TOP CHALLENGES OF COST ESTIMATING TEAMS – EMPOWERING SMEs WITH BEST PRACTICES AND DATA
ProjStream

ProjStream – Who We Are

• 50+ years of combined industry experience
• Experts who love to help our users achieve greater growth and efficiency
• We can’t wait to help yours do the same!
Project Life Cycle (PLC) Solution

**BOEMax**
- Integrated Estimating and Pricing
- Historical Estimate, Actual Cost Data Library
- Process Library
- Hierarchical BOMs
- Rich Text Documentation
- Schedule Integration
- What-If Analysis, Model Changes, Audit Trail
- Top Down, Bottoms Up Traceability

**MaxTeam**
- Create and Maintain Budget Plan
- Track Key Performance Indicators
- Schedule Integration
- Measure Work Progress
- Import Actual Costs
- Maintain ETCs
- EVM

**MaxBoard**
- Interactive Data Analysis Dashboard
- Single or CrossProject Data Views
- Proactively Manage Cash Flow, Revenue, Resource Capacity and Demand

**Work Bench**
- Web application
- Short learning curve for SME
- Budget and ETC data entry
- Workflow approvals

**BOE Time Phased Data**
- Merge Approved Changes
- Historical Actual Costs

**Shared Database**
- Built-in Workflow
- Robust Ad-Hoc Reporting
Agenda

Welcome

• 45-minute talk and an interactive Q&A session to complete the hour
• Put any questions you have in chat and join in on the poll
• Stay for the Q&A session at the end

Your Speakers Today

• Chuck Kurtz—Director of Pricing, BAE Systems
• Tom Shanahan—President and CEO, ProjStream
Top Challenges to Address

- Scattered Historical Records – We Don’t Have Access to our Data
- Lack Of Standardization in Work Products
- Variations in SME Risk Assumptions Cause Uncertainty
- Tracking Change is Difficult and Takes Too Long
- Mystifying Estimate Rationale
Best Practices

- Make Data Accessible and Reusable
- Provide a Reusable, Repeatable Task Level BOE
- Standardize on BOE Attributes, Establish Feedback Loops
- Automate Change Tracking
- Standardize and Train on Rationale Process
1. Scattered Historical Records – We Don’t Have Access to our Data

• Our data storage is scattered, and important records are difficult to find, if not lost completely.

• Cost (Hours, Material Cost, Quantities)

• Technical – Requirements, Physical System Characteristics

• Programmatic – program parameters that can drive cost

• Schedule – Time-Phased Data (when is first material support gate, etc., when is first lot purchase and lead time, etc.)

• Primary vs. Secondary Data
1. BP – Make Data Accessible and Reusable

Adopt a method to store data that SMEs can query and access at their fingertips. Make it as easy as possible to translate historical data into data that can be used on the estimate along with complexity factors and rationale.

- Confidence in the cost-realism of your project estimates because you leverage accurate historical data.
- Primary Data is most defensible, provide this first and foremost.

Leverage Historical Data!

Ability to Query Columns – Search and Find Your Data

Leverage Historical Data!

Copy Model from Historical into your Estimate

Leverage Complexity Factors, use other attributes of the BOE as necessary
2. Lack Of Standardization in Work Products

We do repeatable work but don’t capture the methodologies or templates and so have to relearn and repeat attributes of an estimate and we have no idea of time to task.
2. BP – Provide a Reusable, Repeatable Task
Level BOE

Establish a shareable Estimate Component Library and methodology to provide a consistent, repeatable process for fast and accurate estimate building.

• We call this the “process library”
Process Library Base
Definition of One SRC Unit

Estimators
Apply Process Library
3. Variations in SME Risk Assumptions Cause Uncertainty

We have no learning mechanism or insight into knowledge sharing so uncertainty leads to excessive padding. SMEs do not trust our estimating tools and assume too much risk or too much opportunity.
3. BP I – Standardize on BOE Attributes

Define all the appropriate attributes of a quality BOE, for example, what specific labor and non-labor resources go into the estimate, standardize the rationalization and make it part of the process library to create time to task and rationale information. If there are no data or cost drivers to an estimate, consider a 3-point estimate approach.
3. BP II – Establish Feedback Loop

Reference and leverage relatively current performance data against the tasks homogeneously to normalize that data and update the process library templates.

- Eliminate subjectivity by taking personalities out of the equation vis-à-vis risk-aversion
- Include peer review capability and a process to identify correlations
- Documentation and previous work look-up for insight and history to capture the learnings
4. Tracking Change is Difficult and Takes Too Long

We cannot create high-quality estimate scenarios or capture changes. No capacity to see alternatives due to the lack of an automated process to generate scenarios.
4. **BP – Automate Change Tracking**

- Implement a platform with the ability to perform what-if modeling.
- Create a procedure to capture and report changes to the estimate.

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| COST | 01.03.220 DRAFTING | 473,459.22 | 492,638.60 |
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| COST Total | 5,302,860.13 | 8,269,054.50 |

| COST | 01.00.910 DIRECT MATERIAL | 57,023,662.07 | 62,726,028.28 |
| COST | 01.00.910 DIRECT MATERIAL | 9,610,496.54 | 10,571,546.19 |
| COST | 01.03.107 PROJECT MANAGEMENT | 2,592,486.00 | 2,851,745.60 |
| COST | 01.03.210 PROJECT ENGINEERING | 4,273,388.47 | 4,700,947.52 |
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| COST | 01.03.250 SOFTWARE ENGINEER | 235,047.37 | 235,047.37 |
| COST Total | 17,406,488.93 | 21,027,516.75 |
5. Mystifying Estimate Rationale

Our SMEs have no supporting rationale or charred methodology on which to base our cost estimates, leading to uncertainty, opacity, and cost margin padding to account for risk at the expense of competitive advantage.
5. BP – Standardize and Train on Rationale Process

• Identify, capture, and store the source of the estimated data and the underlying rationale for consistent and repeatable methods to express and format rationale shared by all.

• Establish single source of truth reliability. For example, update the estimate, ensure rationale gets updated accordingly.
Standardize the BOE

### Assumptions

- All thrust vector tests are automated

#### SOW

3.1.1. Produce System Drawings of Turbine Design

3.1.2. Design a fluidic thrust vectoring system that diverts thrust via secondary fluidic injections. Minimum thrust deflection should be 13 degrees.

TPM

Minimum thrust angle of 13 degrees

### Work Package or Estimate Level Data

| BOE ELEMENT DESCRIPTION | Design Thrust Vector

**METHODOLOGY**

Subject matter expert judgement is being used here. We are estimating 2 FTE's over a period of 5 months for this design. This is based on level of effort needed against similar design efforts described as.......

### Work Package or Estimate Level Data

| Resource: 01.00.910 |

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ProjStream Facilitates Best Practices

• ProjStream is an end-to-end software solution for all your project management needs, from bidding and cost estimating to project control and reporting.
• ProjStream handles searches within seconds with accountability
• The ProjStream Estimate Component Library facilitates a consistent, repeatable, and shareable methodology
• ProjStream builds estimates faster with higher profitability
• ProjStream stores a query-able set of data for rapid answers, performance, and profitability
Q&A Session
Next Steps

ICEAA Workshop May 16-18 in San Antonio, TX

Stop by the ProjStream booth and receive Top 10 challenges and best practices of cost estimation teams

How to engage in a meaningful way:

Process assessment or 60 day QuickStart Program

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