



# **How to Develop a Manufacturing Value Engineering Program**

**Presented to the  
2008 CSVA Conference  
Markham, Ontario - October 27-28, 2008  
by Jim Bolton, PE, CVS, PVM**

# Introduction

- The understanding and application of ***Value Engineering (VE) principles*** within NA and Western European countries has never more important than it is today.
- Over the years, many of these manufacturing organizations have ***lost their focus*** with regards to ***internal Value Engineering programs***.
- Fortunately, I have had the opportunity to ***initiate Value Management (VM) internal programs*** in two manufacturing companies.

# Background Information

- We are living in a very fast pace, competitive manufacturing environment today and ***industrial organizations*** are having to make ***tough choices***.
- If ***internal programs*** don't yield a ***quick return on investment***, they are either downsized, outsourced to the lowest bidder, or even ***totally eliminated***.
- This is what has happened to many ***internal Value Engineering programs*** within many large industrial organizations in years past.

# Background Information, cont.

- Many of these companies such as General Motors, Ford, & Chrysler had **very successful internal Value Management (VM) programs** which were bringing results to the '**bottom line**'.
- Today many of these large manufacturing companies are going back to their '**old ways**' of **cost cutting, downsizing, re-organizing, pressuring suppliers**, and looking for **low cost country sourcing** for most of their parts.
- How can we **re-initiate internal Value Engineering programs** within the manufacturing sector today.

# Major Keys to Getting Started

- ★ **Management Commitment from the top**
- ★ Obtain ***management's attention*** to VM
- ★ Demonstration of VM to ***Top*** Management
  - Conduct ***successful VM Workshops*** on key projects.
  - Invite the management team to the ***team report-out***.
  - Let the ***results of the VM process*** speak for itself.
- ★ Show Advantages of VM vs. Cost Savings
  - Highlight ***VM tools used*** at the team report-out
    - Function Analysis
    - FAST Diagrams
    - Cost/Function Worksheets

# Major Keys to Getting Started, cont.

- ★ Hire a Successful VM Professional or Select a an internal VM Manager to Lead VM Team
  - VM Professional should have an *approved Module I*.
  - *Internal VM Manager* needs to attend Module I training and become certified as an *Associate Value Specialist*.
  - Individual with *Product/Process* Experience a real plus
  - VM Manager needs *Costing or Estimating Knowledge*.
- ★ Team Selection Critical to Project Success
  - Select *Cross-Functional/multi-disciplined* team.
  - Ideal Team should have *6-8* members.
  - Select members with *vested project interest*.
  - Only select those that are '*team players*'
  - Seek to *neutralize* team experience

# Guidelines for a Successful VM Study

## ★ Logistics Planning

- ★ Workshop date planned *well in advance*
- ★ *Site Selection* is a key for success
- ★ Overall Length and *team* daily *commitment*
- ★ Completion of *Pre-work* very important

## ★ Establishment of strict ground rules

- ★ Total *Team participation* is imperative
- ★ Minimize *Distractions* during the workshop
- ★ Follow the *VM job plan* without exception

# Required Workshop Pre-work

Customer Statement of Work

Bill of Material with Costs Identified

Type of Material (Process) & Specification

Design for Assembly and Manufacturing

Drawings for Design or Process Components

Manufacturing Layout of Production Process

Assembly Dwgs. or Flow Chart of Process

Finite Element Analysis Studies

DFMEA and/or PFMEA

Competitive Analysis

# Generic VM Job Plan for a Manufacturing Organization

Information Phase



Function Phase



Creativity Phase



Evaluation Phase



Development Phase



Implementation Phase



Follow-up Phase

# How I Develop VE Programs

- When I joined TRW Automotive in Jan. 1997, there wasn't *an internal Value Management program* but they brought in VE consultants my first week of the job to *teach a Module I*.
- I developed this training over the next few years, became certified as a CVS and Module I instructor and *started an internal VM process which became very successful*.
- Millions of dollars were saved annually both *internally and for their customers* and *VM certification* was recognized as contributing to this success.

# How I Developed VE Programs, cont.

- This **Value Management process** started in the Occupant Safety Systems Division at TRW Automotive and a **separate department** was created to expand the VM methodology.
- **After 3 years**, TRW's upper management saw the success of this VM process and decided to **expand it globally** corporate wide.
- Over the next 2 years, I **conducted over 84 VM Workshops globally** from where 1000's of ideas were generated representing \$M's in savings annually.

# How I Developed VE Programs, cont.

- Due to the success of the internal VM process at TRW, they **decided to adopt the SAVE International Certification** process as the official VM training program at TRW.
- Over the next 8 years, I mentored over **131 people to becomes certified as AVS's**, and **two additional CVS's** were added to the organization (one from the outside and one become a CVS from inside the company).
- This mentorship including having the **AVS's participate in at least 2 VE Workshops**, the second of which they are the lead facilitator.

# How I Developed VE Programs, cont.

- By December 2007, TRW Automotive had a **very successful VM program** with roughly 78 people dedicated to VM activities globally.
- **TRW was regularly** supporting SAVE International, its conferences, and its local Chapter activities and was even a **Corporate Member** of SAVE International.
- SAVE International granted TRW Automotive the **2004-2005 Presidential Citation** for its work in promoting the **Value Methodology globally**.

# How I Developed VE Programs, cont.

- By joining Whirlpool in Jan. 2008, I have the opportunity to ***promote the Value Methodology in the appliance industry*** which today is under extreme cost pressures like the automotive industry has been now for many years.
- My first job was to ***integrate VM into the other established cost reduction initiatives*** already established within the company.
- I have conducted ***6 very successful VM workshop*** in a variety of projects that have captured the ***attention of management***.

# Can VE be re-initiated in Manufacturing?

- Yes, I think the trend *with the American manufacturing sector can be reversed*, but we must act now. That **'we'** is all of us included those in this room!
- *Take the challenge and get started* by hiring a VM Professional or develop an internal VM program in your manufacturing organization.
- *Conduct a Value Methodology Workshop* on a new project and see for yourself and your management team the difference the **VM process can produce for your company.**

# How can VE be promoted ?

- ★ We can *promote the success of the Value Methodology* by:
  - ★ *Writing articles* for SAVE Int'l. Interactions
  - ★ Accepting *speaking assignments* at local SAVE International or CSVA or other meetings where VM can be promoted.
  - ★ *Submitting abstracts* to present at Value Methodology Annual Conferences like:
    - ★ SAVE International
    - ★ Canadian Society of Value Analysis
    - ★ Japanese Society of Value Engineers
    - ★ Hungry Society of Value Analysis
    - ★ Indian Value Engineering Society, etc.



# How can VE be promoted ?, cont.

- We can submit a ***VM success story*** for Value World on a project that had good results.
- We can also ***become members*** of our local Value Methodology organization and accept leadership positions within that organization.
- We can seek to work on ***community service projects*** or offer to ***speak at community organizations*** concerning Value Methodology.
- We can volunteer to ***support non-competing manufacturing organizations*** on establishing an internal Value Methodology program.

# How can VE be promoted?, cont.

- We can promote the Value Methodology at our **local high school**, **community college**, or **university** and indicate there are job opportunities in this field.
- We can become **'Adjunct' professors** or **guest speakers** at these institutions above by contacting the engineering deans.
- We can hold a **student competition** to gain interest in the Value Methodology.
- We can seek to **develop a student Chapter** or invite interested students to Value Methodology meetings.

# Summary and Conclusion

- ✱ ***Manufacturing*** is the lifeblood for our long-term economic stability.
- ✱ It is important to our ***economic survival*** to re-establish VE ***back into manufacturing***.
- ✱ Off-source pressure is too great and ***VE can help preserve local manufacturing*** jobs.
- ✱ It is also imperative to start ***training the next generation*** of Value Practitioners today.
- ✱ Can this trend be ***reversed***? Absolutely!!!
- ✱ The only question is, ***what will be your part!***