

Developing an Efficient and Repeatable Life Cycle Cost Estimation Process within an IPT Framework by Leveraging Parametric Tools and Constant Client Communication

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A L O N

Agenda

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- Program Manager's Dilemma
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- "The Solution"
- Keys to Success
- TruePlanning Framework
- Cost Estimation Best Practices
- PMO Functions
- Lessons Learned
- Summary

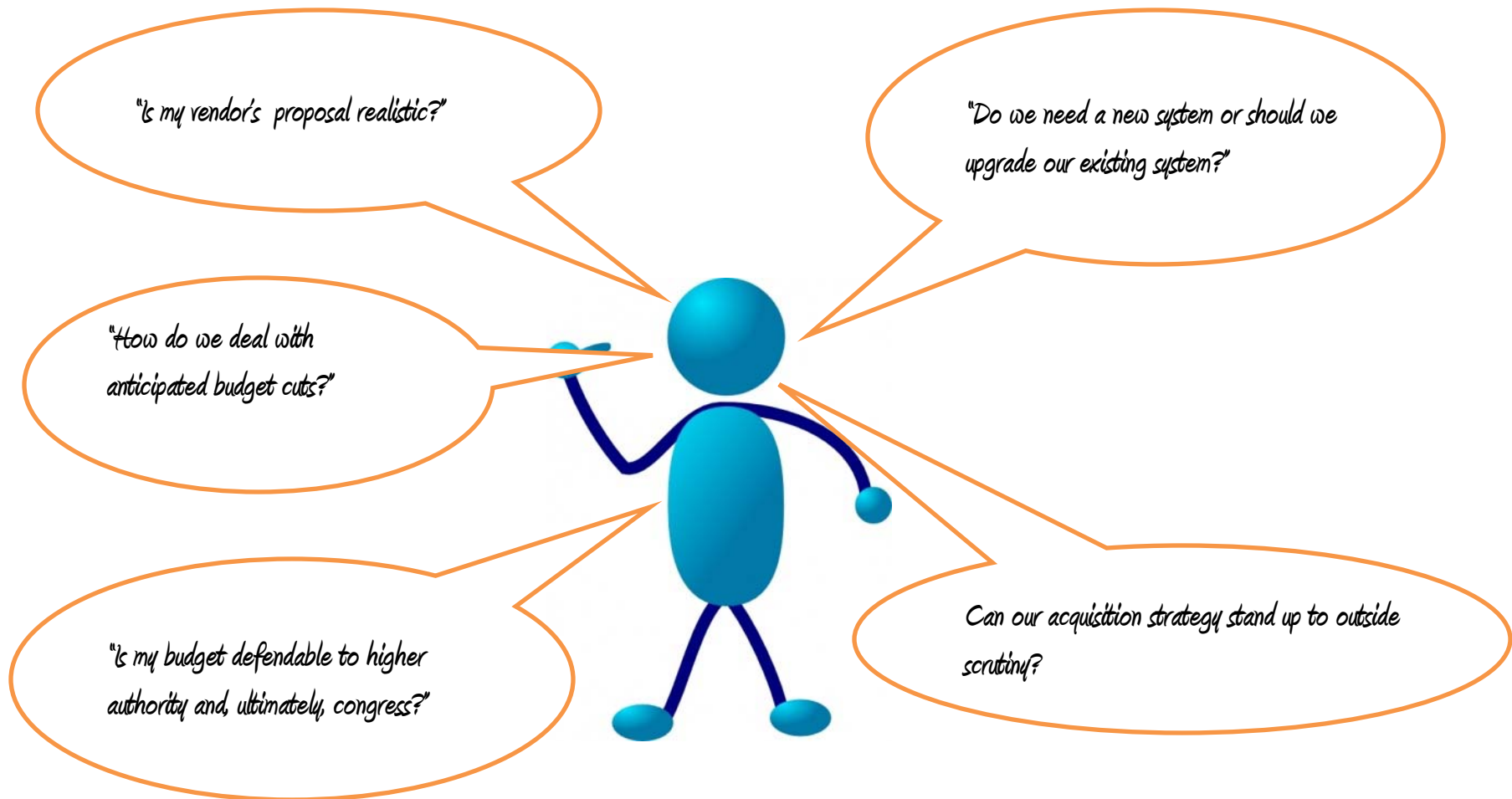
Roles & Responsibilities

- PRICE Systems-World leader in parametric estimation tools
 - 35-year heritage of schedule, effort and cost estimation
 - Begun as unit of RCA in late 60's; established as a Lockheed Martin division in 1975; spun-off as independent business unit in 1998. 100+ Employees
 - Offices in the U.S., Europe and Asia serving over 300 global clients; Over 12,000 users trained.
- Logapps LLC-Provides Independent Cost Analysis and Decision Analysis Support
 - Seasoned cost estimation capability
 - Non-advocate role

Project Description

- Our team developed an LCCE for Risk Assessment Management Program (RAMP)
- RAMP is designed to support aspects of the Federal Protective Service (FPS) mission focused upon improving security at federal facilities
- RAMP has four major objectives:
 - increase Inspector operational efficiency
 - enforce a standardized assessment methodology
 - improve customer service,
 - maintain a database for tracking risks, analyzing trends, maintaining oversight on reporting, and managing the workforce.

The Project Manager's Challenges



Analysis Constraints

- Client has limited resources and lacks an imbedded cost estimation capability or parametric tools
- PMO does not have organic cost estimation capability
- LCCEs have to be completed with low impact to PMO that pass oversight agency scrutiny
- Program Managers may tried to 'influence' cost estimates to stay within budget
- Requirements are not stable
- Sponsor lacks faith in Program Office cost estimates

The Solution

- Leverage PMO contractors with understanding of PMO requirements , background and politics
- Utilize TruePlanning with trained and experienced software estimators
- Develop requirements based-software size estimate
- View issues from PMO perspective

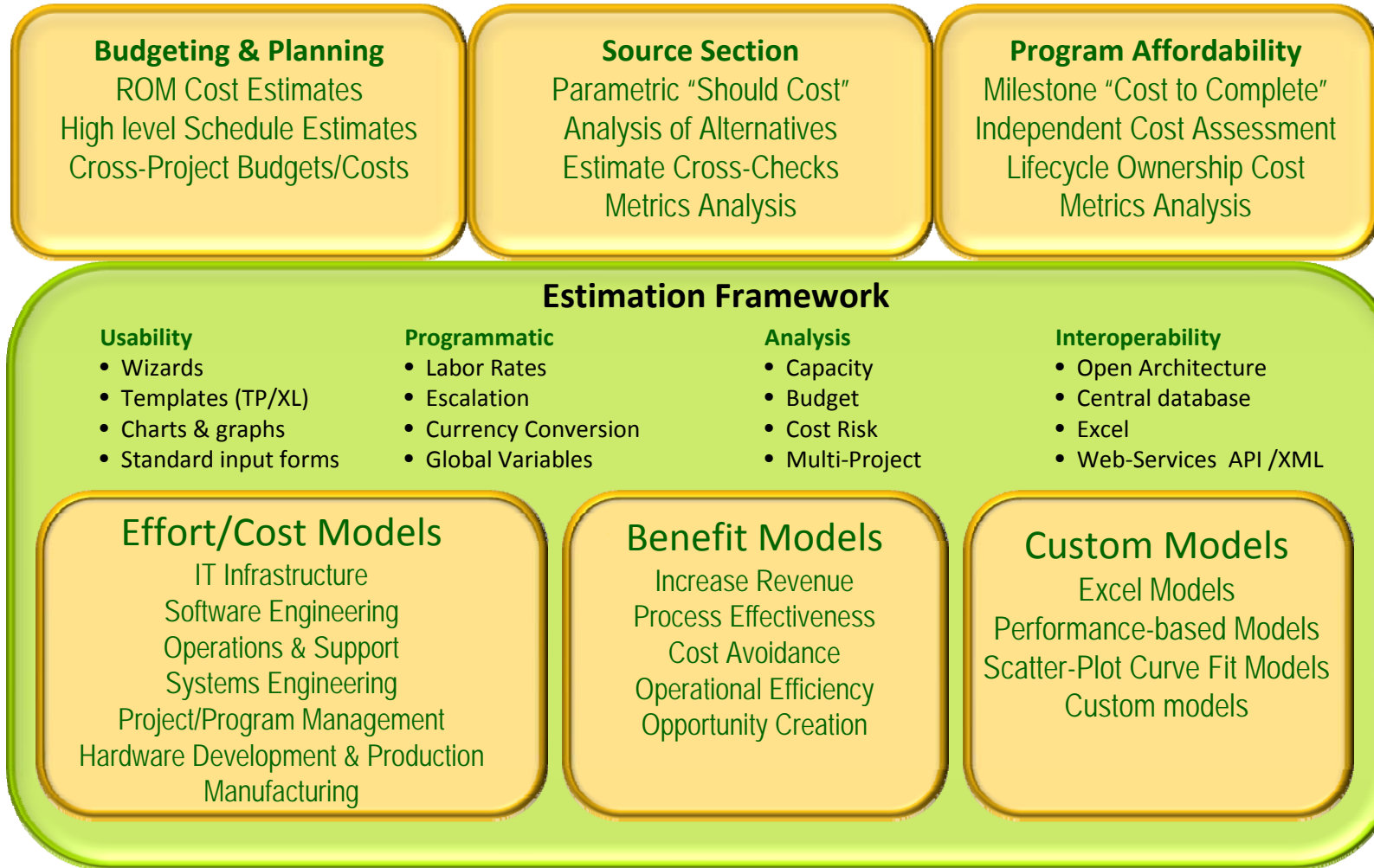
The Solution

- Parametric models serve as ‘learning tools’ for clients, which are easier to comprehend than complex Bottom’s-Up techniques
- By involving parametric OEM, investment can be minimized while providing access to model developer
- Requirements-based sizing allows for cost trade-offs

Keys to Success

- Utilize a Repeatable process
- Models and techniques that can be explained to Project Managers and allow for what-if drills
- Relationships with PMO that ease data collection and communication
- Follow best-practices and inject quality control in estimation process
- PMO gains thorough understanding of estimate strength and weaknesses
- Sponsor sees independence in team arrangement

TruePlanning Cost Estimating Framework





Existing Models



Logapps LLC consulting



PHOENIX INTERIOR



ACET



Microsoft Office

WEB SERVICES/API



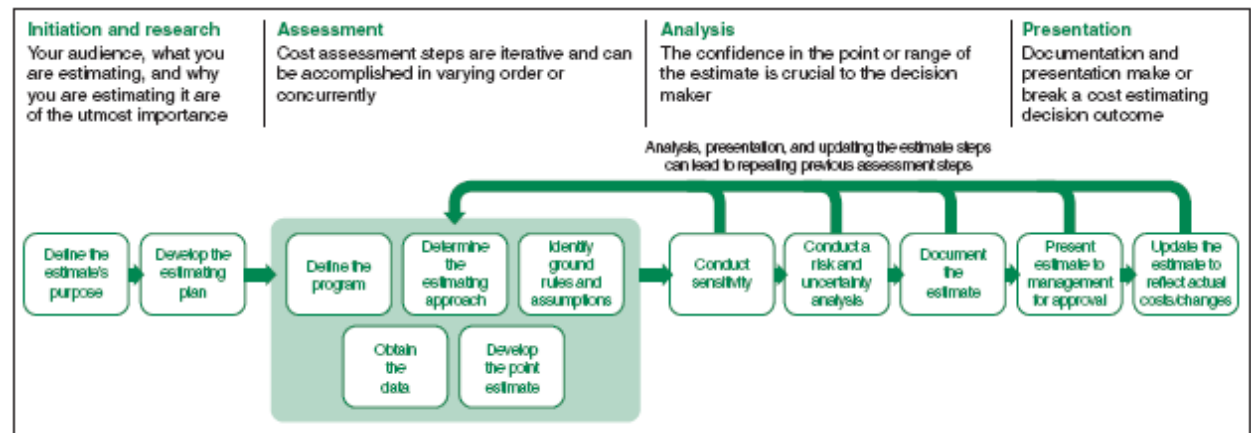
TruePlanning by PRICE Systems

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Cost Estimation Best Practices

- GAO Cost Assessment Guide provides documented estimation process
 - By identifying Ground Rules & Assumptions up front, discussion is focused on process and input, and not results
 - estimators should never be put in a position of determining if an estimate is right or wrong, but rather than it is defensible and followed a successful process
- SEI Checklist (*: A Manager's Checklist for Validating Software Cost and Schedule Estimates*)
 - Following checklist injects QA into estimation process

Seven Questions to Ask When Assessing Your Willingness to Rely On a Cost and Schedule Estimate	
1.	Are the objectives of the estimate clear and correct?
2.	Has the task been appropriately sized?
3.	Are the estimated cost and schedule consistent with demonstrated accomplishments on other projects?
4.	Have the factors that affect the estimate been identified and explained?
5.	Have steps been taken to ensure the integrity of the estimating process?
6.	Is the organization's historical evidence capable of supporting a reliable estimate?
7.	Has the situation changed since the estimate was prepared?

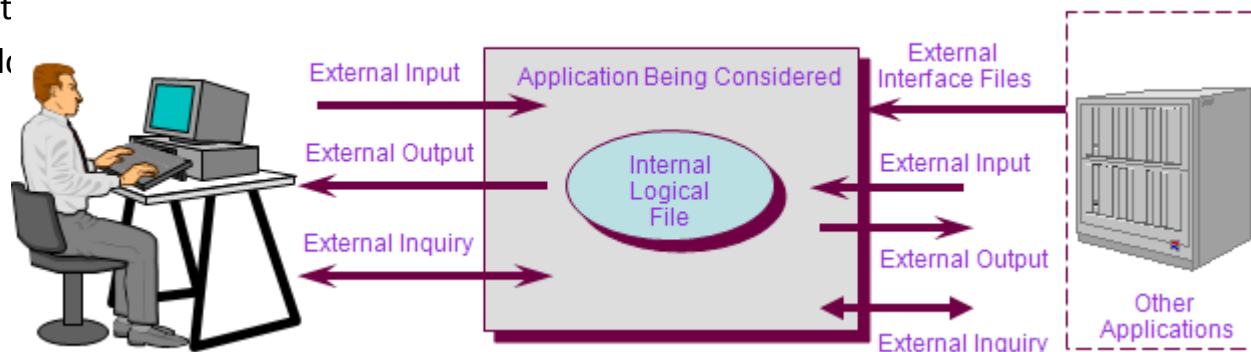


Cost Estimation Best Practices

- The GAO Cost Assessment Guide specifically addresses best practices with the use of commercial software models.
 - Calibrate to the user's environment
 - Provide extensive training
 - Develop formal estimation procedures
 - Provide frequent updates to the models
 - Our team adheres to all of the commercial software model usage best practices.

Requirements-Based Software Sizing

- A key to developing software estimates in pre-Design phase is use of requirements-based software sizing (function point analysis)
- Functional Requirements Document required to develop function point estimate
- IFPUG defines function points to “...measure software size by quantifying the functionality provided to the user based solely on logical designs and functionality specifications.”
- Function point analysis fits is well-suited for transactional based-systems
- Eliminates dependence on vendor SLOC quotes, and allows for cost trade-offs
- Basic steps...
 - Determine Type of Count
 - Identify Counting Scope and Application Boundary
 - Count Data Functions
 - Count Transactional Functions
 - Determine Unadjusted Function Point Count
 - Det
 - Cal



PROGRAM MANAGEMENT

- A defensible cost estimate eases burden on several PMO functions
- Cross-functional teams add in client understanding of cost estimates and financial management deliverables
 - Many PMOs do not fully understand underlying estimation approach
- Typical PMO support includes
 - **Full lifecycle Acquisition Support (acquisition planning to contract close-out)**
 - **Case Management**
 - **Program Management Office (PMO) Implementation and Operation**
 - **Financial Operations and Budget Support**
 - **Capitol Planning and Investment Control (CPIC)**
 - **Human Capital Planning**
 - **Independent Verification and Validation (IV&V)**

Lessons Learned

- Models and processes do not take the place of due diligence
- Sponsors may not trust costs models (parametric or spreadsheet-based) that are produced by PMO
- Following documented best practices gains buy-in from sponsors

Summary

- Teaming Parametric OEMs, Independent cost estimators, and PMO support contractors allows for efficient delivery of cost estimation deliverables
- OEMs provide access and institutional knowledge of their models
- Independent estimators provide level of autonomy
- PMO contractors provide access to data, and 'ground-truth'
- PMO does not need to maintain cost estimation 'standing army'