



Quantifying Uncertainty in Early Lifecycle Cost Estimation (QUELCE)

Software Solutions Division

QUELCE Workshop

The Quantifying Uncertainty in Early Lifecycle Cost Estimation (QUELCE) workshop enables a client to convene a set of domain experts to formulate early lifecycle cost estimates expressed as cost distributions rather than single points. The QUELCE method involves a five-step process that begins with identifying potential future changes to nominal program execution that will influence program cost. This is followed by probabilistic modeling of the interrelationships of the program change drivers and Monte Carlo simulation of cost model inputs to create program cost estimate distributions. Because many of the inputs are based on subject-matter expert judgment, this workshop also

involves a novel approach to calibrating expert judgment through a series of training exercises.

Workshop Requirements

- Pre-workshop access to existing planning artifacts, such as AoA and ICD/CDD
- Access to domain experts who can anticipate different reasons for cost changes during program execution

Time Frame

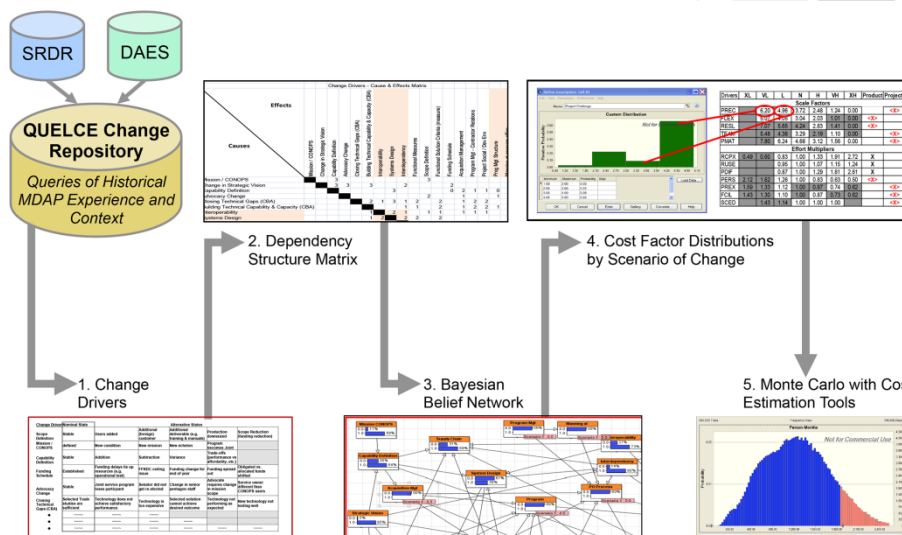
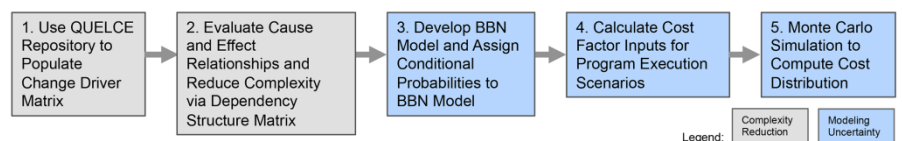
- SEI preparation of 1–2 weeks to review available documentation with two SEI staff members
- Two SEI staff members on site for 5–7 days to facilitate five 3-hour workshops with both technical and financial

program office staff

- 5–7 days to prepare baseline estimate and suggested scenario-based estimates
- Typically, 3–5 days to assist program office staff with explaining estimates as needed

Expected Results

QUELCE produces a cost estimate that is represented as a distribution from which a decision maker can understand the level of risk associated with a particular cost value. It also produces an executable model that can be used to run alternative scenarios and that can be updated in the future for reestimation purposes. The model and information developed also provide good documentation of the basis of the estimate.



Related Web Sites

- www.sei.cmu.edu/library/abstracts/reports/11tr026.cfm
- www.sei.cmu.edu/library/abstracts/reports/13tr001.cfm
- blog.sei.cmu.edu/archives.cfm/category/software-cost-estimates

For More Information

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