What is New in Value Engineering?

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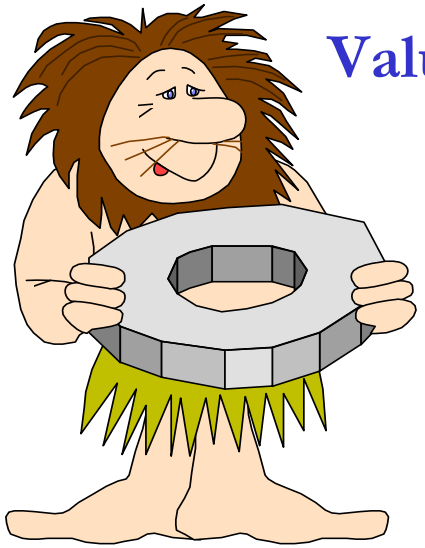
What Does "Value" Mean?

The lowest cost to reliably provide the required functions or services at the desired time and place with the essential quality.



In Value Engineering

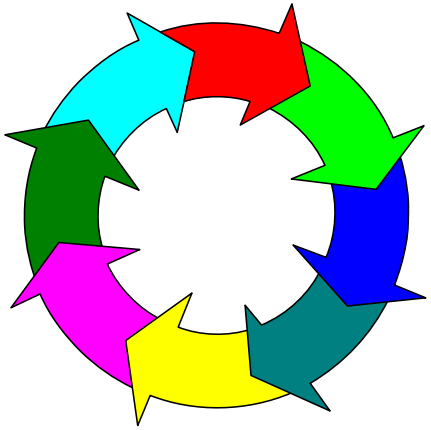
$$\textbf{Value} = \frac{\textbf{Worth}}{\textbf{Cost}} = \frac{\text{User Initial Impressions + Satisfaction in Use}}{\text{Initial Costs + All Future Costs (Life Cycle Costs)}}$$

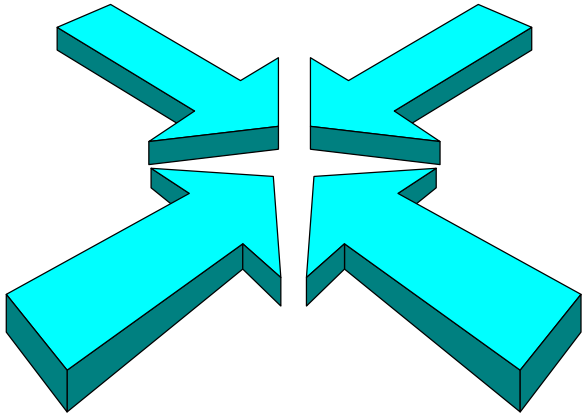
In Cost-Cutting

$$\textbf{Value} = \textbf{Initial Cost}$$

Value Engineering Definition

Organized study which analyzes the functions of systems, equipment, facilities, services, and supplies to achieve essential performance, reliability, quality, and safety





OBO VE Program Requirements

- All Projects:
  - over $1,000,000
  - with problems
  - over budget
  - or with potential for improvement
- Must have either a VE study or Waiver in place before they reach the 35% design stage

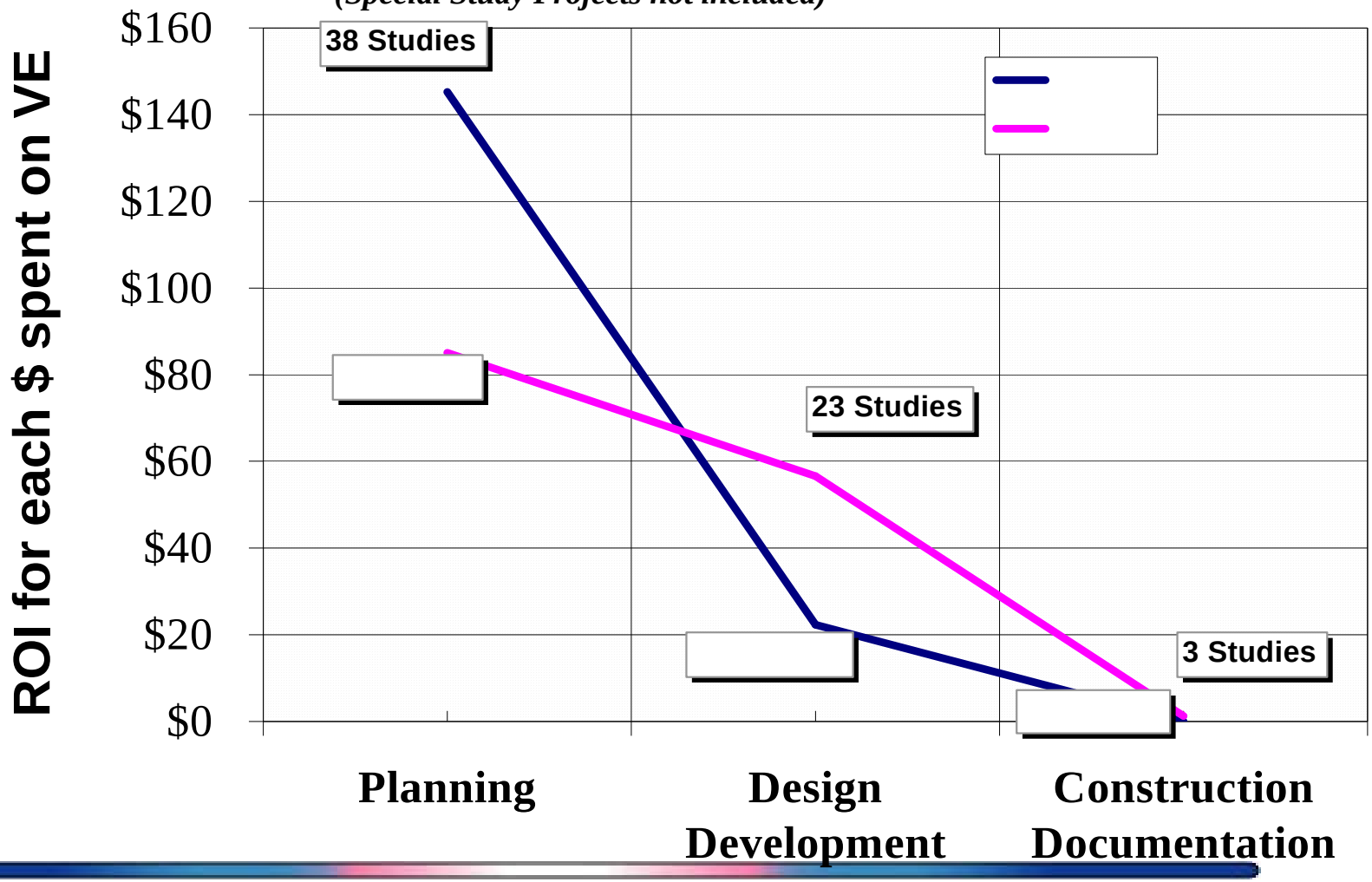
How does VE benefit OBO?

By giving us the biggest bang for our buck

VE Return on Investment Summary

Includes projects from 2000 through Sept 2006

(Special Study Projects not included)



How do we do it?

Components of OBO VE Program

- VE Studies
  - Planning
  - Design
- Construction
  - Contractor Proposed VE Recommendations (VECPs)
- Analysis & Lessons Learned
  - Assessment Trips
  - Database of VE alternatives
  - Trends

Typical OBO VE Study Schedule

- Pre-Study Familiarization
  - A/E or D/B delivers design documents (including cost estimate)
- Value Engineering Study
  - Information (function analysis; cost models)
  - Speculation/Creative
  - Evaluation
  - Development
  - Presentation (oral & written)
- Post Study
  - Approval
  - Implementation
  - Database of alternative and results
  - Assessment

OBO Acceptance for Implementation

- Team given VE report for review
- VE acceptance memo
  - VE recommendations must be implemented, unless approval from division director obtained
- Planning contract modified as required
- Delays or cost increases as a result of VE can be added to the project as a result of the VE with a decision memo to the Director/COO

Verification
(This is New)

- Conduct Site Assessment Trips
- Validate Implementation
- Gather Lessons Learned
- Recommendations for Future Projects

15 Sites visited for 22 VE studies

712 Proposed Alternatives

184 Accepted

290 Implemented with Verification

What have we accomplished?

Value Engineering Program Summary

Value Engineering is a function oriented, systematic, applied creativity, team process which concentrates on lowering life cycle costs while improving quality and performance. The OBO VE program requires at least one independent VE study, or a waiver, on all projects with an estimated cost of construction greater than $1M.

Results From OBO VE Program

	From 1987 -- 2005	From 2000 -- 2007
VE Program Cost:	$9.3M (156 Studies)	$9.1M (157 Studies)
Total Saved:	$381.3M (includes $49.3M O&M)	$514.6M (includes $98M O&M)
Return on Investment	$40 to $1	$57 to $1
# of VE Ideas Accepted for Implementation	1570	2030

VE Program Performance Indicators

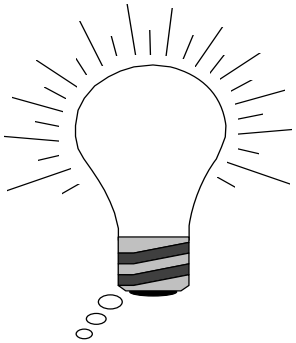
FY 2007 Results:

11 VE Studies had 71 accepted VE recommendations to date for a total savings of $14M which includes $0M is savings in O&M costs

- % Proposed Savings by VE Team*
  - Goal 10% **(Actual 29.3%)**
- % Accepted VE Recommendations*
  - Goal 4% **(Actual 4%)**
- Return on Investment
  - Goal $20 to $1 **(Actual $38 to $1)**

* compared to estimated cost of construction

VE Study Goal



A functional facility
worth its cost