COSOSIMO Workshop Out-Brief

19th Forum on COCOMO and Software Cost Modeling
Model Unification Tutorial
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28 October 2004 COSOSIMO Workshop Out-Brief

COSOSIMO Workshop Agenda

1. Overview of COSOSIMO concepts
2. Detailed discussion of candidate size and cost drivers
3. Feedback from attendees including collection of survey information and related needs within your organizations

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Attendees

- 12 participants
- Organizations represented
  - Aerospace Corporation
  - Bae Systems
  - Boeing
  - Disciplined SW Consulting
  - FAA
  - Lockheed Martin
  - Sparta, Inc.
  - University of North Carolina
  - US Army Tacom
  - USC CSE

How Much Effort to Integrate a System of Systems?

- Systems developed by system contractors
  - Total effort 3000 person-years
- System of systems integration functions
  - SoS abstraction, architecting, source selection, systems acquisition, integration, test, change management effort
- How much to budget for integration?
- What factors make budget higher or lower?
- How to develop and validate an estimation model?
Proposed Size Drivers

- Number of major interfaces
- Number of components
- Number of operational scenarios

Each weighted by:
- Complexity
- Volatility
- Degree of COTS/reuse

Key Discussions

- Concept of SoS
  - Varies tremendously—no consistent definition—may want to consider another term for model
  - Development may or may not include LSI
  - May or may not include long term vision of architecture
    - Often may be evolutionary in nature
    - Over time, other systems come into framework
- Cost drivers
  - May include political and process as well as technical aspects
  - Management decisions, while difficult to capture, may have significant impact on costs
Stakeholder Requests (not prioritized)

- COSOSIMO needs to accommodate
  - Evolutionary definition of SoS architecture
  - Incremental funding of SoS
  - Costs associated with users of independent version of system components
  - Interdependencies between existing components and cascading impacts
  - Multiple concepts/views?
  - Total cost of ownership?
  - Feedback mechanism to support in process calibration and update of estimates using actual data to date

Stakeholder Requests (continued)

- Drivers
  - May or may not have LSI – needs to be reflected in cost drivers
  - Number and complexity of test beds
- Consider options for dynamic calibration
  - Across program
  - Within a program
- Model should be adaptable to respond to changing trends
- Incorporate risk assessment
- Decision support tool versus cost model
- For post-architecture version, incorporate data from COSYSMO, COCOMO, and COCOTS
- Organizational enterprise key concept for this model (Zachman framework model)
Delphi Survey

- Initial survey thought to be incomplete
  - Results still captured for further analysis
- Attendees asked to answer the following questions
  - 1. What are your recommendations for the scope of COSOSIMO?
  - 2. What are the key drivers to consider for this scope?
  - 3. What are the outputs/information you would like to see from a COSOSIMO model?
- Survey results to be provided in detailed minutes of workshop
Next Steps

- Publish more detailed minutes and distribute additional information provided by attendees
- Analyze survey results and distribute findings
- Continue dialog in telecons (near term)
- Conduct follow-up workshop
  - USC CSE Annual Research Review (March 2005)
  - Practical Software and System Measurement Conference (July 2005)