A Forward-Looking Way to Improve Weapons Programs

Getting the most from a sustainment business case analysis (BCA)

A business case analysis (BCA) for U.S. Department of Defense weapons programs should serve as more than a requirement—it should also be an educational endeavor. BCAs provide the opportunity to step back from the daily grind and think strategically. They can generate unique insights for stakeholders through a process that reviews all strategic options and outlines the corresponding performance, risks and costs. Properly executed BCAs can identify 25 percent or more in life cycle savings, while maintaining performance with manageable risk.

During typical business case analyses, staff members grind through the required elements, often gaining only limited insights about possible alternative means for completing their mission. But the process can offer much more. A forward-looking approach—rooted in hard data rather than intuition and past practices—provides a deeper look at how the sustainment business model is working and the potential alternatives available. We designed and implemented such an approach for the U.S. Department of Defense. Using commercial best practices from our experience working with Fortune 500 companies, we provided the DOD with tools to make informed strategic decisions about complex problems today and into the future.

Maintaining Flexibility

Most people understand that sustainment strategies evolve throughout the life of a weapons program, but typical BCAs take only a snapshot in time and rarely include or predict change.1 So, little flexibility exists to adjust strategies as necessary throughout the life cycle. Yet flexibility is key for weapons programs, and as programs age and evolve, leaders must account for changing conditions in their planning. For example, not purchasing technical data during the acquisition phase of a weapons program may bring short-term cost savings, but the long-term impact of that decision may cost more over time than the original savings. Ideally, flexibility is addressed early in the program life cycle when there are opportunities to develop new skills and knowledge, and time to compete for sustainment support both internally and externally—all of which leads to future cost reductions.

BCAs designed for flexibility and based on data provide a deeper look at how sustainment models work today and better forecast their future.

1 For more information, see “Supporting the Warfighter” at www.atkearney.com.
performance. Let’s look at how this is accomplished.

Design implementable alternative options for all areas. An insightful BCA approach offers different options for systems to meet requirements, a means to implement those options, and a view of the possible outcomes of each.

Within each alternative path is a comprehensive view of the program’s future end-state—including process design, execution, responsibilities and locations, contract types, funding flows, and organizational restructuring—carefully crafted to provide decision makers an understanding of all options. The analysis of alternative options is not confined to those defined at the beginning of the analysis. A “derived alternative” incorporates everything learned throughout the BCA and adjusts the definition to uncover the most advantageous solution.

Define differentiating evaluation criteria. Evaluation criteria must discriminate among alternatives across performance, cost and risk. Both quantitative and qualitative criteria are derived from weapon systems’ operational and business objectives. This often involves using new metrics that may offer better insights in the future but are not yet measured by the program. On that note, BCAs should avoid “scoring systems” that combine evaluation criteria into a single numeric alternative score. We have seen many situations in which more time is spent trying to understand the scoring system than capturing insights from the analysis. Numeric scores obscure the actual insight being developed and imply a level of precision that is unfounded and counter-productive.

Perform process-driven evaluation. Before estimating the performance of alternative sustainment models, one step in the BCA is to define the relevant business processes and products. The best way to do this is to break down operations into the main processes that affect performance (such as supply replenishment and field responsiveness) to enable reconciliation of processes and the development of comparable quantitative metrics. Figure 1 illustrates the breakdown of the repair process for new and legacy aircraft. Additionally, because some key attributes cannot be measured, we suggest investigating and assessing qualitative factors such as the benefits of integration, funding flexibility and system complexity. A “maturity model”

![FIGURE 1: Break down sustainment operations into their main processes](Source: A.T. Kearney analysis)
evaluates current technical capabilities as they pertain to the sustainment requirements for a given alternative (see figure 2). This ensures that transition timelines, risks and costs are outlined for each alternative option, based on any gaps in existing capabilities.

Develop strategic cost models. Financial modeling that goes down to the most granular level — key sustainment processes — estimates the true costs of an alternative sustainment option. While department policy may dictate how a program’s funding is budgeted, our advice is to estimate true incremental costs for each alternative, since that’s the bill taxpayers will ultimately pay. Involving stakeholders early in forecast development allows them to understand the underlying assumptions and ensures they will support the end-state cost projections.

Two types of sensitivity analyses demonstrate how changes in key assumptions and estimation errors might affect costs in different circumstances. A worst-case scenario analysis tests the upper cost limits for each alternative sustainment model by setting all variables at their most extreme values. In the “tripping point” analysis, we adjust each variable individually until a different option becomes the most attractive.

Mitigate risk. Risk cannot be evaluated as a standalone criterion, as any chosen action will carry its own risks. Rather, the goal in a BCA is to measure risk as compared to likely costs and performance within the major sustainment processes.

We suggest tackling risk first by generating different data and stakeholder observations within three categories: potential risks, which require active management to avoid undesirable outcomes; consequences and outcomes, which describe what might occur if the risk materializes and should be mapped to the appropriate processes; and concerns that stakeholders may have about possible risks. From there,

FIGURE 2: A maturity model assesses a program’s current technical capabilities

Illustrative
the suggestions can be incorporated into the BCA (see Figure 3). In situations where risk cannot be quantified, a systematic methodology can assess the likelihood and impact of risks.²

Results You Can Agree On

A BCA is not the only time to review strategy. New priorities, changes in organizational performance and budgets will always arise and require further strategic review. As leaders monitor the implementation process, regular checkpoints will ensure that performance goals are met and risks mitigated, while allowing more people to understand the relative benefits, risks, strengths and weaknesses of all options. BCAs should be more than routine milestone exercises with limited benefits; they should be the key to making the right strategic decisions today and into the future.

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² For more information, see “The Real Cost of Risk” at www.atkearney.com.