

Commercial Practices – Dilemma or Opportunity?

Risks — Yes, But Ultimately, Substantial Reward

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“I want you to try some of those new commercial practices in your acquisition program.

I hear they’ve produced some sizable cost and schedule savings.”

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As Cynthia stared into her steaming mug, she thought her future seemed as dark as her coffee. Having only recently returned to acquisition after an assignment in operations, Cynthia envisioned comfortably settling into her agency's familiar and time-proven acquisition practices. Her boss, however, had just dramatically changed her expectations by simply saying, "I want you to try some of those new commercial practices in your acquisition program. I hear they've produced some sizable cost and schedule savings."

Confronting the Real Issues

Commercial practices enable suppliers to efficiently conduct business with the government in a manner similar to that used with their private-sector customers. Like everyone in the defense acquisition community, Cynthia heard and read many accounts of program/project managers who reaped substantial cost and schedule benefits by implementing commercial practices. However, Cynthia was not so sure these new practices would produce reductions on her program. In addition, the corresponding impact of these "trendy" practices on long-term aspects of the program also concerned her. For instance, how do commercial practices affect system quality? System support? And most importantly, life-cycle costs?

Any program can make trade-offs to save money in initial acquisition costs, but afterward the operational and sustainment commands can pay exorbitantly for the rest of a system's service life. Cynthia regarded her reputation as directly linked to the acquisition, and the warfighter in the field urgently needed the system. The thought of using anything other than tried-and-true government acquisition processes caused her great concern.

Cynthia's mandate to implement commercial practices illustrates the real issues confronting today's defense acquisition managers. Throughout the Federal Government, agencies are actively investigating and testing new acquisition processes to cope with declining fiscal and personnel resources. Spurring this

change are several recent legislative reforms such as the Federal Acquisition Streamlining Act of 1994, the Defense Acquisition Management Reform Act of 1995, and the Federal Acquisition Reform Act of 1996. In addition, numerous internal agency acquisition policy changes promote and in some cases, mandate the use of many specific commercial practices.

In this dynamic acquisition environment, is Cynthia's skepticism and reluctance toward commercial practices grounded in fact, or is it simply her personal resistance to change? In the larger picture, how successfully have these practices fared in defense acquisition? And has the acquisition community established any common lessons learned from early implementation experiences?

To probe these questions and to capture the government's overall results and lessons learned in implementing commercial practices, we contacted program representatives from 37 defense acquisition programs that DoD and the defense industry regarded as pioneers in incorporating commercial practices into their acquisition strategies. Our contacts included representatives of acquisition programs across all the Services — Army, Air Force, Navy, Marine Corps, and Coast Guard.

From this group, 23 programs yielded sufficient data for detailed research and study purposes. These 23 programs ultimately became our program sample. Included in the 23-program sample were seven aircraft programs, five ship programs, four munitions programs, and seven major systems acquisition programs. For each of these programs, we interviewed front-line government acquisition managers about their hands-on experiences implementing commercial practices.

Overall, we found commercial practices afforded strong benefits for cost, schedule, and quality with few, if any, reported compromises to life-cycle support and life-cycle costs.

This article relates the highlights of our research into the actual implementation

experiences of defense acquisition program representatives who pioneered the use of commercial practices in their programs and projects. We conducted our research under the auspices of the Lean Aerospace Initiative (LAI) at the Massachusetts Institute of Technology.¹

Commercial Practices Currently In Use

To define those commercial practices currently in use, we first agreed on the Defense Systems Management College (DSMC) definition of commercial practices. DSMC defines commercial practices as: "the techniques, methods, customs, processes, rules, guides, and standards normally used by business but either applied differently or not used by the Federal Government."

Many defense acquisition managers quickly pointed out that this definition is rather broad and encompasses a gamut of business practices. Yet we found the range of possible practices rather limited. Some commercial practices were not currently achievable due to legislative and regulatory barriers; others were simply not suitable for the government environment.

We next asked program representatives from our sample program to define the practices currently used in their own programs that they viewed as commercial practices. In general, the following eight distinct practices encompass the responses we received:

No. 1 — Past Performance. Uses previous performance on government contracts as a source evaluation factor. A 1995 change to the Federal Acquisition Regulation mandated past performance for all contracts over \$1 million.

No. 2 — Best Value. Determines contract award on a range of evaluation factors besides simply lowest price, such as quality, life-cycle support, life-cycle costs, and other relevant factors.

No. 3 — Commercial Warranties. Rather than special, government-unique warranty requirements, the acceptance and use of standard commercial product

warranties or the purchase of extended product warranties.

No. 4 – Government/Contractor Cooperation and Relationship. A cooperative, mutually beneficial relationship between government and its contractors. Characterized by reducing government oversight, establishing long-term partnerships, and including contractor or industry participation in program Integrated Product Teams (IPT).

No. 5 – Performance Specifications. Defines the government’s requirements in terms of performance. Gives the contractor more flexibility to reduce costs and enhance support. In addition, shifts ultimate responsibility for performance to the contractor.

No. 6 – Commercial Specifications and Standards. Requires the same design, production, management, and accounting practices in government contracts as are currently used in the commercial marketplace. In 1994, the Secretary of Defense mandated this practice for DoD.

No. 7 – Streamlined Contract Administration. Fundamental drive to

simplify government acquisition processes by streamlining internal policies and reducing contract data deliverables (CDRL). For instance: one program consolidated 23 management documents into only five; several programs reaped substantial efficiencies by using the Internet for electronic data interchange.

No. 8 – Commercial-Off-the-Shelf/Non-Developmental Item (COTS/NDI). Recent FAR, Part 12 procedures greatly simplified the COTS/NDI acquisition process.

The eight practices previously cited (all executable under existing government regulations/policies), are currently actively promoted and implemented within the Federal Government. Using our 23-program sample as a basis from which to measure, Figure 1 depicts the frequency of use of the eight commercial practices specified in the preceding paragraph. As shown in Figure 1, recent acquisition reforms (e.g., military specifications and standards reform, the use of performance specifications, contract streamlining) figure prominently in the practices cited. Interestingly, a large

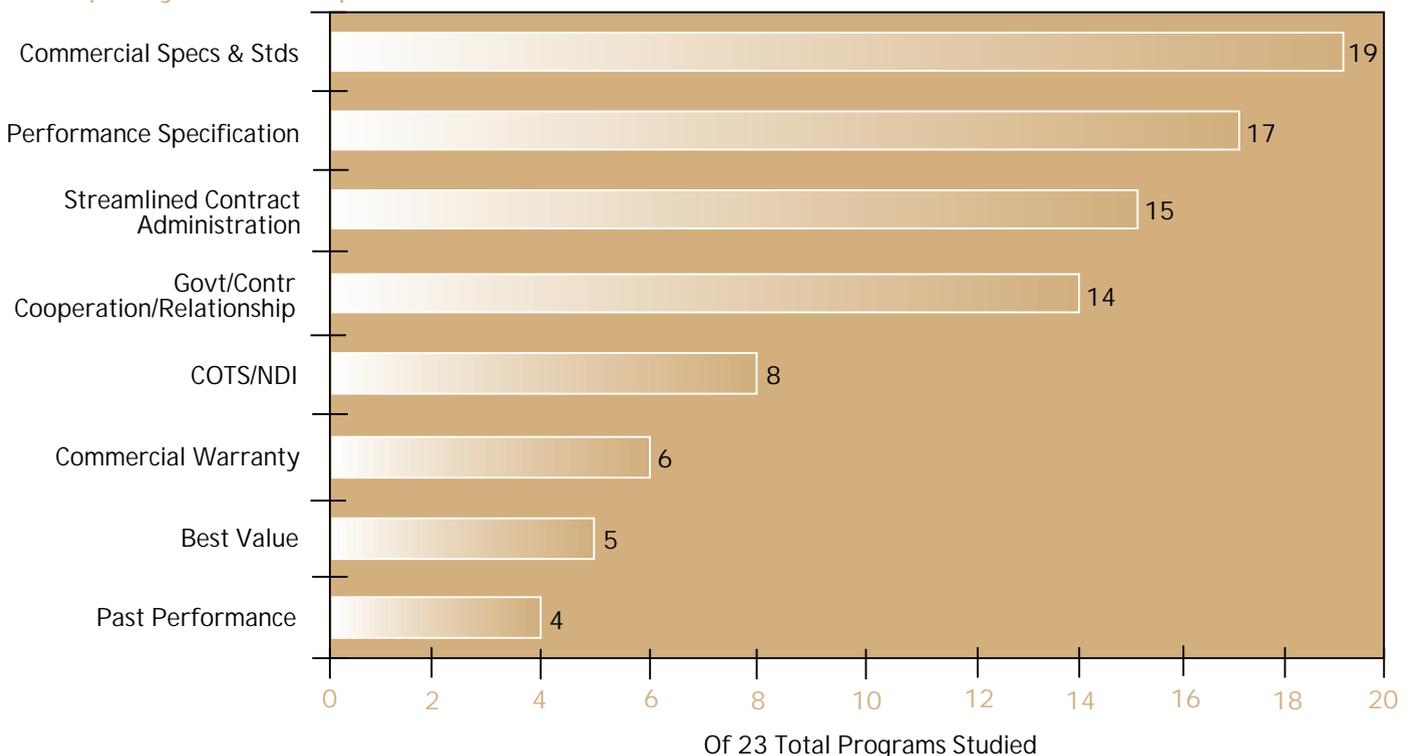
number of program representatives considered developing a close working relationship between the government and contractor as an important commercial practice.

What Benefits Result From the Use of Commercial Practices?

The improvement in cost and schedule performance attributed to the use of commercial practices varied substantially, depending upon the specific practice used. As illustrated in Figure 2, the practice of government/contractor cooperation and relationship was the clear leader for cost reductions, yet its impact diminished significantly for schedule reductions. Nonetheless, the most important observation of Figure 2 is that five practices essentially accounted for all of the claimed reductions:

- Developing a Close and Cooperative Relationship Between Government and Contractor
- Use of COTS/NDI
- Streamlined Contract Administration
- Use of Commercial Specifications and Standards
- Use of Performance Specifications

FIGURE 1.
Frequency of Use of Specific Commercial Practices



Three practices reflect negligible performance impact but probably demonstrate their benefits during other phases of the system's life cycle such as source selection or sustainment:

- Best Value
- Past Performance
- Commercial Warranty

Representatives from our 23-program sample of defense acquisition programs confirmed that their use of commercial practices indeed yielded valuable program benefits. Their use resulted in direct program savings totaling almost \$4 billion. Comparably, these savings correspond to an overall average savings of 4.3 percent per program.

To offer some perspective, a baseline for comparison of our reported cost savings is the 1994 DoD-sponsored Coopers and Lybrand study, "The DoD Regulatory Cost Premium: A Quantitative Assessment." In this study of 10 government contractors, substituting best commercial practices for traditional DoD regulations and oversight resulted in an acquisition program savings of 18 percent of value-added costs. To facilitate

our comparison, value-added costs can typically account for about half of a major defense acquisition contract's overall cost. Hence, the Coopers and Lybrand study concluded best commercial practices saved on the order of 9 percent of a major acquisition program's total contract cost. Although, our findings were not quite as high, an average 4.3-percent program cost reduction is still encouragingly substantial.

In addition to direct program cost savings, 13 of our programs attributed an average one-third staff reduction as a direct result of using commercial practices. This equates to a substantial overall total staff reduction of 884 positions. Even more, the personnel cost savings resulting from these staff reductions typically were in excess of reported program cost savings.

Complementing program savings, commercial practices likewise afforded sizable economies in program schedules. Sixteen of our programs directly attributed an average 29-percent schedule reduction to commercial practices. This corresponds to an average 17-month reduction in the acquisition schedule for

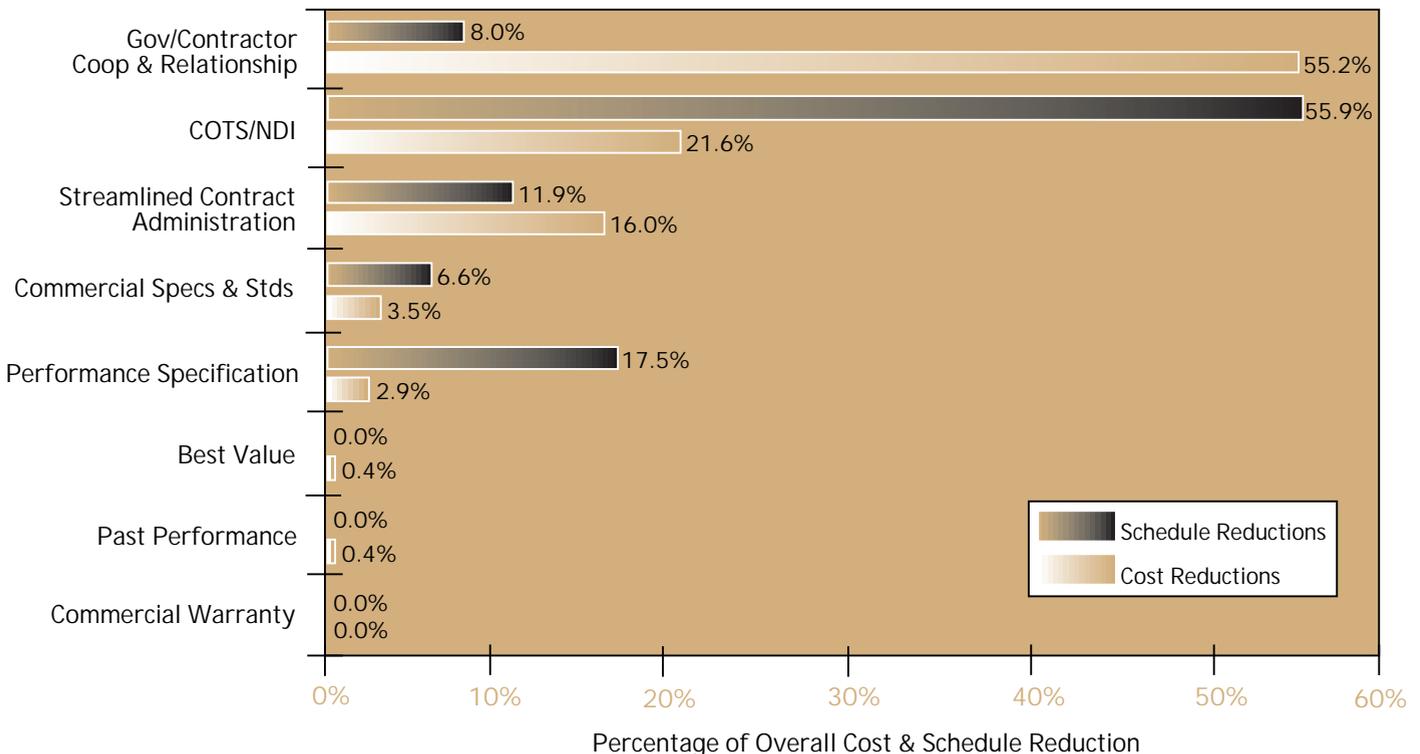
these programs. Commercial practices are a highly regarded tenet of federal acquisition reform, primarily because of their purported cost and schedule reducing impacts. Indeed our programs' results corroborate these touted benefits.

However, there are not as many documented studies directly assessing Cynthia's concerns about the corresponding impact of commercial practices on quality, life-cycle support, or life-cycle costs. To assess these issues, we asked our program representatives about their experience with these acquisition and sustainment issues.

Our program representatives claimed that the use of commercial practices actually improved two key measures of product quality – workmanship and performance. Quality of workmanship described aspects such as fit and finish, number of defects, and reliability. Quality of product performance captured how well the product performed in project testing or, when available, in actual field use.

Approximately two-thirds of the program representatives concluded that

FIGURE 2. Cost and Schedule Reduction Performance of Eight Most Frequently Cited Commercial Practices



their use of commercial practices had directly promoted workmanship quality that was equal to or better than previous expectations. Responses on quality of product performance yielded even stronger support. Nearly three-fourths of the program representatives claimed performance quality improved as a direct result of their use of commercial practices.

The life-cycle support implications of commercial practices was a rather broad concept to quantify and evaluate. Obviously, in most cases the true life-cycle support issues associated with the use of commercial practices will only be experienced in years to come as systems managers field and monitor system maturity.

Nevertheless, we asked program representatives to project the future impact of their choices resulting from the use of commercial practices in five distinct areas: warranty coverage, maintenance and repair, spare parts, training, and documentation. Overall, they believed that use of commercial practices either produced no appreciable impact or slightly improved the five measures of life-cycle support previously cited.

Program representatives reported only one attribute – documentation – as negatively influenced by commercial practices. Discussions with the few representatives noting the problem revealed that degraded documentation was the result of deliberate cost/benefit decisions on their part; less-detailed, commercial-level documentation resulted in reduced program costs.

Our study of life-cycle cost implications of commercial practices closely followed our strategy employed for life-cycle support. However, in addition to assessing the same five fundamental attributes, we also studied the issue of product obsolescence. Rapid technological obsolescence is now a difficult challenge to acquisitions involving high-tech components and equipment. Once again, we believed the use of commercial practices contributed little toward increasing life-cycle costs.



Besides risks, our program representatives found the most common obstacle to implementing commercial practices was the inherent difficulty with cultural acceptance and bureaucratic delays.

With respect to product obsolescence, overall commercial practices enabled acquisition of a more technically advanced product, enhanced the ability to upgrade with future technology, and resulted in an expectation of eventual decreased replacement costs. Moreover, DoD is placing increased emphasis on reducing the total cost of ownership of the systems it procures. With the recognition that operation and support costs may represent as much as 70 percent of a system's total life-cycle costs, understanding that the use of commercial practices represents just one of many potentially beneficial trade-offs that can be made over the life of a weapon system to help reduce its ownership cost, becomes even more important.

Therefore, the evidence emerging from our 23 programs is that commercial practices can indeed fulfill the promise of lower program costs and accelerated schedules. Moreover, improved quality and negligible impacts on life-cycle support and life-cycle costs further complement these promising advantages.

Although not all commercial practices are appropriate for all acquisition programs, we advise Cynthia to stop resisting, give her boss a hearty "Aye Aye, Sir," and jump on board with commercial practices as soon as possible.

But How Does Cynthia Jump On Board?

Like Cynthia, our acquisition managers expressed some concerns about implementing commercial practices, specifically in the following four areas:

- The most commonly cited concern was uncertainty with ultimate product performance. This is quite understandable given that the shift to commercial practices changes the fundamental management and control of the acquisition program.
- The practice of performance specifications allows the contractor substantial design flexibility. Commercial specifications and standards brings a new and

relatively unfamiliar commercial foundation.

- The tactic of buying COTS/NDI introduces uncertainty of the durability of commercial products in the rigorous military environment.
- Lastly, the practice of government/contractor cooperation and relationship replaces government oversight with the need to share information through a trusting and open relationship.

The net result of these four practices is to essentially shift the fundamental familiarity and certain aspects of control from the government to the contractor. Our acquisition managers mitigated this risk by strengthening item performance requirements, by extending the scope and duration of program testing, and by increasing the breadth and involvement of program IPTs.

Besides risks, our program representatives found *the most common obstacle to implementing commercial practices was the inherent difficulty with cultural acceptance and bureaucratic delays*. For many programs, the innovative commercial practice spirit was not shared by their supporting organizations or their chains of command. As a result, these program representatives spent much of their time explaining or defending their commercial practice strategies in order to procure the services or authorizations necessary to proceed. The frequent occurrence of these obstacles illustrates that although the DoD highly publicizes and encourages commercial practices at the highest levels, in general the overall defense acquisition workforce is not uniformly on board and supportive of the initiative.

Fellow acquisition managers would tell Cynthia the prevailing method of gaining familiarity with commercial practices is still predominantly through self-education. Of four reported sources of commercial practice information – self-education, internal experience/sources, external sources, and formal training – 15 programs relied on self-education

As the experiences of Cynthia's peers in our defense program sample illustrate, the rewards of commercial practices can indeed be substantial.

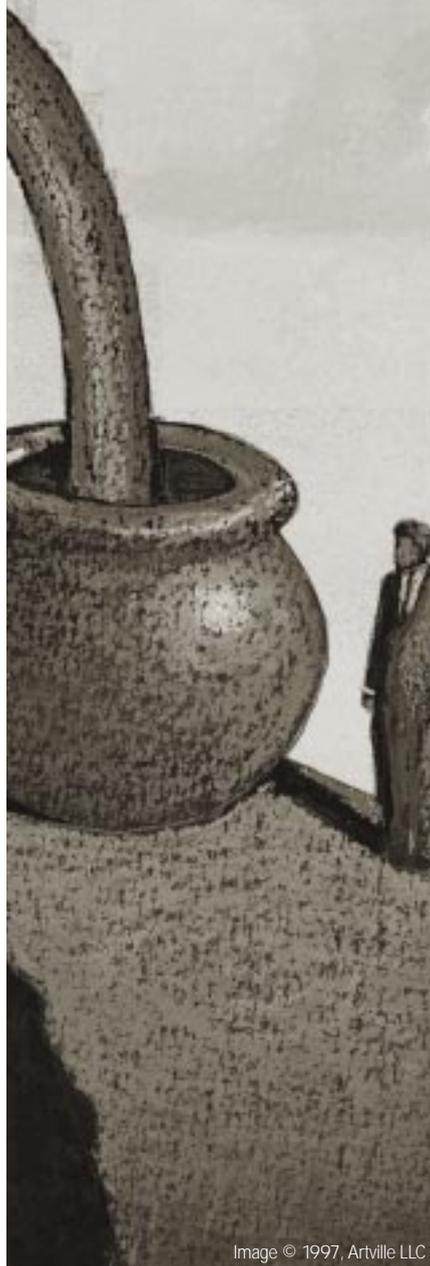


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from published literature; seven tapped internal Service/agency experience and sources; four employed external Service/agency sources (such as experts from other government agencies or commercial consultants); and three obtained formal training from government or private instructors.²

This large reliance on self-education strongly suggests a need remains for additional training and sharing of information on commercial practices within the Military Services studied. For instance, one program representative wryly noted that personnel routinely learned from the “school of hard knocks.”

Nonetheless, those program representatives citing external sources as the most beneficial information resource shared an interesting insight. All four of those representatives specifically acknowledged industry as the single most valuable external resource. Their programs all included successful IPTs, with active industry involvement. The IPT process enabled the joint evaluation of commercial practices with the beneficial insight of industry’s experience and perspective.

Conclusion – Dilemma or Opportunity?

Given these findings, is Cynthia’s mandate for commercial practices really a dilemma, or is it an opportunity? As with anything new, adopting commercial practices has its risks as well as its rewards. As the experiences of Cynthia’s peers in our defense program sample illustrate, the rewards of commercial practices can indeed be substantial. By learning from the commercial-practices pioneers in defense acquisition and practicing sensible management, Cynthia’s leap to commercial practices can benefit her agency, her warfighter customer, and her ultimate customer – the U.S. taxpayer.

ENDNOTES

1. More information about LAI may be found at <http://www.mit.edu/lean/> or access the entire study at <http://comms2.rdc.uscg.mil/commercial-practices.pdf> on the World Wide Web.
2. Some programs reported more than one information source.