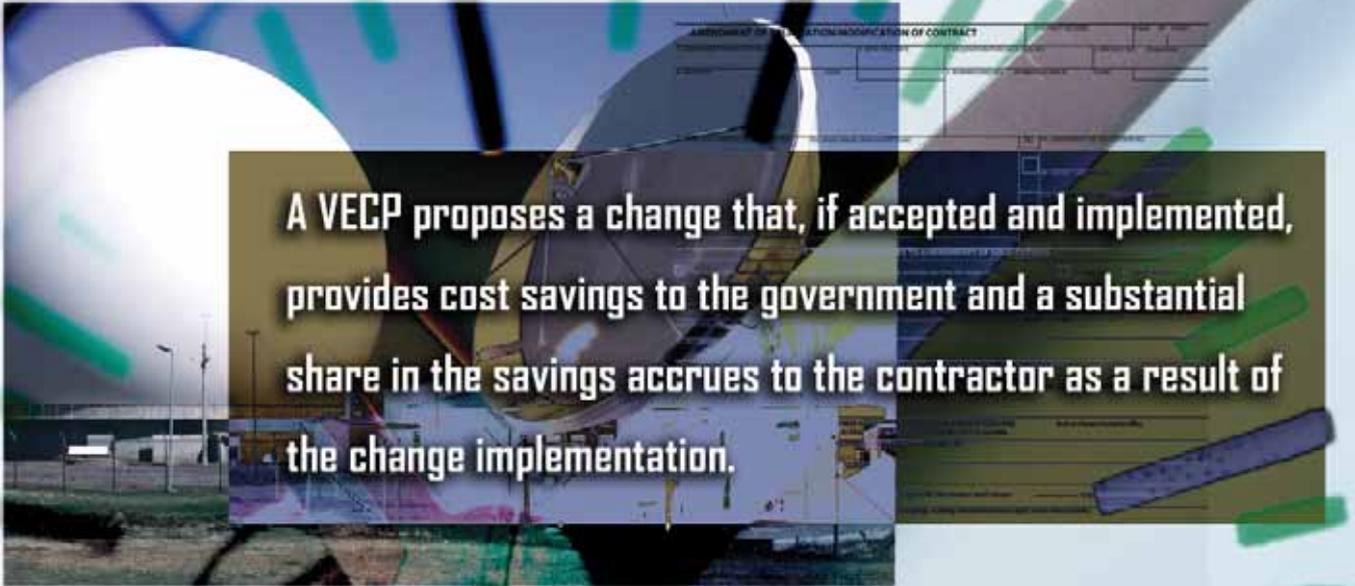


Reducing Costs with Value Engineering Change Proposals

VECPs in Supplies or Services Contracts

Danny Reed ■ Jay Mandelbaum



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Value engineering is an important and flexible tool in the Department of Defense's effort to reduce costs while retaining required performance aptitude. The VE methodology saves money, increases quality, and improves mission capabilities across the spectrum of DoD systems, processes, and organizations. It employs a simple, tailorable, and structured set of tools, techniques, and procedures that challenge the status quo by promoting innovation and creativity. As used in DoD contracts, VE fundamentally looks at any contractually specified item, function, process, or deliverable, and it devises a way to do it better and cheaper.

A VE change proposal is a proposal submitted to the government by the contractor in accordance with the VE clause in

As a research staff member at the Institute for Defense Analyses, Reed leads value engineering and reduction of total ownership cost initiatives for OSD. He worked 27 years on manufacturing development for the F-16 program at Lockheed Martin. Mandelbaum leads technology research in readiness assessments, quality assurance, and systems engineering initiatives for OSD as a research staff member at the Institute for Defense Analyses. He spent 30 years in the federal government.

the contract. A VECP proposes a change that, if accepted and implemented, provides cost savings to the government and a substantial share in the savings accrues to the contractor as a result of the change implementation. It provides a vehicle through which acquisition and operating costs can be reduced while the contractor's rate of return is increased.

Substantial Benefit to DoD and Industry

Using contractor-submitted VECPs provides incentive to both the government and its industry partners to achieve real-time best-value solutions as part of a successful business relationship. From a government perspective, benefits include:

- Providing incentive to industry to use its high-level engineering expertise to reduce costs and improve capabilities of DoD systems immediately
- Building a more effective business relationship with industry.

From a contractor perspective, benefits include:

- Increasing financial performance by sharing in the cost savings that accrue from implementation (VECPs pro-

vide a source of profit excluded from the profit limitations on contracts)

- Creating business opportunities for modernization or technology insertion
- Enhancing competitiveness by improving the item in production or other related items and establishing a reputation as a cost-conscious supplier
- Improving communication with the customer
- Promoting retention and growth of technical expertise by providing engineers with opportunities to work on more challenging problems
- Developing technology that can be used on other contracts.

The flexibility of VECPs is enormous. For example, consider a situation in which a major missile program extends its scheduled procurements because of program funding cuts, resulting in annual purchases of half of what was expected. Radomes [*dome-like shells used to house a radar antenna*] are a high-cost item under that particular missile program acquisition. If they were to be purchased on the revised procurement schedule, the unit price would increase by 50 percent as a result of production slowdown. Because radomes do not change, the government wants to purchase them all at once to reduce the overall cost of the program. However, the government lacks the resources to purchase the full number in the current fiscal year.

The contractor has the latitude to use its own funds to make the full radome purchase without using the VECP clause. However, the acquisition of the radomes would be at great risk to the contractor with little or no likelihood for return on investment because, based on Federal Acquisition Regulations (FAR) pricing principles, the contractor would be required to sell them back to the government at the price paid. Meanwhile, the contractor would have incurred inventory holding costs and lost opportunity costs. Under FAR Part 48, the better solution would be to use a VECP on the performance-based contract. This allows the contractor to make the quantity purchase and sell future radome lots back to the government at the lower bulk-buy price, thereby leading to huge potential savings. The VECP provides significant savings above the inventory holding costs. In a real-world case involving radomes, using a VECP led to a total savings of \$1,153,500 shared equally between the contractor and the government.

The Need for Greater Use of VECPs

DoD encourages using VECPs on contracts in accordance with the FAR. Part 48 governs VE within the federal government. According to FAR 48.201(a), unless exempted by an agency head, a VE incentive clause must be included in all contracts exceeding \$100,000, except those for research and development (other than full-scale development), engineering services for non-profit organizations, personal services, commercial items, or a limited specific product development. Furthermore, the use of the VE incentive clause

is encouraged for use in smaller dollar-value contracts in which there is a reasonable chance for savings. For supplies or services contracts, FAR 52.248-1 is the incentive clause that provides the basis for contractors to submit VECPs. Although this clause and its alternates have typically been used in relatively clear-cut situations, an untapped potential exists for flexibility and tailoring to accommodate the needs of the business partners.

The past five years have seen a heightened importance of sustainment for older existing systems. Contractor logistics support is being used more often to maintain current fielded systems. New techniques are being sought to improve existing systems, to extend service life, and to reduce operating and support cost. This enhanced interest in sustainment of existing systems offers an increased opportunity for the use of VECPs.

Unfortunately, in today's contracting environment, a number of factors impede taking advantage of this potential. External circumstances often add complexity to VECP processing. While these circumstances can be accommodated by the current FAR clause, the contracting process is not well understood by all acquisition process participants. An additional complicating factor is the relatively small number of VECPs being submitted as compared to past years. Also, work on a VECP is usually initiated before the VECP is formally accepted by the government. Until a VECP is approved by the government, the contractor is at risk for costs incurred. All of these factors can lead to a contractor's perception that the acceptance process is too complicated and the risks are too high. Consequently, many contractors are discouraged from submitting VECPs. Likewise, many program managers and contracting officers within the government do not understand the VECP contractual process and, lacking this insight, do not fully use the program.

While there are often multiple contract modifications made on the instant contract [*the contract under which the VECP is submitted*] before a single VECP is accepted, the process is relatively straightforward. The first modification may be an approval to begin work. The second may be the settlement of all instant, concurrent, and possibly future savings shares (often called the definitization modification). The third modification may be the record engineering change proposal that changes the configuration. In addition, as new contracts are awarded, there may be further modifications to provide the contractor with its share of future savings.

To help overcome some of these complexities and enhance the likelihood of successful outcomes, the following paragraphs suggest some best practices for using VECPs in specific contracting situations.

Undefinitized Contract Actions with VECPs

The undefinitized contract action (UCA) has proven to be one of the best ways to expedite the VECP process, reduce

risks, and enable all parties to maximize savings. The UCA allows VECPs to be submitted early in the contract and, thus, VECPs can be implemented early to maximize savings. Defense Federal Acquisition Regulation Supplement (DFARS) 217.7401(a)(2) excludes VECPs from the restriction on the use of UCAs.

Non-Complex VECPs Needing Rapid Action

This is a situation in which the nonrecurring expenses (NREs) are small, success can be demonstrated quickly, and breakeven [*when a balance is reached between investment and return*] occurs relatively early. Even in this simple case, multiple contract modifications are needed to maximize the benefits for both the government and the contractor. A UCA with appropriate caveats allows the contractor to initiate VECP activity immediately and contractually establishes a not-to-exceed cost to develop and implement the change. The modification that settles the VECP occurs later—after the contractor has submitted full pricing data.

As a best practice, the use of a UCA with appropriate caveats can generate savings for the government and contractor in situations in which quick action must be taken (e.g., all of the savings will occur on the current contract) to modify an item and reduce its cost. The UCA provides the contractor with some assurance

- Earlier implementation of the improved system
- Original delivery schedule maintained.

Advantages to the contractor:

- Greater share of savings to increase profit
- Reduced risk of early implementation.

Long-Term, Complex VECPs in Which the Government Funds the NRE Upfront

Long-term VECPs result in added complexity. In addition to multiple contract modifications, breakeven occurs in a future contract and nonrecurring engineering (including testing) takes several years. The government may fund all, some, or none of NRE for the VECP in the current contract.



There is an unrealized potential for using VECPs in today's contracting environment.

the government will buy the revised item, and, assuming all caveats and concerns are resolved, it contractually implements the VECP. The contractor may then make informed business decisions about committing resources and taking any other actions necessary to deliver the modified items as soon as possible. Under the best of circumstances, no deliveries of the unmodified item will be made. Without such an indication of interest from the government, the contractor is much less likely to take any action until final VECP approval. The result of the delay is that most—or, in the worst case, all—of the items will be delivered in the original, more expensive way.

Advantages to the government:

- Greater savings
- Minimized NRE liability though a contract modification with a not-to-exceed cost to develop and implement the change.

As a best practice, a UCA, with appropriate caveats, should be used to get mutually beneficial work started quickly. If the government is able to fund the NRE and if both parties are interested, the government should use the funding as leverage to maximize its share of the savings and expedite the process. If the government is only able to fund part of the NRE, the government could use the funding as leverage to increase its share of the savings (above the minimum allowable by the FAR). Thus, the government's share of savings is greater than the contractor's share, depending on the amount and the associated risk by the government. The UCA mitigates some contractor risk, allows the contractor to charge the basic contract for some of the development efforts, and enables the government to get work started quicker when funds are not available. The contractor may

fund negative instant contract savings in anticipation of recouping that investment out of future savings if government funds are not sufficient for the entire NRE effort.

Advantages to the government:

- Involvement in the process to solve the problem, thereby attaining strong assurance that the final product will meet requirements (for cost savings, capability, etc.)
- Ultimate savings and increased capability
- Reduced obsolescence.

Advantages to the contractor:

- Assured reimbursement for NRE
- Improved likelihood of future sales, generating a share of future savings to increase profit
- Opportunity to build the latest configuration using modern technology
- A share of the savings.

VECPs on Performance-Based Contracts

Using a VECP with a performance-based contract is beneficial when nonrecurring costs are greater than the savings on the current contract. In this situation, the VECP is the only mechanism that enables the contractor to recoup its investment (in future contracts) and enables the government to realize the benefits of the investment.

A mistaken belief is that a VECP requires a change in a specification. It does not; it requires only a change in the contract. The change could be a contract modification for a business arrangement authorizing the VECP and agreeing on sharing future savings without any technical change to the configuration baseline, such as when a contract contains the former military standard on configuration management. As such, it required the VECP to be submitted on DD Form 1692, *Engineering Change Proposal*. On Block 30 of the form, "Configuration Items Affected," it noted "None." On Block 31, "Effects on Performance Allocations and Interfaces in System Specification," it noted "This change will have no effect on the end item's system performance. This value engineering proposal simply allows us to take advantage of the substantial cost savings obtained by the multi-year contract that Company Z had negotiated."

As a best practice, VECPs should be allowed on performance-based contracts. Letters that agree to treat changes as a VECP on performance-based contracts should be issued where appropriate to get the work started faster. The government becomes contractually committed to consider the VECP in future contracts only when the VECP meets every term of the offer.

Advantages to the government:

- Lower cost
- Ability to benefit from longer-term cost-reduction efforts
- Improved capabilities.

Advantages to the contractor:

- Reduced investment risk
- Additional profit from share of savings
- Ability to undertake longer-term cost-reduction efforts.

VECPs on Incentive Contracts

When a VECP is awarded on a contract with incentive clauses, the contract should be modified in a way that does not reward the contractor twice for the same activity while maintaining the desired incentive structure. The FAR states that payments to the contractor generated from a VECP should not be rewarded under any other clause of the contract.

As a best practice, the government should encourage VECPs on contracts with incentives. For contracts with no direct cost-based incentives, there is no potential for double rewards. The incentive structure is designed to encourage certain desirable behavior that is complementary to VECPs. When there are cost-based incentives, there may be circumstances in which both the government and the contractor benefit from using the VECP clause in the contract. When a VECP is approved, the cost-based portion of the incentive pool should be adjusted so the contractor is not rewarded twice for the same activity.

Advantages to the government:

- The contractor is not rewarded twice for the same activity
- The existing incentive structure is maintained and desired behaviors continue to be motivated
- Costs are reduced as quickly as possible.

The advantage to the contractor is that options for incentives using VECPs as well as other incentive clauses are preserved.

VECPs on Development Contracts

Another misconception is that VECPs apply only to production contracts. Whenever a new development contract is awarded, the contractor's systems engineering process leads to trade-offs to meet the cost and schedule requirements of the contract. Even under circumstances with exceptionally low risk, there is usually no time, nor are there resources for a parallel effort to use an alternative (emerging) technology that is expected to perform better at less cost. VECPs are an effective mechanism for funding such parallel efforts as long as the government is satisfied that the original solution was the best available at the time.

As a best practice, DoD should permit contractors to start a company-funded parallel VECP effort on development contracts to offer a VE alternative to a high-cost part of the system, like a missile seeker, as soon as possible after the development is completed. The government should monitor the progress. When companies will not undertake such a parallel effort, a VECP on development contracts should

be mandated by paying for the VE activity under FAR 52.248-1, Alternate I or II.

Advantages to the government:

- Under a mandatory VECP, the contractor gets a smaller share of the savings
- Shortly after the new system is qualified, a VECP can be offered to change the system to lower costs and improve performance
- The government can get an improved system much earlier than normal while having its costs paid out of the savings
- A VECP on a development contract offers the greatest opportunity for savings because it implements early and can affect the largest number of units.

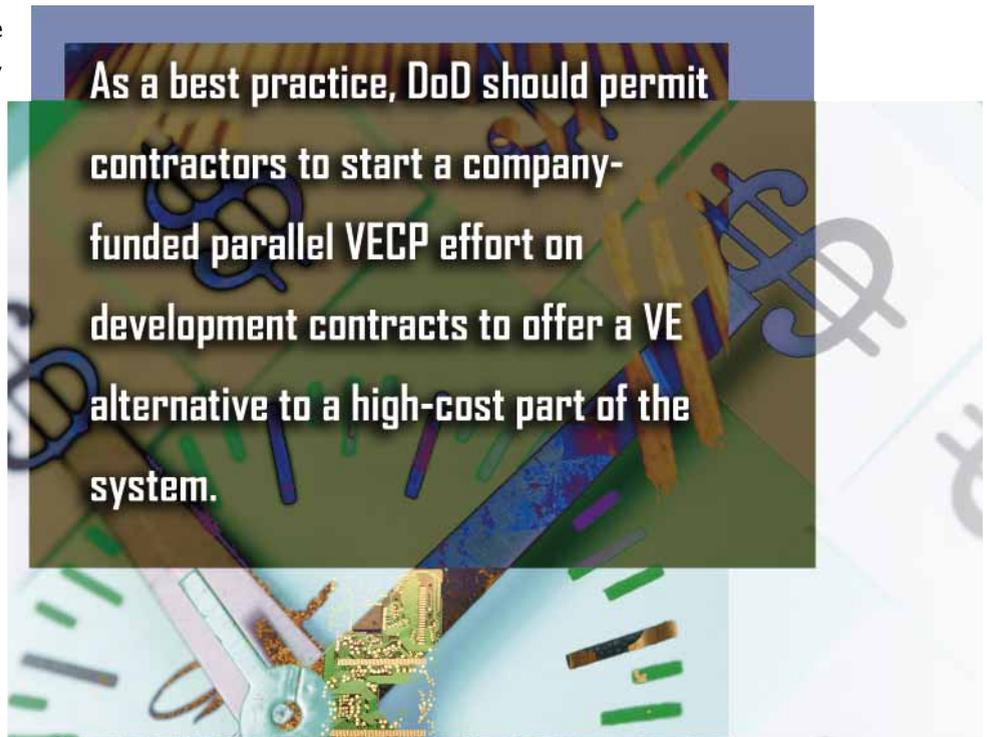
Advantages to the contractor:

- An opportunity to share in savings
- A competitive advantage in being able to build a more advanced system earlier
- Improved customer relations by working with the government on the VECPs.

The Potential in VECPs

There is an unrealized potential for using VECPs in today's contracting environment, and the widespread dissemination and use of the information this article provides, along with the sharing of other knowledge and experience from the past and the future, will help advance strategic objectives for DoD and provide increased profit and other benefits to the contractor.

Effective knowledge management means intentionally using intellectual assets to improve organizational performance through increased efficiency, effectiveness, and innovation. It aims to link knowledge seekers with knowledge sources (both written and experiential). Web-based communities of practice are proven vehicles for making these connections, for linking people with experience to others who can benefit from their insight and knowledge, and for nurturing a culture that facilitates two-way communication and sharing of knowledge. Communities are bound by a common goal and purpose, and are supported by a desire to share experiences, insights, and best practices.



Such a knowledge management approach is being applied to VE. A community of practice, initially focused on VECPs, has been organized to help practitioners share and learn from

one another, face-to-face and virtually (see <<https://acc.dau.mil/vecp>>). The community of practice will help navigate the VECP process, improve the probability of successful VECP evaluations, provide assistance and answers to technical questions, and serve as a forum for disseminating the latest information. Contracting officers, VE practitioners, program offices, and industry representatives are all encouraged to use this Web resource to share and build on the material contained in this guide.

There is a great potential for additional VE savings to benefit both the government and contractors. The opportunities are real and should be worked by both government and industry personnel.

Note: Jay Mandelbaum and Danny Reed pulled material for this article from their book, Guidebook for Using Value Engineering Change Proposals in Supplies or Services Contracts, published by the Institute for Defense Analyses.

The authors welcome comments and questions and can be contacted at dreed@ida.org and jmandelbaum@ida.org.