

*A Strategic Plan for  
Value Engineering  
in DoD*

**December 2008**





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ACQUISITION AND  
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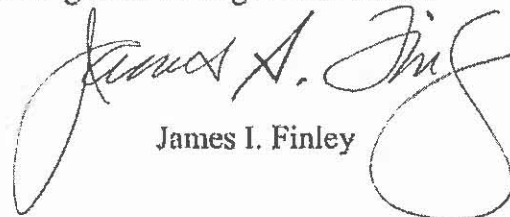
MEMORANDUM FOR: SEE DISTRIBUTION

SUBJECT: Value Engineering

To achieve the greatest benefit from our acquisition dollars, it is essential that we continue to emphasize the use of Value Engineering (VE) in our programs. VE provides a structure and methodology with a long and successful history of consistently decreasing costs, increasing quality, and improving mission capabilities. VE is a technique that is useful to any program trying to reduce total ownership cost. It complements, rather than competes, with other DoD initiatives to support our warfighters and provide them the best systems and facilities possible.

The effectiveness of the VE methodology is recognized in legislation. The Office of Federal Procurement Policy Act 41 USC 432, Federal Acquisition Regulation parts 48 and 52.248, and implementation guidance in OMB Circular A-131 requires Federal departments and agencies to "establish and maintain cost-effective VE procedures and processes" to reduce program acquisition and life cycle costs. This document updates the 2003 strategic plan and establishes goals and objectives for DoD's VE program. In terms of cost savings, we should strive to achieve annual cost savings and avoidances of 1.5 percent of total obligation authority.

Active support from the Services and Agencies is essential for furthering these efforts. We must continue to seek innovative ways to improve warfighting capability and facilities at lower cost. While some significant results have been achieved, there is potential for far greater savings in the future.

A handwritten signature in black ink, appearing to read "James I. Finley".

James I. Finley



## Introduction

The Department of Defense's (DoD's) Value Engineering (VE) program reduces cost, increases quality, and improves mission capabilities across the entire spectrum of DoD systems, processes, and organizations. It employs a simple, flexible and structured set of tools, techniques and procedures that challenge the status quo by promoting innovation and creativity. Furthermore, it incentivizes government participants and their industry partners to increase their joint value proposition in achieving best value solutions as part of a successful business relationship. The Office of Management and Budget (OMB) Circular A-131 dated May 21, 1993 contains the following definition of VE:

"An organized effort directed at analyzing the functions of systems, equipment, facilities, services, and supplies for the purpose of achieving the essential functions at the lowest life-cycle cost consistent with required performance, reliability, quality, and safety. These organized efforts can be performed by both in-house agency personnel and by contractor personnel."

Accordingly, the Federal Acquisition Regulation (FAR) requires that a VE clause be included in all contracts for supplies and services exceeding a specified threshold, with very few exceptions. VE, as one of the disciplines of systems engineering, plays an important role in DoD efforts to provide affordable solutions for the warfighter. Three VE goals have been established in support of this.

VE Goal 1 is to *improve the value proposition for all DoD acquisition, construction, and support activities*. This means that DoD should take a systematic approach to examining the functions being performed internally and on-contract to identify and implement ways to improve them. VE Goal 2 is to help *align industry and DoD value propositions*. VE efforts provide value to the DoD by reducing costs while increasing capability. VE simultaneously generates value to industry by allowing shared savings to increase profit margins. VE Goal 3 is to *increase Value Engineering outreach*. Education and training will become elements of an intensive outreach effort to communicate the opportunities VE provides and how to take advantage of those opportunities.

**Goal 1: Improve the Value Proposition for all DoD Acquisition, Construction, and Support Activities**

Whether acquiring a product, providing a service, or building a facility, DoD benefits from lowering cost, reducing cycle time, improving readiness, and increasing warfighting capability. Improving this value proposition across the board is a complex endeavor. It starts with an understanding of the value for all customers and stakeholders. It then considers all processes that affect the delivery of this value and seeks both to eliminate waste (non-value added activity) and to create additional value. Special attention is paid to the interfaces between processes, where the greatest opportunities for improvement are often found. Tradeoffs are conducted so that function cost will not exceed function worth. When exercised among functions that are not controlled contractually, the outcome of the Value Engineering process is often a Value Engineering Proposal (VEP).

This goal can be accomplished through broad and rigorous application of the VE methodology



Senior leadership conducts VE workshop to improve the enterprise value proposition.

by all program managers. The methodology is often applied in the context of workshops designed to build continuous improvement and conducted by trained facilitators. Such workshops act as a catalyst for change. When held outside of the office setting, they help break the cycle of patterned behaviors. They bring together professionals who may have rarely had an opportunity to meet collectively and participate in such a comprehensive analysis of the process.

Process improvement efforts in DoD often compete with one another. A concerted effort should be made to link VE, Lean, Six Sigma, and

other similar initiatives so the right technique is used in the right circumstances. Individually, each initiative is good; together they complement each other to be even better.

## Goal 2: Align Industry and DoD Value Propositions

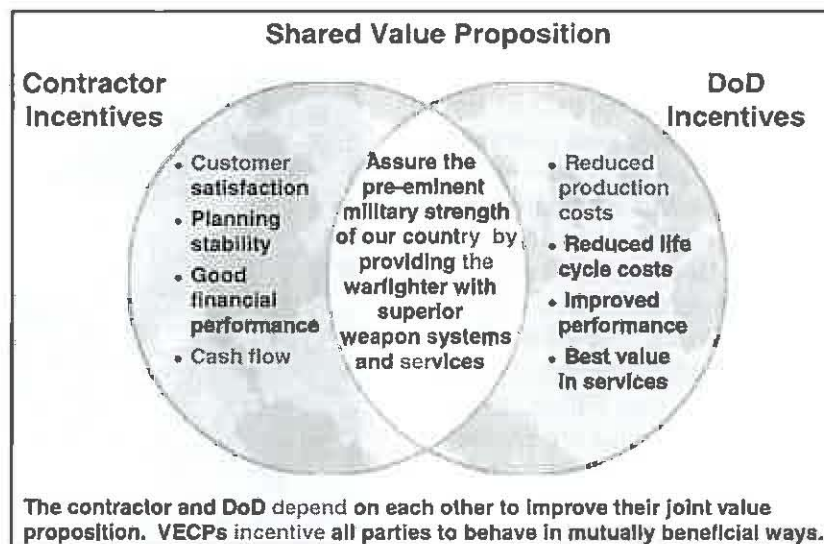
DoD and its industry partners (both prime contractors and their supply chains) are dependent on each other for the creation of value and success. Value Engineering Change Proposals (VECPs) are one of the most effective ways of demonstrating DoD partnering with industry. Based on partnering, communication, trust, and mutual understanding of the acquisition business case, incentive strategies can be applied that demonstrate to the contractor that its objectives can best be met by successfully meeting DoD's objectives. Industry's value proposition is almost always improved by achieving an adequate return on investment.

There are both direct and indirect advantages to industry for submitting VECPs that change its contract with DoD. The most obvious advantage is the fact that the contractor receives a substantial share of the cost savings that accrue from the implementation of VECPs. In addition, development costs are reimbursed on approved VECPs and they may provide usable technology on other product lines. Perhaps even more important than the financial reward of shared savings on successful VECPs, an active VE program also improves a contractor's competitiveness and helps establish a reputation as a cost-conscious producer. Several suppliers have been selected as outstanding VE

contractors and have been recipients of the Department of Defense's VE Achievement Awards. Consequently, use of VECPs aligns industry and government value propositions.

The VE Program Requirement (VEPR) clause in the FAR was originally intended to provide contractors with a small amount of

money to study cost savings ideas and then generate VECPs. This clause is rarely used today. DoD will develop new guidance on this subject and identify pilot programs to use the VEPR clause in a way that incentivizes contractors to optimize their efforts to enhance the joint value proposition. In addition, there have been several restrictive interpretations of the FAR that have inhibited the use of VECPs on performance-based contracts. These interpretations are a waste of taxpayer dollars. DoD will unambiguously clarify the FAR and encourage OMB to update its A-131 circular so that such misinterpretations will not occur in the future.



### Goal 3: Increase Value Engineering Outreach

Outreach to all VE customers and stakeholders will improve their knowledge about what to do, how to do it, and the attainable benefits. There must be continuous education and training of the workforce to ensure that there is access to the necessary expertise. The rationale for the strategy, goals, and metrics will be disseminated through all acquisition courses and other mechanisms. Industry will be encouraged to include the strategy and goals in training it provides its workers. A VE community of practice (CoP) will be brought together to share and to learn from one another face-to-face and virtually. This community will be bound by a common goal and purpose that is supported by a desire to share experiences, insights, and best practices.

The Office of the Secretary of Defense (OSD) will build interfaces between VE and sustainment communities to take advantage of the synergies between them. Risk management processes and VE methodologies complement one another. VE is ideally suited for use in resolving risk issues. Sustainment risk communities identify problems (ideally with enough lead time to determine a solution) and the VE tools develop solutions to those problems through function analysis. VE also provides incentives to contractors to help fund the solutions. The Diminishing Manufacturing Sources and Material Shortages (DMSMS) initiative is an example of VE providing methodologies to solve sustainment risk areas.

OSD will also reach out to DoD service providers to increase their awareness of VE. Most VE-generated savings, especially those that are contractor initiated, are related to hardware acquisition. However, DoD now spends more than 35 percent of its contract dollars on services. The FAR VE language is hardware-oriented. This implies that it is more difficult to identify mechanisms for sharing savings and calculate savings with certainty in services contracts. Potential workarounds for these issues will be developed and the previously mentioned VEPR pilot programs will be used to establish an experiential base for a future guidebook on the subject.



Finally, OSD will conduct an intensive outreach campaign to DoD system providers. OSD will take actions to raise awareness and increase the use of VE in the DoD Services/Agencies and will provide the support needed by contractors to increase their use of VECs.

## Implementation

The three VE goals are interrelated. **Goal 1** promotes the widespread usage of the VE methodology, both within DoD and across DoD-industry business relationships. **Goal 2** attempts to overcome several barriers that inhibit the implementation of the improvements generated from using the VE methodology. In addition, pursuit of this second goal suggests a source of resources to expedite the development and approval of proposals generated by industry. Finally, **Goal 3** deals with the outreach process needed to inform DoD and industry program managers (PMs) and their staffs on how to capitalize on the potential benefits offered by the VE program. Increasing Value Engineering outreach is therefore an important enabler for **Goals 1 and 2**.

The VE community must engage in continuous process improvement. There will be an organized interaction among VE customers and stakeholders through workshops and other similar fora to obtain a better understanding of barriers and to identify corrective actions. VE awards will be presented in annual ceremonies recognizing outstanding achievement in both government and industry. Such leadership recognition will encourage increased usage of VE. Defense Acquisition University (DAU) coursework will be updated annually to ensure that the VE content is adequate and up-to-date. VE successes will be highlighted in a broad range of publications to expose the benefits and opportunities to wide audiences ranging from contracting officers to industry and government program managers. Similarly, VE community participation in conferences and seminars will be used to gain further exposure.

The following objectives are indicative of goal achievement:

- Net government savings and cost avoidances resulting from VE will be at least 1.5 percent of total obligation authority
- At least 500 VECs will be implemented for FY 2009 through FY 2012
- At least 25% of the total annual VE savings will be generated from services contracts by FY 2012
- VE outreach presentations will be made to at least 20 of the top 100 defense contractors by FY 2012

OSD will monitor the goals and objectives articulated in this document as well as the activities being undertaken to achieve them. Meeting these goals depends on the cooperation, support and leadership in DoD. These principals must work to ensure that VE is appropriately considered within program offices, especially major defense acquisition programs. In addition, leadership must work to remove barriers that inhibit VE applications. Finally, they also must ensure that trained expertise is available to enable program offices to capitalize upon VE opportunities.

Value Engineering has been used effectively for more than 50 years in countries and companies throughout the world. Following the concepts depicted in this strategy will lead to continued growth and value creation as part of DoD's efforts to reduce cost.

