phase***

- Exploring scoring techniques to provide evaluation solutions that will assist in the listing of advantages and disadvantages of generated ideas
- Decision Analysis
- Perspective Modelling Matrix
- Concept repertoire
- Life Cycle Cost Modelling

10h30 Mid-morning refreshments & networking**11h00 Session 8:*****Investigation Phase: Further ensuring correct decision making by measuring recommendations against cost justification models***

- Discussion on cost benefit and other investigation techniques
- Feasible study
- Life Cycle Cost Modelling
- NPV
- Defining the Risk Assessment process to evaluate the probability and effect of an identified adverse consequence and/or potential problem

12h00 Practical Session:***Risk Assessment (to ensure successful implementation of recommendations)*****12h30 Lunch****13h30 Session 9:*****Presentation phase – Preparation of effective recommendations to enhance the decision making quality***

- Methods for successful preparation of effective proposals and recommendations
- Preparing proposals that will suite the specific approving manager and/or client
- Conducting proper management reports to enhance the decision making quality
- Designing appropriate proposal formats

14h30 Session 10:

Implementation and project follow-up

- Implementing the proposal by application of the principles of project management
- Designing a detailed plan of action to ensure proper implementation
- Post Implementation Evaluation to evaluate achieved results (Audit)

15h00 Mid-afternoon refreshments**15h15*****Discussion on Value Engineering Applications utilised in Projects***

- Container Terminal Expansion (Logistics)
- New Process Plant (Mining)
- On Shore / Off Shore Facility Expansion Project (Oil / Gas)
- Product Optimisation (Automotive)

16h00 Facilitator's closing remarks**16h15 Close of Training Course**