Presented by

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Headlines!

ACCORDING TO THE OFFICE OF ELECTRONIC GOVERNMENT AND INFORMATION TECHNOLOGY (OEGIT), only 25% of the 1,400 projects reviewed by the Office of Management and Budget in 2002 achieved the office's goals. More than $21 billion worth of the $59.3 billion IT projects in the president's 2004 budget are dubbed "at risk" because of inadequate project planning, as outlined in a recent Government Enterprise article.

As a result, the U.S. Administration launched a series of initiatives and legislation designed to place a solid business cost-benefit model on new information technology programs. The OEGIT has made it clear that agencies must now justify projects with Business Case Analyses (BCA) and provide project visibility using Earned Value Management (EVM).

"Of the 250 projects analyzed, about 25 were deemed successful in that they achieved their schedule, cost, and quality objectives. About 50 had delays or overruns below 35 percent, while about 175 experienced major delays and overruns, or were terminated without completion."

Capers Jones,
Software Project Management Practices: Failure Versus Success,
Crosstalk Vol. 17 No. 10,
October 2004

Lockheed Martin Faces $100 Million Cost Overrun (Source : Aviation Week & Space Technology)

NEW YORK-- In Joint Strike Fighter Project, Aviation Week Reports Lockheed Martin is facing cost overruns of at least $100 million in its program to build a Joint Strike Fighter demonstrator aircraft, Aviation Week & Space Technology reports in Monday's edition and on its Web site. The report in Aviation Week follows one in last week's edition about Boeing's problems in the same program. Boeing has redesigned its Joint Strike Fighter aircraft to get costs down and performance up. Thus both contractors are facing problems in the scramble to be selected to build the next generation fighter for the U.S. Air Force, Navy and Marine Corps and the military of the United Kingdom. With sales to other nations, the total production run could reach 6,000 aircraft.
The Lockheed Martin cost overruns include $30 million in accounting errors, $30 million in cost growth for the lift fan and another $30-40 million in under-estimated costs associated with new technology being introduced on the airplane.

The Affordability Challenge

Affordability is the biggest issue facing agencies, organizations and contractors today. Clear evidence is seen in high profile failures (inaccurate estimates, cost overruns, major project delays, project cancellations)

Why?

Although there are clear program management guidelines, programs do not focus on the cost engineering discipline and cost engineering processes and technologies stove-piped

- **The Consequences**

  Government oversight has increased.

  Credibility, competence, and funding are challenged.

- **The Solution** Program Affordability Management

  How do you get the funding you need, manage risks and eliminate surprise cost overruns?

  There are six key steps to successful Program Affordability Management

Anthony A. DeMarco

- President, Managing Member and co-Founder of PRICE Systems, L.L.C.
- 23 years experience in project cost engineering and program management analysis
- Award winning creator of cost models and management methods
- Patent holder for cost estimating techniques
- Member of the NASA International Space Station Management and Cost Estimating task force (Young task force)
- Board of Director of the National Defense Industrial Association Delaware Valley Chapter

Definitions

Program

A system of services, opportunities, or projects, usually designed to meet a social need

Affordability

ability to be able to bear the cost of

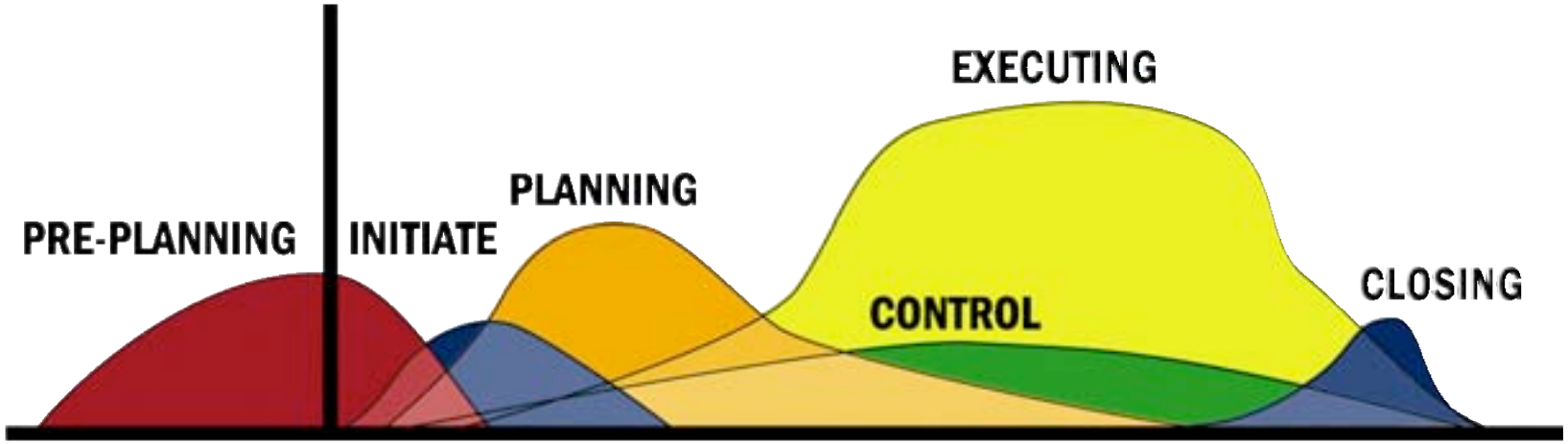
Management

the conducting or supervising of something

Program Affordability Management

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

Total Program Life Cycle



Program Affordability Management

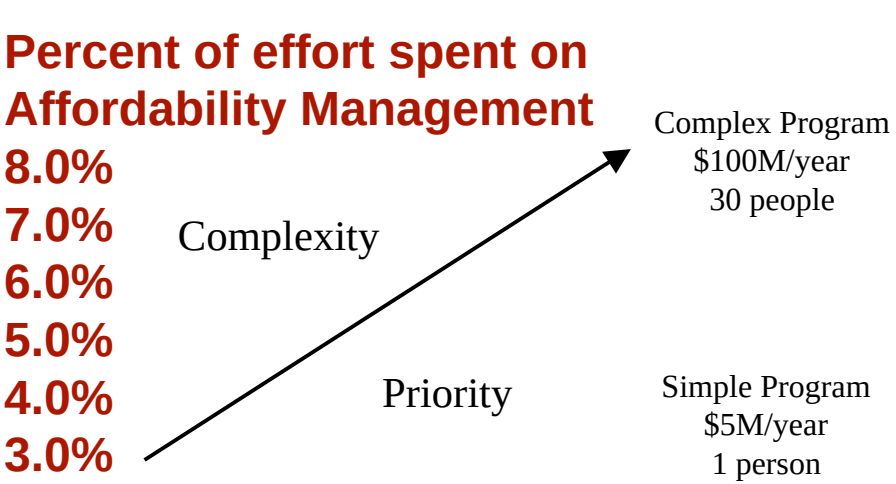
There are 6 key steps to Program Affordability Management, fortifying the practice with the expertise, tools and best practices and discipline to meet specific oversight requirements and build credibility, competence and success.

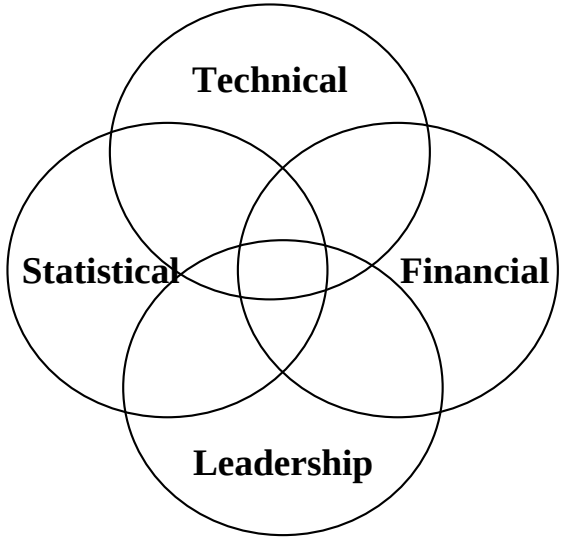
Program Affordability Management integrates traditionally "stove-piped" activities, such as :

- **Engineering/Design**
- **Estimating/Cost Management**
- **Earned Value Management**
- **Knowledge Management**

into a cohesive, iterative, lifespan view.

Step 1 Assemble the right team





You must size the affordability management effort commensurate with program size, complexity, and priority

You must ensure that you have the right skill mix for the program

Step 2 Use a credible life cycle cost model

Decision Criterion = Effectiveness / LCC

Simple cost model (< 10,000 function points)

LCC = Design + Build + Support
= ($200 x FP) + ($400 x FP) + ($50 x FP x Yrs)

where LCC = life cycle cost, and
FP = function point count

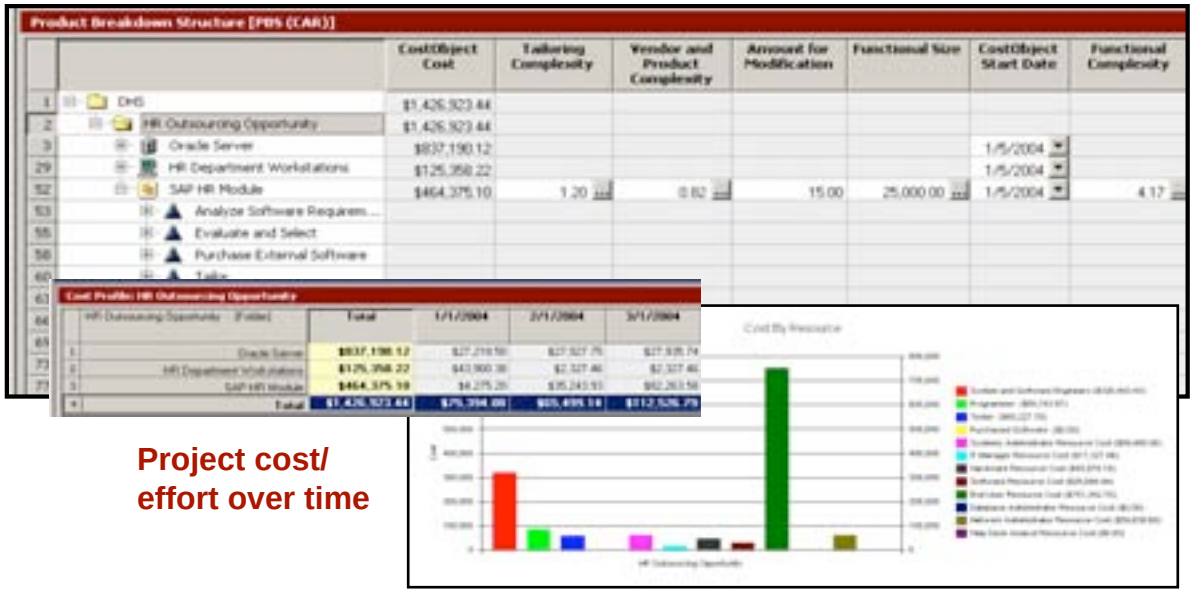
- Understanding – common language among the team from Management throughout the supply chain
- Focus – common performance criteria helps guide management actions – Performance Based Contracts
- Speed – rapidly evaluate, negotiate and agree on changes
- Confidence – relieve fear of mistrust and inaccuracy

Credible: offering reasonable grounds for being believed

Step 2 Use a credible life cycle cost model

Decision Criterion = Effectiveness / LCC

Robust Cost Models (>10,000 function points)



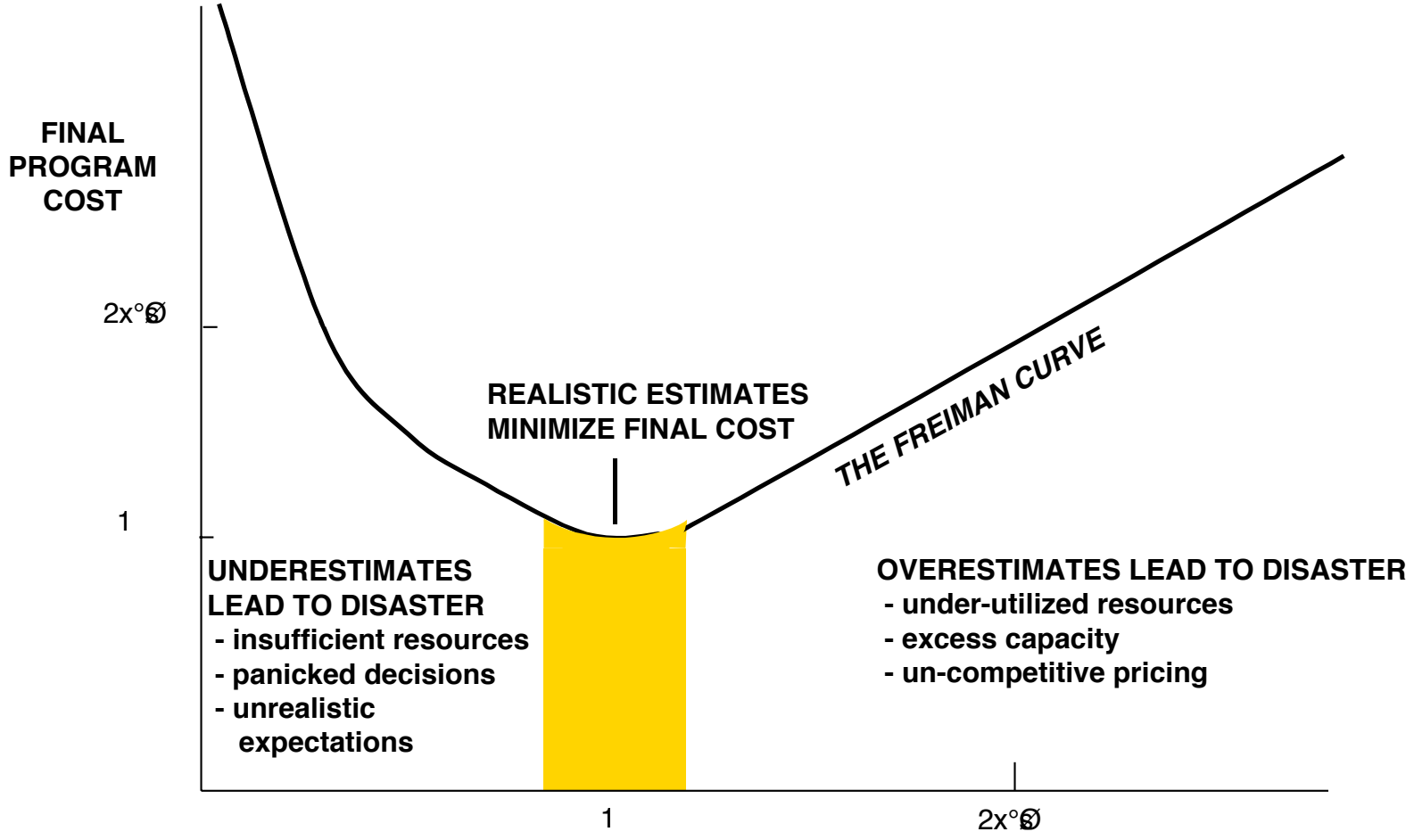
Project cost/ effort over time

Project Cost by Resource

- Understanding – common language among the team from Management throughout the supply chain
- Focus – common performance criteria helps guide management actions – Performance Based Contracts
- Speed – rapidly evaluate, negotiate and agree on changes
- Confidence – relieve fear of mistrust and inaccuracy

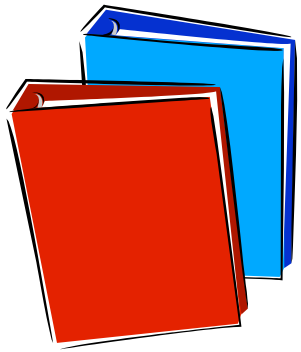
…there are commercially available models for ERP and COTS implementations, Data Center Operations, custom hardware and software development and more.

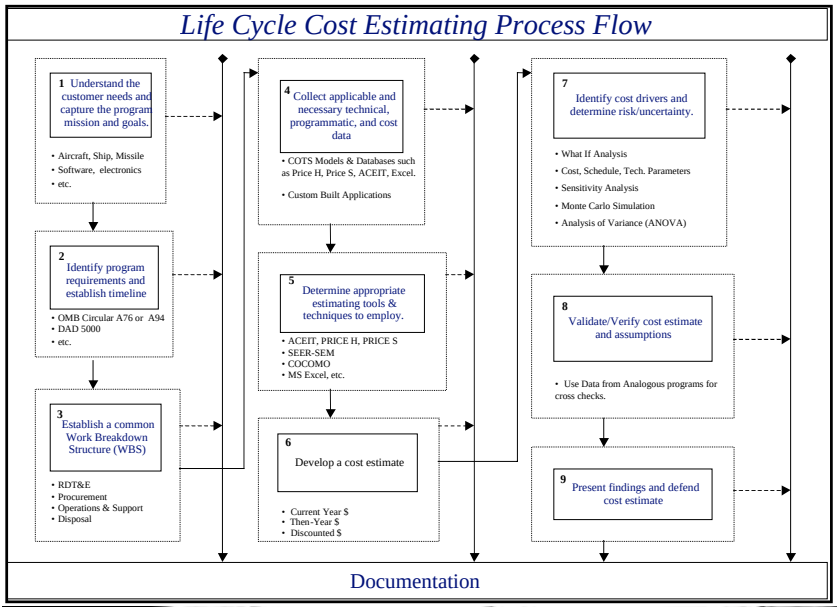
Step 3 Get the estimate right the first time



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

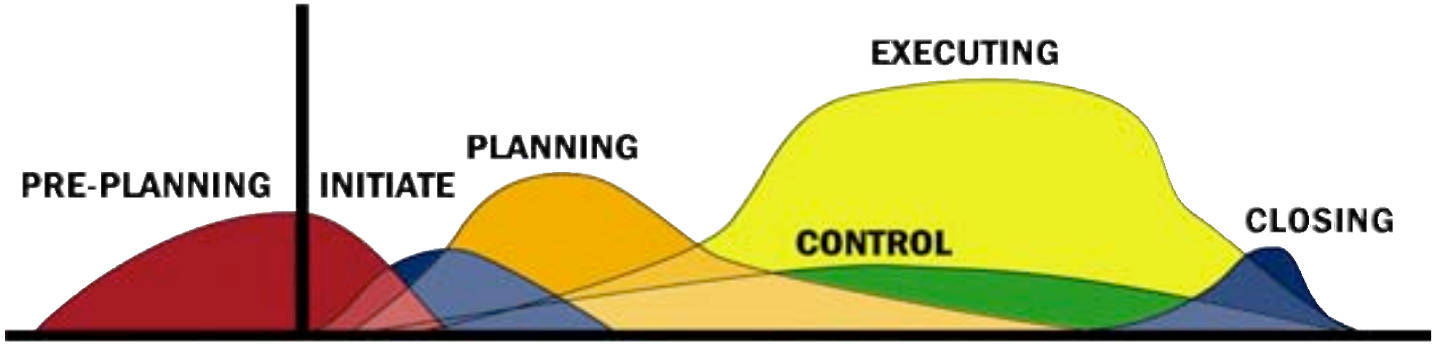
1. ***Program Affordability Management Manual***
2. ***Cost Estimating Guide***
3. ***Earned Value Management System Guide***
4. ***Risk Management Guide***
5. ***Design to Cost Guide***





Step 5

Integrate cost, project control and knowledge management and ensure program is incentivized on forward looking measures



As is

Cost Estimating	Cost Estimating	Cost Estimating	Cost Estimating	Cost Estimating

Program Control *(Earned Value Management)*

Should be

Cost Estimating &

Program Control *(Earned Value Management)*

Knowledge Management

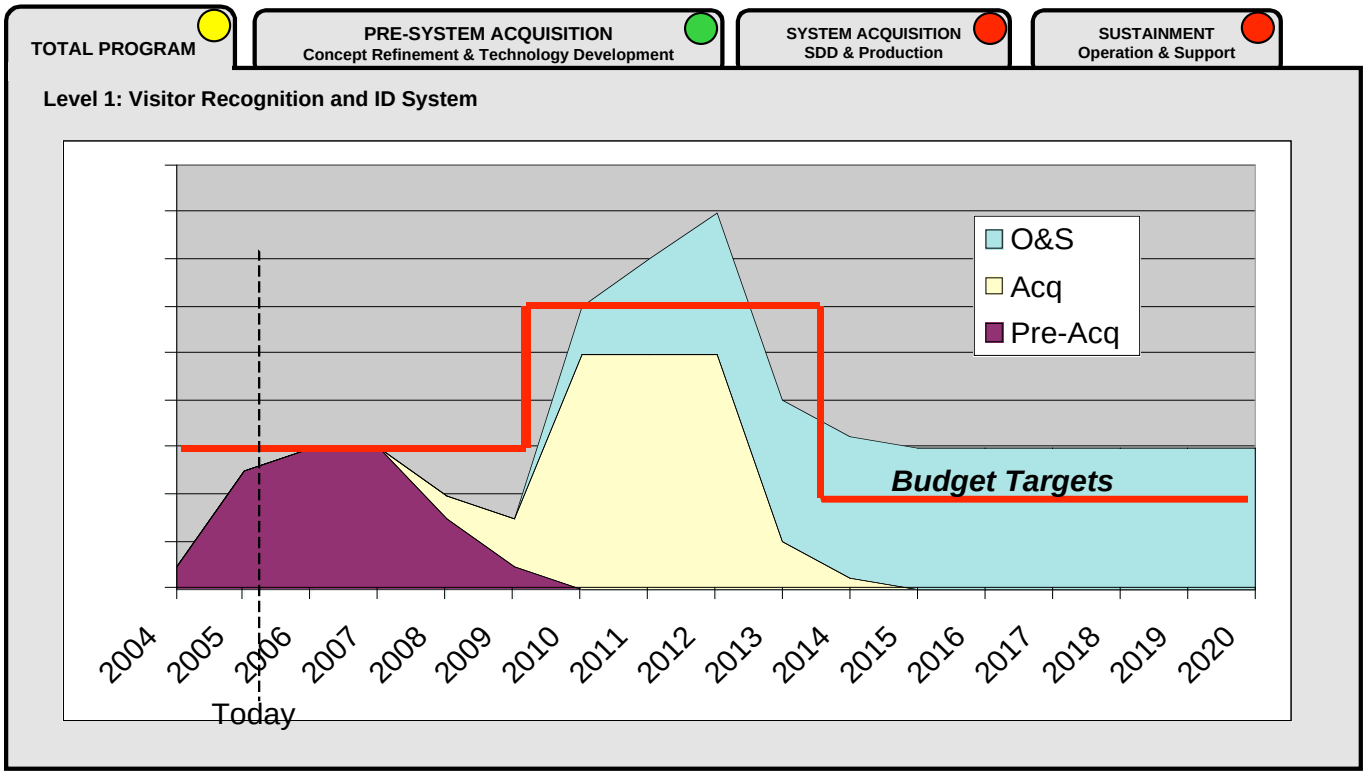
Step 5

Integrate cost, project control and knowledge management and ensure program is incentivized on forward looking measures

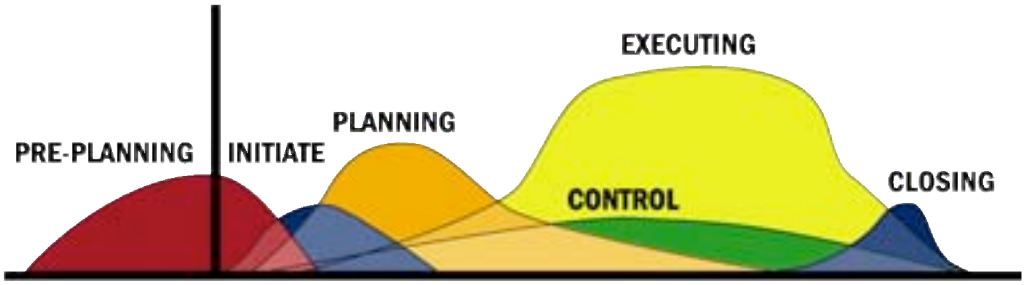
Program Affordability Dashboard

You cannot manage by only looking into the rearview mirror

Integrating estimating models with program control enables "forward-looking" performance based measures of cost, schedule and effectiveness.



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



People, Processes, Tools

1. Assemble the right team
2. Use a credible life cycle cost model
3. Get the estimate right the first time
4. Create, train, document and reuse knowledge: metrics and processes
5. Integrate Cost, Project Control, and Knowledge Management and ensure that the team is incentivized on forward looking measures

Federal Program Office Case Study

Department of Defense (DoD)

Standard Procurement System Gains Balanced Scorecard through Accurate Cost Estimating and Knowledge Transfer

- **The Challenge**: Overcome SPS software integration failures and functionality shortcomings and eliminate the ineffective resulting "work-arounds" that triggered a "strategic pause" in the project and a lack of confidence by end users and oversight boards.
- **Solution**: Partner with an expert who could produce accurate, independent cost estimates and analyses quickly and reliably, maximizing efficiency of existing DoD tools and processes.
- **Results**: A process of knowledge transfer and set of reusable best practices for project control that enabled SPS to interface with 32 systems across DoD and ended the "strategic pause" by regaining the confidence their customers, users, and the oversight agencies. More than 23,000 DoD professionals use SPS to purchase over $48 billion in goods and services; currently it's deployed in 800 sites worldwide.

Highlights: SPS achieved Upper-Management's Recognition as well as gained credibility with their oversight committee

Defense Contractor Case Study

United Defense

United Defense

Armament Systems Division Achieves Measurable Competitive Edge, Proven by Repeat Contracts and an Increased "Win Rate"

- **The Challenge**: Develop a cost-modeling tool that will immediately establish credibility with new customers by quickly producing "data-defensible" proposals and cost estimates. This new tool needs to respond fast to complex "what if" scenarios and make proposal and project adjustments seamlessly. Over time, a high "level of confidence" must be maintained through ongoing accuracy of quotes in the prototype, test and production phases, ultimately enabling United Defense to effortlessly execute contracts on time and within budget at all times.
- **Solution**: Establish a disciplined cost methodology based on a robust knowledge base of cost management throughout the life cycle of a program. United Defense's knowledge base is built on an internal history and industry-wide cost data using PRICE tools and consulting best practices.
- **Results**: Achieved a measurable competitive edge, proven by repeat contracts and an increased "win rate." With cost-modeling from PRICE Systems, United Defense has established credibility with its customers and contractors. Profitability is now sustained, allowing its systems to sell at competitive costs. Overall, United Defense is in a stronger negotiating position with suppliers,has improved workflow and reduced risk.

Highlights: ". *"We have to be profitable in order to develop new product lines, go after new business and execute DoD contracts. Our work using PRICE gives us the confidence we need to invest in new areas, deliver our projects at a fair price and move forward profitably. Customers keep coming back as a result."* - Jim Unterseher Director of Army Programs at ASD

Summary

- Affordability is the biggest barrier to program mission success
- Government oversight is demanding more affordability discipline
- Program Affordability Management is a practice that satisfies government oversight and helps ensure program success
- There are Six key steps to successful Program Affordability Management
- Program Affordability Management is practiced by successful programs today

"Among the most important software development practices leading to success are those of planning and estimating before the project starts, absorbing changing requirements during the project, and successfully minimizing bugs or defects. Successful projects always excel in these critical activities: planning, estimating, change control, and quality control. By contrast, projects that run late or fail typically had flawed or optimistic plans, had estimates that did not anticipate changes or handle change well, and failed to control quality."

Capers Jones,
Software Project Management Practices: Failure Versus Success,
Crosstalk Vol. 17 No. 10,
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If you would like to discuss further or find out more…

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