



Program Affordability Management Center of Excellence

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Since programs compete for limited dollars and resources and are challenged to “do more with less,” defense & civilian program managers and industry contractors must embrace a “true cost” approach to succeed in today’s business climate.

Many government programs—whether at the system level, the system-of-systems level, or the agency-mission level—get started without the budget or staffing they truly need to succeed. Program managers are asked to do the impossible—be successful without adequate resources.

As the program matures, the wise program manager develops improved methods and processes to achieve success. These methods and processes have to win over all the stakeholders in the program—including the program office personnel performing the functions, the various oversight organizations, the contractors involved with the program, and the customer(s) of the end product. If the customers or oversight organizations are not convinced that the program will succeed, they will either provide excessive oversight or cut funding altogether. If contractors think that the program can't be successful, they will choose to not participate. Clearly, it is important for program managers to get started correctly with solid methods and processes.

For almost 30 years, we have watched program managers try different approaches. Some have succeeded. Some have failed. The approaches depend a lot upon the type of program and the personality and strengths of the program manager. In all cases, though, the program manager is faced with continual budget, financial, and performance decisions. These “numbers” decisions are less dependent upon the program manager's personality and strengths than they are upon tenacity and process. The successful programs have used an integrated, “true cost” approach.

This paper outlines how to implement this integrated “true cost” approach. We call it Program Affordability Management™. The basic premise of this paper is that every program should have a *Program Affordability Management Center of Excellence (CoE)* established. The size of the program doesn't matter. Smaller programs will use fewer people to implement the CoE concept. The practices that make programs successful are embodied in this CoE approach.

Program Managers should embrace this approach. It is built from the experience of many programs throughout the last 30 years. These programs included weapons systems, networks, construction projects, and many others. By implementing a CoE, program managers know they are covering all requirements necessary to ensure that their programs will be financially stable and, in the end, affordable to the taxpayer.

Oversight agencies and committees should use this white paper as a guide to ensure that program managers are tracking, monitoring, and projecting the correct information to ensure their program's success. This approach can be applied at any stage of the program, but preferably in its earliest stages.

Contractors should use a similar approach within their own proprietary processes. This not only ensures they will stay on budget, but helps them build a profitability strategy that will ensure their success and growth.

In the following sections, this paper discusses a complete approach to implementing a Program Affordability Management CoE:

- A description of Program Affordability Management
- Essential elements of a Program Affordability Management CoE
- Keys to selecting a contractor to assist in implementing the CoE
- Key Performance Indicators to use within the CoE

If program offices embrace the Program Affordability Management Center of Excellence approach, they will increase their probability of success. Implementing this approach will not ensure success, but it will certainly decrease the probability of failure significantly. If implemented at the very beginning of the program, this approach will ensure that all key stakeholders know and understand the financial risks associated with any given program.

Program Affordability Management

Program Affordability Management™ is the set of supervised and coordinated activities that determine whether or not an organization will be able to bear the cost of a program over the course of its life.

Today's program managers are under more scrutiny than ever to deliver on plan, on time, and on budget. Projects compete for limited dollars and resources. There is constant pressure to “do more with less.” And a steady stream of high profile failures in the news only increases the pressure on current projects to perform. The Program Affordability Management approach integrates three key elements—the power of pre-



dictive estimating, the rigor of Earned Value Management, and the continuous improvement of persistent knowledge capture into a cohesive, iterative view across a project's life span. These three elements are not individual parts; they build on each other to enhance success at every decision gateway of a project. Program Affordability Management is an iterative process that begins with a realistic baseline updated with current status and scope and then compared against initial plans and estimates to determine variance. The ability to continually analyze cost and schedule ensures that projects stay on track—and that the impact of change is clearly identified, understood, and communicated. By embracing Program Affordability Management, initial contracts can be awarded with full disclosure, design changes can be assessed with complete understanding, and budget requests can be made painlessly. The bottom line is that a disciplined Program Affordability Management approach, results in success for the customer.

WHY PROGRAM AFFORDABILITY MANAGEMENT?

Affordability is the biggest issue facing agencies, organizations, and contractors today. An abundance of competing programs and overly optimistic program advocates provide the backdrop of clear evidence of high-profile failures (inaccurate estimates, cost overruns, major project delays, project cancellations). Why?

Studies have shown that most projects fail not because of technology, but because there is a failure in project cost management—a failure to meet expectations (planning); a failure to manage and understand risk and requirements; and a failure to effectively negotiate (both externally with the customer and internally with the development team and upper-level management). As President Bush stated in his 2002 President's Management Agenda:

“Government likes to begin things—to declare grand new programs and causes. But good beginnings are not the measure of success. What matters in the end is completion. Performance. Results. Not just making promises but making good on promises.”

Although there may be clear program management guidelines, programs fail when they do not integrate the cost engineering discipline with other program management activities. The Consequences—Wasted resources and capital. Increased oversight. Challenges to credibility, competence, and funding. The Solution—the Program Affordability

Management approach ensures True Program Success from the procuring and maintaining of funding and the managing of risks to the eliminating of surprise cost overruns—enhancing program success.

KEY STEPS TO ACHIEVING PROGRAM AFFORDABILITY MANAGEMENT

1. Assemble the right team
2. Use a credible life-cycle cost model
3. Get the estimate right the first time
4. Create, document, train, and reuse knowledge, metrics, and processes
5. Integrate cost, project control, and knowledge management; and ensure that the program is incentivized on forward-looking measures
6. Persist! Repeat steps 1 through 5 throughout the program life cycle

Essential Elements of a Program Affordability Management Center of Excellence (CoE)

The building blocks of a Program Affordability Management CoE follow six essential steps to successful program management.

Step 1: Assemble the right team

A CoE's success begins with its most critical attribute—a trained and motivated professional workforce with the right skill mix, sized commensurately with program value, complexity, and priority. Essential to the team is the right leadership to create the CoE's goals and objectives and to integrate the activities of technical, statistical, and financial disciplines. Although such a capability cannot be built overnight, a strategy that leverages the consulting capabilities of PRICE Systems—as an in-house capability is developed—provides for both short-term and long-term True Program Success.

Step 2: Use a credible life-cycle cost model

The value of standardized cost estimating models and tools—in improving program performance through more—credible estimate development, defensible cost analysis, and greater accuracy overall—cannot be overstated. Standardization brings greater accuracy and faster turnaround in developing initial and subsequent cost estimates. Evaluations, negotiations, and agreements are achieved in minimum time. Decisions improve because embedded historical data provides a “reality check” on cost estimates. For a CoE to achieve these goals, PRICE Systems offers TruePlanning® tools, defined in the next section, for program affordability management. With these tools, understanding and communication is enhanced through a common language among the team—from management throughout the supply chain and the stakeholders in the program. Focus and clarity of purpose are attained as common performance criteria guide management actions. Confidence is achieved by lessening the fear of mistrust and inaccuracy. Credibility within and outside the CoE is gained by providing a reasonable basis for being believed. The hallmark of a successful CoE is to produce credible products in a timely manner. The tools of a CoE are second only to having the right team as a key to success.

Step 3: Get the estimate right the first time

Both program underestimates and overestimates lead to disaster for both the program and the CoE. Underestimates generate under-resourcing, panicked decisions, and unrealistic expectations. Overestimates result in underutilized resources, excess capacity, and uncompetitive pricing. Both instances result in a lack of confidence in the CoE. The CoE's challenge to produce credible cost estimates can be enhanced and overcome with a toolkit containing state-of-the-art tools of the trade. PRICE Systems' TruePlanning® tools enable True Program Success and are backed by the power of PRICE Systems cost research. Some of the tools are parametric cost estimating models, methods, and techniques based on proven, best cost estimating practices with which to examine alternative courses of action at the beginning and throughout the program; a translator of estimates to budgeting and programming views to secure necessary funding; and planning tools for effective acquisition, timely contract execution, and efficient purchasing procedures. Each of these tools is essential for the CoE to produce credible and timely products and to communicate results to program stakeholders and decision-makers throughout the process.

Step 4: Create, document, train, and reuse knowledge, metrics, and processes

The processes used by the CoE must be repeatable to ensure quality, credibility, and timeliness in delivery of decision quality information. Appropriate oversight must be established to correct deficiencies, measure success, and create an environment of trust and confidence. All stakeholders and decision-makers involved in the acquisition process must participate in and view the CoE processes as necessary and credible. To that end, the processes should be documented—transparent for all to see and critique—and procedures should be outlined so that everyone in the CoE is working from the same game plan. Metrics should be put in place as a framework for stakeholders and decision-makers to assess the value added by the CoE and their products. A cost review board, consisting of all stakeholders in the acquisition decision, should be chartered to review and approve key CoE products. Databases provide the fuel for the analytical engine of the CoE that enable the translation of historical data to information and knowledge, providing the basis for cost projections. A continuous, robust cost research program (funded at about 5% of operating budget) is essential to capture and reuse knowledge databases with which to develop new cost estimating methods and relationships to be applied to future programs.

Step 5: Integrate cost, project control, and knowledge management; and ensure that program is incentivized on forward-looking measures

By integrating cost estimating models with earned value management program controls, the Program Affordability Management CoE enables “forward looking” program performance that is based on measures of cost, schedule, and effectiveness. Knowledge management must become an automatic and actionable process of translating data into knowledge and providing that knowledge to the stakeholders and deci-

sion-makers of the program. The Program Affordability Management CoE must provide predictive, integrated analyses of the project to enable real-time cost performance management through a dashboard reporting system. Project control is where the integration of the technical, statistical, and financial disciplines happens, where timely and credible knowledge provides a comprehensive view of the health and well being of the program for decision-making and project management. Just as the dashboard of an automobile provides real-time feedback about the operation of the vehicle, project control provides information that enables the program manager to guide the program through a maze of scenarios and obstacles. The Program Affordability Management CoE must provide program managers with a feel for the program and how it is progressing on a near-real-time basis so as to be proactive in modifying operations with confidence to achieve success. Finally—and significantly—frequent interfaces with the customer are necessary to determine the degree of Program Affordability Management CoE mission success and to understand current and future requirements.

Step 6: Persist! Repeat steps 1 through 5 throughout the program life cycle

It is important to understand that these steps must be repeated. The program is not static; the status quo has a short life. Conducting these processes for the milestone review and then putting the analysis on the shelf for the next milestone review is a formula for disaster. Program Affordability Management is an evolving, living process that requires continuous analysis.

In summary, a Program Affordability Management Center of Excellence must be capable of meeting the affordability challenge, the biggest barrier to program mission success. To accomplish the Program Affordability Management mission, the Program Affordability Management CoE must provide credible and timely program oversight from the outset and must emphasize the affordability discipline. The Program Affordability Management CoE must integrate multidisciplinary analysis activities to develop a coherent, comprehensive assessment of the program being managed. The Program Affordability Management CoE must achieve each of the six steps to Program Affordability Management to be successful.

Keys to Selecting a Contractor to assist in Program Affordability Management CoE

Many program offices must rely on contractor support in order to be successful. This means selecting a contractor who not only understands and appreciates the Program Affordability Management approach, but also has a track record of success. Here are a few elements to look for:

- Strong qualifications in a variety of program office settings
- Methodologies that have been proven to be tried-and-true with both government program offices and contractors
- Senior expertise that understands the oversight processes
- Junior capability that brings new and innovative approaches to the methods
- A balance of expertise to include cost estimating, earned value management, project control, and knowledge management practices
- Domain expertise in the technical areas as they apply to Program Affordability Management

SUGGESTED TASKING

There are specific tasks that will help ensure success. These are not all-encompassing. They are offered here simply as a roadmap to success.

Task 1: Strategic Leadership Mapping

In the initial task, a senior individual with significant experience participates in program office activities. It doesn't matter if the program office is new or established. If the senior individual does not have a Program Affordability Management CoE in place, then this is the initial step. This senior individual can map the key milestones and the Program Affordability Management activities that are necessary to meet those milestones. The milestones are not always significant acquisition milestones. They may be hiring milestones when a core team has to be in place to reach a significant acquisition milestone. The outcome of this task is a complete Program Affordability Management CoE implementation strategy that will be used for the entire program. The individual that completes this task may or may not become the Program Affordability Management CoE project lead for the program.

Task 2: Develop a High-Quality Baseline

All programs will develop a baseline cost at some level. The key here is to develop a high-quality baseline cost. This has to be done using sophisticated tools with as much historical knowledge applied as possible. The senior leader from *Task 1* will be able to communicate to the program office what type of cost estimate is needed to gain the support of the end-item customer and achieve the required oversight approvals. Also, a quality estimate is needed to ensure that contractors do not “buy in” to the program through an artificially low bid.

Task 3: Bid Support

In this task, a contractor will provide a Request For Proposal document that will enable the program office to compare bids successfully. Many program offices use a cost input sheet developed from tried-and-true models. This is a “best practice” that is used for understanding the bidder's cost. When proposals are submitted, the inputs are run through the original “high-quality” model and comparisons can be made. When necessary, adjustments can be made for Best and Final Offers (BAFO). Even after a contractor is selected, this task can be expanded to include Engineering Change Proposal (ECP) evaluations. If a contractor knows that the program office has an independent team assessing costs, the contractor is usually more open and willing to share their cost information—including risks, assumptions, and methods—and it places greater emphasis on the quality of cost information provided.

Task 4: Continual Assessment

The Program Affordability Management CoE is not a one-time event. It requires an ongoing relationship with the contractor, the program office, the end-item customer, and the oversight groups once the program is underway. This requires a proactive assessment of the contractor financials, comparison with the budget of the program office, and reporting against the risks identified to the oversight agencies. A Program Affordability Management contractor who successfully performs Tasks 1-3 can easily perform this effort.

Task 5: Dashboard Reporting

Many program offices have dashboards that enable them to continually assess the status of the program. This task feeds that dashboard system with fully integrated, true-cost program and performance information reporting. Top-quality Program Affordability Management contractors have dashboard reports that can be used as templates to feed many program office needs.

These tasks are only a sampling of the tasks that a top-quality Program Affordability Management CoE contractor will perform. They may need to be modified slightly for each program, but overall the descriptions are not program unique. The actual amount of work involved in each task will vary depending on the size of the program.

Key Performance Indicators for a Successful CoE

No matter the level of program, successful Program Managers will always implement some form of Program Affordability Management. It may be well-structured or inherent within existing practices. Program Affordability Management methodologies are very important to capture cost drivers, define risks early in the procurement, develop reasonable and measurable metrics, and help the program office keep the program on track. The following table shows a summary of Key Performance Indicators that a program office can use to measure Program Affordability Management performance.

Standard	Cost Estimating	Knowledge Capture	Program Control	Reporting
Minimally Acceptable 	Initial baseline model developed and submitted with budget (OMB Exhibit 300)	Totally rely on contractors to develop history and build repository.	Work Breakdown Schedule and program milestones defined. Baseline and change control responsibility left with contractor	Periodic CPR updates from contractors to management. Cursory analysis.
Good Affordability Management 	Functional and Performance-based Parametric Model of initial baseline. Formal basis of estimate for program established.	Capture and correlate similar program and contractor's data for full-cost reference points	EVM applied to contractors in accordance with ANSI/EIA 748 criteria	Consistent EVM reporting, variance analysis, EAC updates for ongoing reports to management
Best Affordability Management Practices 	Federal Enterprise Architecture and agency mission integrated, Performance-based parametric life cycle model updated throughout program	Continuous EVM metric capture and normalization for ongoing planning reference	Portfolio-wide EVM applied to full program and evaluated continually	Comprehensive portfolio performance "roll-up / drill-down dashboard" visibility

Program Affordability Management methodologies can be started at any point in the acquisition process. It is always best to start them early, but program managers have had very good results implementing them even after contract award. It is important to implement these affordability methodologies using seasoned professionals who understand the challenges with the specific program and the acquisition process overall. These methodologies are repeatable, so that one program office can leverage the experiences of others. The challenges are great, but the tools and methods are available to make the challenges less risky and the potential for success much higher.

PRICE Systems offers a complete Program Affordability Management™ solution with a combination of world-class technology and seasoned consultants. Cost modeling and knowledge management tools enable users to capture critical data and build quality cost estimates. Consultants bring implementation experience and best practices in specific program control methods including Earned Value Management. The combination of technology, consulting, and compliance enables an agency or office to implement a complete Program Affordability Management solution maximizing your return on investment.

If you would like further information on how PRICE Systems can assist you in implementing a Program Affordability Management solution, please call 1-800-43-PRICE (USA, Canada, Asia-Pacific) or +44-1256-760012 (Europe).

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About PRICE Systems

PRICE Systems enables government agencies, defense programs and commercial organizations to successfully select, control and deliver large-scale, complex and high-visibility projects. With offices in the United States, Europe and Asia-Pacific, PRICE serves more than 250 customer organizations worldwide. More than 10,000 project professionals have been trained in the company's cost estimating and analysis methodologies.

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