



# Aerospace & Defense Industry: 8 Headaches Keeping Your PMO Awake at Night

Guidebook

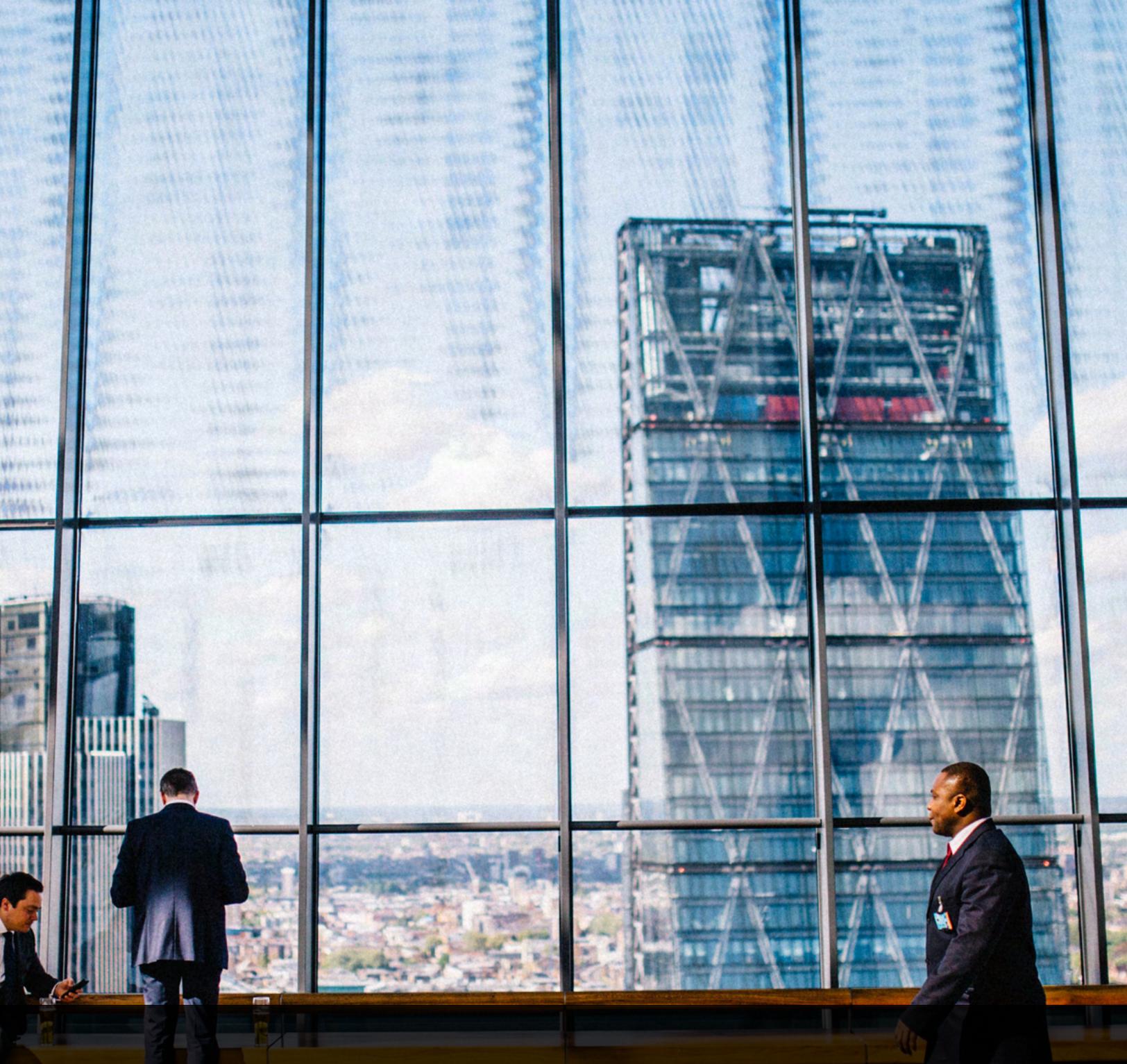


The Power of Predictability

# Executive Summary

This guidebook will examine the eight problems that are crippling the effectiveness of program management initiatives in the defense sector. These include estimating; managing change; product lifecycle; data management; platform integration; siloed structures; workforce planning and resource management; and managing materials. The guidebook will also explain five solutions to addressing these issues with software, among them gaining from “a single source of truth”, robotic process automation, and strategic portfolio management.

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Introduction: “Are we doing what we said we would do?”

The threat landscape for the US government is rapidly changing. This evolution requires the defense industrial base to increase the velocity with which they deliver products, while adhering to the same quality mandates. The heightened sense of urgency surrounding government contracts increases the importance of establishing and maintaining product, program and organizational trust across the acquisition and execution teams (within the government, contractor and auditing agencies).

“Are we doing what we said we would do?”

The foundational need to establish trust across products, programs and organizations in the government contracting (GovCon) sector, translates into a need for continuous improvement in several key focus areas:

- bid and estimating
- change management
- data integrity and continuity
- workforce planning and retention
- training and knowledge stewardship
- product and program lifecycle management
- material management
- and organizational silos



CHAPTER 1

# Integrated Program Management Pain Points

## 1. How Do We Get More Accurate at Estimating?

The central tenet of the acquisition team is to establish a contract for the desired contact at the lowest cost. The push within Acquisition to be lean can often result in the submission of a bid based upon estimates that are truly best-case scenario on your best day. It goes without saying that we don't live in a world that's best-case scenario on our best day, at least not every day.

GovCon companies need to put forth a competitive bid, but the bid must be attainable by the execution team. Submitting a low bid that is unachievable is a disservice to both the GovCon company and government customer, which results in degraded trust. Additionally, the auditing and oversight agencies – like Defense Contract Audit Agency (DCAA) and the Defense Contract

Management Agency (DCMA) – who are monitoring and auditing program performance, will scrutinize the lack of cost and schedule control and any deviation from contractually established values.

In addition to the soft cost of degraded trust, deviation from the values established in the bid can have hard costs. As you know, within contracts, there are specific criteria which are locked down. If you're a prime government contractor, you will be required to deliver on a host of compliance criteria. For instance, a DCMA compliance issue could result in a 5% payment withhold, per finding, by the government customer.

Trust is the foundation of any team. If government customers (US Navy, US Army, etc.) don't believe that what's been bid can be accomplished, the team dynamics have been undermined.



## 2. How Do You Manage Change Effectively?

Margins are typically very low on construction contracts awarded within the GovCon industry. Government contracts strive to be competitive enough to win the bid, but not in a way that will compromise their ability to be solvent.

One area that may increase program profitability is by the effective estimation, management and incorporation of customer-driven change. Say the US Navy or the US Army request a change, they may want an additional missile defense or a more advanced technology module to be implemented within the ship or armed vehicle being produced for them. By clearly identifying up front the cost that will be incurred through Design, Supply Chain, Scheduling, Planning, Manufacturing and Quality phases, in areas such as labor, material, schedule disruption, rework and burden, the GovCon entity establishes a basis for profitable work.

Translating this potential into revenue requires the detailed capture and tracking of all the actual costs accrued. As you have Actuals, you

can only charge back what has been captured in accordance with the negotiated contract modification. The potential for profit on change is generally higher because the margins are not as small as the initial award. If the change implementations are managed well throughout the organization, with the desired point of incorporation, GovCon organizations can greatly benefit.

However, when a change happens outside the planned build sequence the cost of the modification increases significantly. For example, if a change increases the diameter of an access point in a module, and the desired incorporation is erection, delaying the installation until the outfitting stage of construction would result in significant cost from material scrap, rework, retesting, and quite possibly schedule disruption.

Effective modification management requires effective systems (people, processes and technology) be in place to estimate, manage, track, and report effort throughout the business and across the change lifecycle.



### 3. Are You on Top of the Product Lifecycle?

The government is interested in their products from bid through integrated logistics support (ILS) and delivery. They are interested in seeing: how is this product developed? What are the items in the product? What kind of key components are in the design, on order, and installed? What are their serial numbers? What are the parts lists that go with them? What are the replacement kits available for each system component? How often is it maintained? How has that maintenance been progressing while in the warehouse and after installation?

The government customer wants to insure the quality of the components delivered with their product. Did you replace out the filters after you did light-off testing to make sure that they're new going out there? Was there some sort of change where you have a different actuator on the pump than originally shipped? There will be myriad details they will want to know about. Ultimately, the government wants to confirm that their customer has been a good steward of their product throughout its lifecycle.

**Exhibit 1 - Program Timelines for Defense Programs Have Grown Significantly**

Program	Entry into service	Planned development (years)	Actual development (years)	
F-105	1958	4	8	Cold War Era
C-141	1965	1	1	
C-5	1970	1	4	
C-130H	1974	1	3	
Spruance-class destroyer	1975	2	3	
Nimitz-class carrier	1975	4	7	
A-10	1977	3	5	
F-16	1980	5	6	Post-Cold War Era
F-18	1983	4	5	
Arleigh Burke destroyer	1991	6	11	
C-17	1995	10	15	
F-22	2005	5	19	
A400	2013	2	11	
F-35	2015	15	20	
DDG 1000	2020	11	24	
Ford-class carrier	2021	11	17	

Source: BCG analysis.

Note: Actual development time measured from the initial R&D contract.

**Figure 1: Program Timelines for Defense Programs Have Grown Significantly** (Source: [Boston Consulting Group](#))

#### **4. How Do You Learn to Trust the Data, Not Your Gut?**

Historically, development of a proper bid or estimate relied on experienced people in an organization. Subject matter experts with the knowledge to establish your base, people who knew the right questions to ask, shaped and drove the bid effort to completion. In recent years that expertise is not as easily accessible, due to retirement and the competitiveness of the job market.

The shift in the available knowledge base requires a shift to reliance on data to inform the process. Essentially, GovCon companies need to digitize bid and estimating know-how. By capturing the data related to developing, submitting and winning/losing bids an organization establishes a digital corporate memory. Now, when key people leave the building, an organization retains the core data that informed their decisions. Enabling the continuation of informed decision-making based on a digitized knowledge base.

Reliance on data-driven decisions is essential. It's not that a gut feeling can't be helpful, but it's only as good as the gut.

#### **5. How Does the Lack of Platform Integration Impact You?**

The cost and complexity of integrating data stored in separate (modular) systems has long been a problem in the defense contracting industry. The legacy approach of most technology providers has been to offer best-of-breed software on a modular basis, i.e. cost management is done on one system; schedule management on a different system; accounting and financials on a different platform; risk management on another system, and so on. GovCon corporations spend significant money, resources and time integrating all these platforms together, making sure data moves from one platform to another while retaining through line integrity for decision making and reporting.

If poorly architected or managed, the marriage of data from disparate systems results in data inconsistency. The quality of decisions made on misaligned data can be undermined. Additionally, data reported out to government customers depicts an inaccurate representation or reality. The resulting impact on reporting can be catastrophic for corporate reputation, and the bottom line. Don't be hampered by disconnected systems.

## 6. Is Your Organization Hindered by Silos?

Segregation of processes, data and system architecture, based on an organizational structure, hinder business process value. You might have the same kind of project with the same kind of requirements across two of your different business units, but they might have different approaches when it comes to execution.

Let's say one of your divisions is acquired by a company. Obviously, business units with different product capabilities operate differently. But situations where operating units produce the same or similar products can have vastly disparate practice. A division might have totally separate systems, architecture and processes which disconnects and silos it from the rest of the organization. This entity does not benefit from the unification of data and information.

Implementing optimized systems and processes across an organization enables business units to leverage each other's digitized experiences for informed and consistent decision making and reporting.

## 7. How Could Your Company Benefit from Accurate Workforce Planning and Resource Management?

GovCon sector organizations need to have the workforce planning capability to be able to say, "I have all this demand coming in. Do I have the right staff to meet that demand? Do I need to staff up or staff down?"

For example, organizations need to be able to differentiate between the demand for one kind of engineer versus the demand for a different kind of engineer. Resource managers need to optimize their department planning, based on actual project and internal demand. They then need to work with human resources to vet and acquire resources to ensure the supply meets the demand levels.

The early and accurate definition of resource demand prepares organizations to staff properly, supporting project tasking requirements.



## **8. How Could Your Organization Profit from Effective Material Management?**

Effective management of material, on the initial contract and for any subsequent contract modifications, requires clear part definition, readily available supply, timely installation, appropriate quality assurance, good stewardship and suitable cross department communication. The cost of materials increases overall product cost (in labor and material) substantially if procured or delivered later than desired.

The complexity of this problem has complicated the use of multiple disparate systems for activities such as engineering design, bill of materials definition, project scheduling and system testing, making the capture of all related costs difficult. Integrating data across systems within an organization enables the accurate assessment of the criticality of, and capture of, the full cost for project materials. Leveraging integrated systems to communicate material requirements and availability across your organization facilitates program performance success.



CHAPTER 2

# How Can Software Fix These Problems?

## 1. Get Software to Adapt to Your Business Processes (Not the Other Way Around)

Instead of changing the way you operate to suit your IT provider – like, say, with a SAP implementation – find a software partner that can adapt to suit your needs, which is innovating faster. Capitalize from its no/low code capabilities. Don't be hamstrung. Get your software solution to bend to your business processes. Optimize your processes, your data architecture, based on how you do business. Get a platform that's sufficiently flexible to adjust to your business model.

## 2. Enjoy a Single Source of Truth

Consolidate your business capabilities (your risks, issues and opportunities as well as your change management) into a single platform. You don't want to persist in jumping between, say, 15 tools for your value stream management. With a single, integrated platform, you can benefit from seamlessly connecting schedules, forecasting, resources and financial controls.

## 3. Profit from Robotic Process Automation (RPA)

Automate simulation and calculation of forward pricing rate proposals (FPRPs) with direct labor bid rates (DLBRs) and associated integration with dependent systems.

## 4. Sync Your Supply Chain

Track and monitor all the data that your parts, materials and assets generate as they move through your supply chain.

In an effort to improve supply chain resilience and protect against material shortages, President Joseph R. Biden Jr. signed [Executive Order \(E.O.\) 14017, America's Supply Chains](#). In response to the EO, this report provides Department of Defense's assessment of defense critical supply chains in order to improve their capacity to defend the United States of America.

## 5. Smart Strategic Portfolio Management (SPM)

Select the right projects. Strategically align and manage portfolios to a set of internally defined metrics and objectives: emergence of strategic portfolio management aligned to operational executable projects.





## Author Bio

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She has spent over 15 years working in the defense sector in a range of roles, including senior corporate applications manager and as both a business and systems analyst. She is a certified scrum master and a PMP with the Project Management Institute. She is based in Wallace, Michigan.

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