The Journey from Bottoms-Up to Predictive Modeling,
The Promise of a Positive ROI

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For ICEAA 2017

Approved for Public Release April 2017

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The Start of the Journey

- Estimating population employs a variety of methodologies
  - Bottoms Up
  - Analogy or “Similar To”
  - Parametric
- Looking for efficiencies in applying Bid & Proposal funding
- Parametric modeling promises positive ROI
- Estimating experts advocated trying new approaches
- Management concurs
- Decided to pilot a COTS Parametric Tool suite

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Team demographic

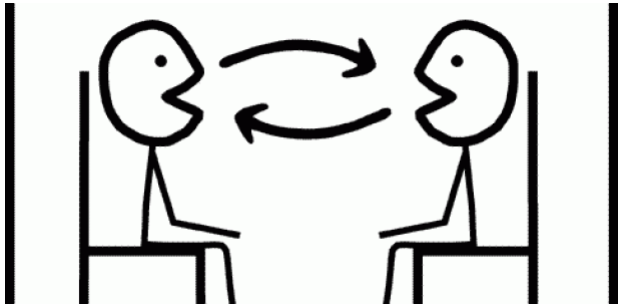
- Core team of engineering estimating & proposal expertise
  - In place for 7 Years
  - 12-18 months rotations
  - Leadership evolution
- Supports multiple products across the business
- Limited experience with parametric estimating

Prep the Team & Get Buy-In

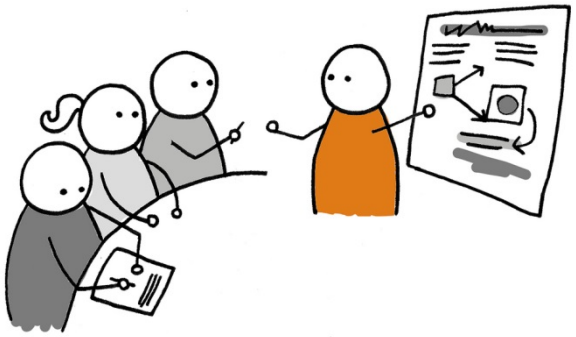
First Steps:

1. Identify and document roadmap items – what milestones do we hope to achieve in 2017 and beyond?
2. Plan activities for each milestone – what do we need to do to pilot this tool?
3. Review schedule commitments – what time frame can this be performed in, given current proposal tasks?
4. Review resources – will everyone on the team participate at the same level? Will there be one primary user?
5. Schedule training – we don't know what we don't know
6. Review training goals and user demographics with training instructors

Training Sessions



- Training is a 2-Way Communication
  - Communicating training needs during training
  - Course adjustments can be made
- Multiple Sessions were necessary
- Feedback to Training Instructor is key
  - What worked well for this team
  - What could be improved
- Hands On experience is necessary
- Needed to simplify the approach/declutter
- Developing mentoring relationship is key
- Need to get to the “aha” moments
- All intended users need to engage



Trial Runs – exploring the tool

- Promising Results – it looks like this may work for us!
- Capture estimate result data for analysis
- Trends of results for ROI
- Misses in results – important to identify
  - Set expectations early
  - Document internal guidelines for users
  - Model may not work for everything
- Mis-Starts and ReDos
  - Mis-understandings or assumptions, need to reconcile
  - Possible loss of data
- More feedback to vendor

Piloting

- Use real programs with known data
- Multiple parametric model runs & results
- Continue to refine approach and user guidelines
- Compile a set of results data
- Perform analysis on variances
- Perform analysis on “misses”
- Document model use cases what it does/doesn’t support
- Communicate and set expectations

ROI Assessment

- Initial Savings prediction of 25-30%, however...
- Analysis of 9 bids in 2016 showed a 40% - 55% Spend Saving, if Parametric Estimating used rather than traditional estimating. This translates to...
- Across the 21 ROMs in 2016, saving 40% would have freed up 15 full-time equivalents!

Deployment (near term)

- Steps for deployment
  - Identify budget commitment
  - Determine who the in house experts will be
  - Not all who were trained have the same expertise
  - Need data oriented skillset for best accuracy
- Stakeholder review of internal guidelines
- Dry Run using internal guidelines
- Analyze results for accuracy
- Deploy to in house experts
  - Continue to document results and analyze
  - Continue to update internal guidelines and communicate

Calibration with internal program data, as needed (future)

- Assess data requirements for calibration
  - Ask questions, define terms
  - Setup infrastructure
  - Establish goals and expectations
  - Identify stakeholders
  - Train the participants
  - Consistency is key!
  - This is important before starting!
- Collect/aggregate data needed for calibration
  - Best case, just need to aggregate
  - Worst case, need to collect all data required
  - Likely case, somewhere in the middle

Calibration with internal program data (continued)

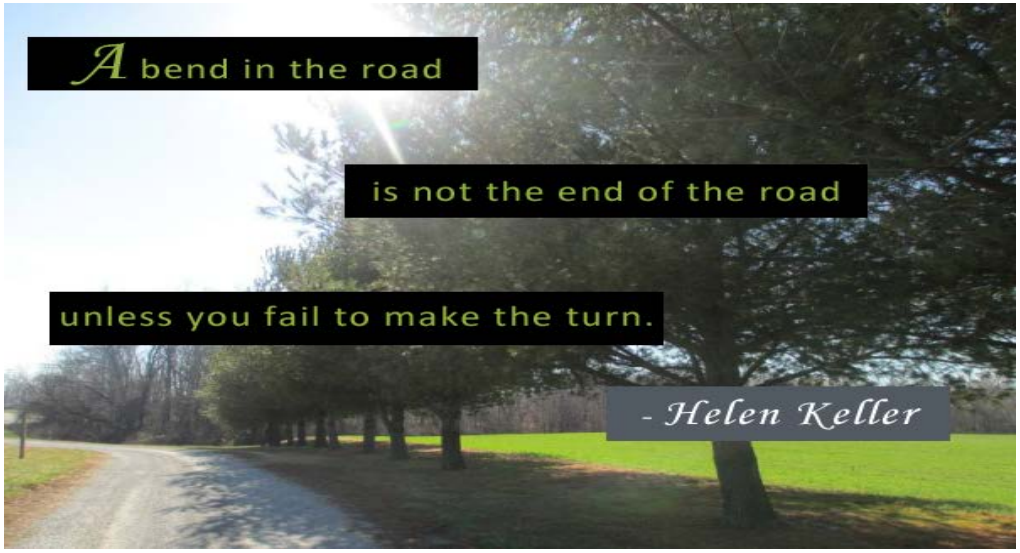
- Perform the calibration with vendor support
- Review & analyze calibration
  - Establish benchmarks for testing
  - Use representative programs
  - Pay attention to variances in results
  - Iterate & Document

In Conclusion…

1. Predictive Modeling shows strong potential for lowering the cost/proposal.

2. It is a journey, not a straight path to success (see cover slide).

3. Confidence in the tool takes time, and training/mentoring is key.



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Questions?

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Backup Slides

After Calibration are we done? (future)

- Not yet!!
- Run limited pilots with new calibration
  - Limited and controlled deployment
  - Review and analyze pilot results
  - Pay attention to issues and inconsistencies (they can have serious impact)
  - Note observations/assumptions
  - Update internal instructions as needed
  - Iterate Calibration activity as needed
  - This is an ongoing process (whew!)