

CER ISSUES AND SOLUTIONS


Kurt Brunner

October 2016

Bristol, UK

CER Issues And Solutions

Contents:

- **Disclaimer**
 - **Background**
 - **Issues**
 - **Solutions**
 - **Conclusion**
- 
- A decorative graphic consisting of several parallel white lines of varying lengths, slanted upwards from left to right, located in the bottom right corner of the slide.

CER Issues And Solutions

Disclaimer:

Views expressed are strictly those of the author.

A decorative graphic consisting of several parallel white lines of varying lengths, slanted diagonally from the bottom right towards the top right, located in the lower right quadrant of the slide.

Background:

- **Cost Estimating Relationships (CERs) are widely accepted as an effective cost estimating tool**

Background (Continued):

- **There are some issues with CER development and their application in the estimate that need to be addressed**
 - **They should not be accepted blindly**

Issues:

- **This briefing will discuss and explore some probable shortcomings and how they may be alleviated with the goal of refining our cost estimating capabilities**
- **Some such concerns involve**
 - **Normalization to constant year dollars (escalation or inflation)**
 - **Improvement (or learning) curve applications**
 - **Accurate accounting for quantities**
 - **CERs reflecting only the past**


Issues (Continued):

- **Normalization to constant year dollars (escalation or inflation)**
 - **The actual inflation that has been occurred is not really known**
 - **Future escalation is also conjuncture**
 - **Arbitrary factors without solid support are applied**

Issues (Continued):

- **Improvement (or learning) curves used in developing CERs and their applications**
 - **Are often arbitrary and not necessarily data based in their derivation**
 - **Are not always consistently applied**
 - ✓ **Often a curve (or curve type) with a slope different than that used in CER normalization is applied in the estimate**

Issues (Continued):

- **Accounting for total quantities may not accurately assessed**
 - **Past lots**
 - **Concurrent lots**
 - **Planned production**
 - **Spares**
 - **Commonality with other projects**
- 

Issues (Continued):

- **CERs address what happened in the past**
 - **Old experience is used as a baseline without adjusting for the future**
 - **The present and beyond is not frequently projected**
 - **Changes in effort [cost or labor] through time as technology evolves is not considered**

Solutions:

- **There are ways to adjust for these weaknesses – most can be looked at as uncertainties!**
 - **These uncertainties can be expressed as variability in creating the CER**
 - **The estimate should also be constructed to reflect such issues**
 - **The range of possibilities must be considered**

Solutions (Continued):

- **Inflation should consider range of potential inflation and apply uncertainty in calculations**
 - ✓ **In developing CERs**
 - ✓ **Within the estimate**

Solutions (Continued):

- **Improvement curve applications have a range of potential curves that may be addressed as an uncertainty**
 - ✓ **Calculations within the estimate and assumptions used in CER development should be consistent**


Solutions (Continued):

- **Quantities also have ranges and are often uncertain**
- **In CER development and estimate application the following ideally need to be taken into account:**
 - ✓ **Past production**
 - ✓ **Current production**
 - ✓ **Planned production**
 - ✓ **Spares**
 - ✓ **Commonality**

Solutions (Continued):

- **Technology changes impacting time, materiel, and cost trends with associated CER growth or reduction can be determined by:**
 - ✓ **Exploring product line experience through time**
 - ✓ **Developing trend profiles which will project or modify CER(s) for the time in the future that the activity will occur**
 - ✓ **Applying as an unknown in the estimate**

Conclusion:

- **CERs (and the way they are employed) are a commonly used and accepted tool**
 - **Would benefit from some suggested refinements**
 - **These will further improve our cost estimating accuracy and abilities**
- 
- A decorative graphic consisting of several parallel white lines of varying lengths, slanted upwards from left to right, located in the bottom right corner of the slide.

Kurt Brunner, CCEA-P

ESTMPRFT1@yahoo.com

(714) 797-3478

A decorative graphic consisting of several parallel white lines of varying lengths, slanted upwards from left to right, located in the bottom right corner of the slide.