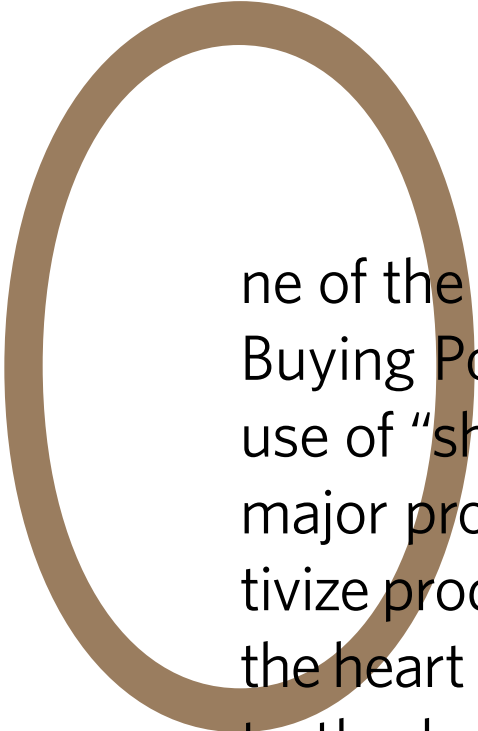# Should Cost Management: Why? How?

Under Secretary of Defense (AT&L) Ashton B. Carter, Ph.D. ■ *John Mueller*

ne of the most powerful of the Better Buying Power (BBP) initiatives is the use of "should cost" management on major program acquisitions to incentivize productivity and reduce cost. At the heart of this initiative is a challenge to the business-as-usual approach, with its underlying assumption that program costs will grow to match (or exceed) the independent cost estimate. The goal of the program manager

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must be to challenge the inevitability of past performance by identifying and eliminating process inefficiencies and embracing cost savings opportunities. The purpose of this paper is to outline how to implement "should cost" management and describe how it can lead to more affordable programs.

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is that they follow the axiom "All estimates are wrong; some estimates are more useful than others." This is not an indictment of cost estimating practitioners, who boldly attempt to predict future costs by reviewing reams of data from previous efforts.

The main problem with the will-cost estimate isn't in the numbers or how it was reached; the problem is that once the will-cost estimate is derived and the budget for the program is set, historically, this figure becomes the "floor" from which costs escalate, rather than a "ceiling" below which costs are contained—in many ways creating a self-fulfilling prophecy of budgetary excess. Therefore, it is essential that costs be controlled below the will-cost estimate, and the challenge for the PM is to be diligent in identifying productivity improvements and efficiencies to do this.

Why Use 'Should Cost' Management?

The reasons to conduct a "should cost" vary from basic compliance with the AT&L initiative to zeal— "I've been waiting for years to attack program costs, and now's my chance!" Whatever the PM's reason, implementing the BBP "should cost" guidance must take a focused approach where the PM takes greater ownership of the program cost baseline to drive out costs. "Should cost" demolishes the assumption that historical data, which are the basis for the program's independent cost estimate, represent efficient economical operation. Indeed, in any given program, there are countless processes, technologies, and trade-offs that can increase efficiency, reduce unnecessary overhead, drive down risk, and bring substantial savings over historical "norms." Program management teams must work diligently to find these opportunities and build them into their program plans and cost estimates to arrive at the program should cost.

'Should Cost' Versus 'Will Cost' Mentality

Program costs are estimated in a variety of ways and by a number of organizations. The Program Office Estimate (POE) represents the PM's first calculation of the resources needed to be successful (or in some cases, the Service-level cost estimation). This is often a bottom-up engineering analysis of costs. For acquisition category (ACAT) 1D programs, the independent cost estimate, or ICE, (sometimes known as the non-advocate cost estimate) is done by the OSD Cost Assessment and Program Evaluation (CAPE) office and presented at milestone reviews. The ICE is frequently performed using analogous or parametric program data based on historical costs and formulas (cost-estimating relationships). From these estimates, the Milestone Decision Authority will establish the program's official budget.

In some way, each of these estimates builds upon past performance data to create an estimate of future program costs. Indeed, AT&L defines will cost as "reasonable extrapolations from historical experience." A common feature of all estimates

BBP "should cost" management requires the involvement of the PM and his entire team of functional experts. "Should cost" management relies on government and contractor teams that have learned from their experience with past programs and from intense scrutiny of the current program—areas where previous errors can be avoided, process efficiencies can be gained, and technical trade-offs will save money without compromising requirements. The PM must envision the program operating as it could be, rather than accept things as they always have been. The program team must embrace the view that it is to everyone's advantage to demand a higher level of performance than the status quo.

BBP 'Should Cost' Management is Not Your Father's 'Should Cost' Review

Don't confuse the current "should cost" initiative with the older Defense Federal Acquisition Regulation (DFAR)-defined "should cost" review. The DFAR review is typically undertaken when a program is entering production. This review was a manpower-intensive, in-depth review of contractor production processes and costs. A large team of engineers, production specialists, logisticians, and program managers performed the in-depth analysis.

A BBP "should cost" management approach should be used throughout the program life cycle. It is particularly focused on up-front planning and exploring engineering trades to ensure successful outcomes at every milestone. By creating cost-conscious technical and schedule baselines, identifying cost saving

engineering trade-offs, and then aggressively managing areas identified for cost savings, efficiencies can be gained throughout the program. Productivity improvements might include investing in new technologies that reduce out-year costs, finding alternative sources or technologies for high-cost components, combining developmental and operational testing, and maximizing modeling and simulation. There are no silver bullets; each PM must find solutions that fit his or her specific program. In the final analysis, embracing the "should cost" management paradigm represents a cultural change, not just a one-time event.

Initiating 'Should Cost' Management

The Sept. 14, 2010 Better Buying Power memorandum reads in part:

> I will require the manager of each major program to conduct a "should cost" analysis justifying each element of program cost and showing how it is improving year by year or meeting other relevant benchmarks for value.

As you begin your initial "should cost" analysis, gather your program's functional leaders together to perform an end-to-end review of the program. Question assumptions. Ask probing and perhaps uncomfortable questions, such as:

- Are the current program requirements still valid? Is engineering trade space available? What technical aspects of the program appear to be driving costs? Do alternative technologies or processes exist, and what are the potential savings?
- Is the program structured and resourced properly? What changes to organization, processes, schedule, or budget profile would make the program more efficient?
- What government activities, processes, or bureaucracy drive costs? Are these actions necessary for program success or risk mitigation? Can they be waived, modified, or eliminated?
- Can modifications to the contract be made to help the contractor improve efficiencies?
- What data or deliverables are we requesting from the contractor? What individual or organization uses these? Are they useful and necessary?

Frequently, as programs mature, requirements, processes, data, and priorities become routine and habitual. Fundamental assumptions need to be questioned. This sort of "spring cleaning" for your program can be a ready source of substantial "low hanging fruit" savings. Additionally, challenge your production assumptions; quantities and rates could have been established more to fit into a now outdated budget profile rather than to minimize your production costs. Hold as many of these discussions jointly with your contractors and seek their ideas and inputs. This will not only demonstrate commitment to affordability, but make the follow-on reviews of contractor activities easier.

Because you are trying to identify savings across all processes, it is crucial that you attack the "should cost" analysis with your entire team. You need to be dedicated and persistent, and you must approach the task with urgency. Remember: You are trying to change the status quo, and there will be resistance to that change. Be prepared. Your goal should be to identify the "should cost" savings candidates, get the required changes into your program baseline as quickly as possible, and then execute smartly so you do not lose the opportunity to cash in on these savings.

The 'Should Cost' Management Team

To reiterate a key point: Your "should cost" management team must include members with broad cross-functional experience; "should cost" is NOT a strictly business function (contracting and financial management). Remember, your team's objective is not to further refine an estimate, but to examine the program's technical and programmatic assumptions and make deliberate changes to reduce costs. To be successful, the team must include engineers and technical experts who can spot design or industrial process changes. It must include business and contracting experts who know where the money is. Participants from the Defense Contract Management Agency (DCMA) representative office in your contractor's facilities can be valuable members of the team, as well. You should also invite representation from your requirements shop to help adjudicate the impacts of technical trade-offs on operational capability.

The Sense of Urgency

Undertaking "should cost" management is not to be taken lightly or impulsively. A key element to success is to create a sense of urgency on both the government and contractor team. Given the current pressures on the DoD budget, it should be clear that programs that do not perform or are not affordable are at risk of being canceled or curtailed. However, a good "should cost" analysis and management plan also requires time to do right. Striking the right balance between urgent and deliberate will be key. Obviously, starting as soon as possible will allow you to finish sooner—so do not delay. Also, remember that managing to "should cost" is a long-term endeavor. You are unlikely to find all the potential cost savings in your first analysis. In the final analysis, it is highly unlikely that anyone will criticize you for coming in with additional cost savings at any time!

Objectives for 'Should Cost' Management

Remember, the primary objective of "should cost" management is to find efficiencies and savings opportunities. There are many ways that the team can achieve this end, but frequently they are divided into overhead costs and direct program costs. This is sound in theory but challenging in practice, because "one person's efficiency is another person's paycheck." The following approach may be useful in initiating your effort:

- **Scrutinize every element of program cost:** Start with the big-ticket items in your program. You may be able to create a Pareto chart of your program cost drivers as a way to prioritize your efforts. Question assumptions about requirements, technologies, and processes. Some of these may have been put in place years ago and be outdated. Given your time

pressures and limited resources, identifying one or two big cost savings opportunities can be like striking gold. Work your way down through the smaller changes, which—over time—can add up to significant savings.

- **Look for savings in repetitive activities:** Over time, repetitive processes can become habitual and self-sustaining, even when the need has long gone away. Question the reasons you should create a "routine" report. Analyze how you could reduce the time or staff required to work on a repetitive task. Ask why so many people attend various meetings. Call in the assistance of Lean Six-Sigma experts to assess your processes and trim the fat. Encourage your contractors to similarly self-evaluate and jointly look at inefficiencies in processes you engage in together.

- **Leverage learning curves:** Repetitive tasks, particularly in manufacturing, benefit from the "learning curve." Theory says that the initial items on an assembly line take longer to build and cost more than subsequent items because early mistakes are discovered, items are reworked, and processes are refined. Check your cost estimates for your production lots and see if they include credit for the learning curve effect. (Learning-curve benefit is frequently cited as a percentage decrease in unit price for every doubling of the quantity produced). Caution: work to minimize changes in the product or process; if you have to start over producing a "different" item, the learning curve is "reset," and you lose the cost savings benefits for a time. Frequent changes essentially nullify the learning curve, and costs will remain higher than they need to. So be judicious and intentional about production changes. Learning curves are a powerful tool in reducing the price per unit, and a small percentage decrease can have a large cost impact for program producing a large number of units.

- **Examine overhead and indirect costs:** Frequently viewed as secondary when compared to the direct program costs, many cost teams look to overhead accounts for low risk efficiencies. A routine review of invoices to verify that these costs are "reasonable and allowable" may find items that are negotiable and will save the program money. A more thorough review of contractor overhead costs is a complex undertaking requiring insight into corporate structures, business assumptions, and subcontractor arrangements. It will likely require time and a trained audit team and should probably be

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undertaken only if you have reason to believe the costs are out of line. Note that even if you are successful in having some overhead costs shifted off your program, these costs may have to be absorbed by other government programs dealing with the same contractor rather than resulting in actual enterprise-wide savings.

- **Incentivize your contractor on cost savings:** Creating a win-win situation for the government and contractor can be the most significant cost cutting tool. If properly incentivized, the contractor has the best chance of reducing costs since they have greater engineering and business insight into the actual design and manufacturing processes of the program. The government PM has a wide range of possible incentives ranging from improving cash flow, to higher fees or profit when the price to the government is reduced.

The objective of "should cost" management is to smartly reduce the cost of defense equipment and services to the taxpayer. "Should cost" savings are not arbitrary ("Everyone takes a 10-percent cut"), or a challenge to the PM to play "liar's poker" ("I can bring this baby in for a billion dollars under the ICE, by golly!"). Every identified "should cost" savings opportunity must be tied to a specific engineering or business change that can be quantified and tracked. PMs should have a good analysis to show the proof of a potential savings, the associated consequences and/or risks, and a viable alternative or "off ramp" in the event the change or savings cannot be realized. Likewise, program teams should try to anticipate longer-term unintended consequences that may result from short-term savings strategies like reducing test hours or inspections. The PM's team should take the longer view and balance cost savings and total program success—delivering for the warfighter. The objective of "should cost" management is making smart changes that result in better outcomes.

Final Words
"Should cost" management is doing the right thing for our programs, the warfighter, our suppliers, and our nation. It will not be simple or easy. It is not a one-time fix but a change in the culture of our government teams and our contractors. And failure is not an option.

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