Practical Software and Systems Measurement

A foundation for objective project management

COSYSMO Requirements Volatility Workshop

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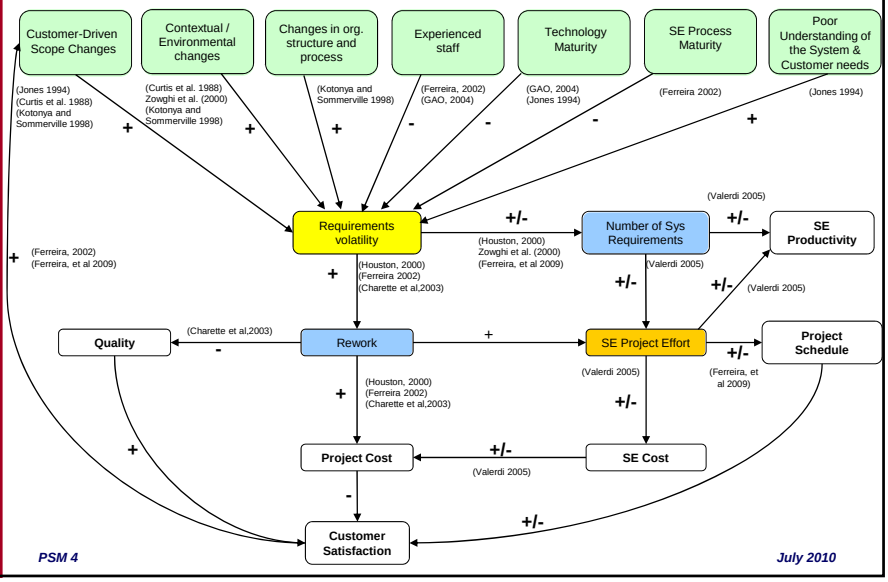
Workshop Participants

Name	Organization
Peter Baxter	Distributed Management
Dan Beisel	Northrop Grumman
Greg Mazourek	Lockheed Martin
Peter McLoone	Lockheed Martin
Antonio Moya Catena	Ericsson España
Garry Roedler	Lockheed Martin
Miyoung Shim	Samsung SDS
Tori Shu	Navy
Ricardo Valerdi	MIT
Mauricio Peña	USC

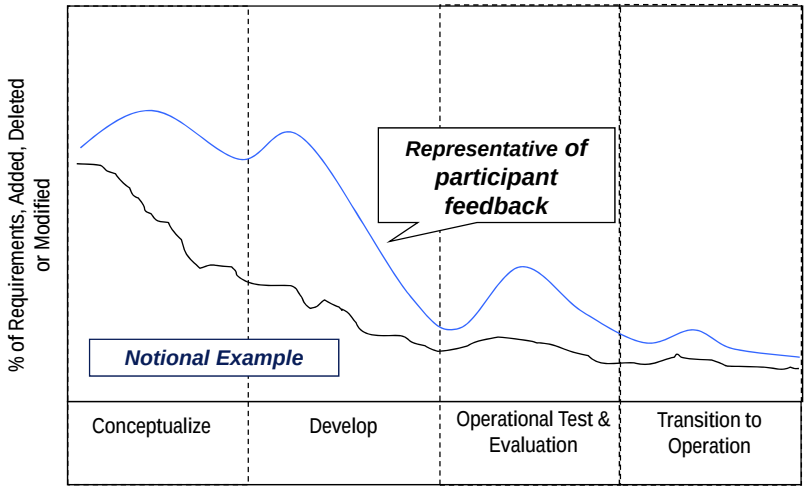
Summary

- *Provided an overview of COSYSMO and the latest research results in systems engineering reuse*
- *Presented background on requirements volatility, its impact on systems engineering effort and implications to COSYSMO*
- *Obtained feedback on a causal model that relates technical, organizational and contextual project factors to requirements volatility*
- *Obtained data from each participant:*
  1. *A requirements volatility profile across the lifecycle phases covered by COSYSMO*
  2. *The "ease of change" profile across the same life cycle phases*
- *The group discussed variations in the volatility profile depending on the type/domain of the system under consideration*

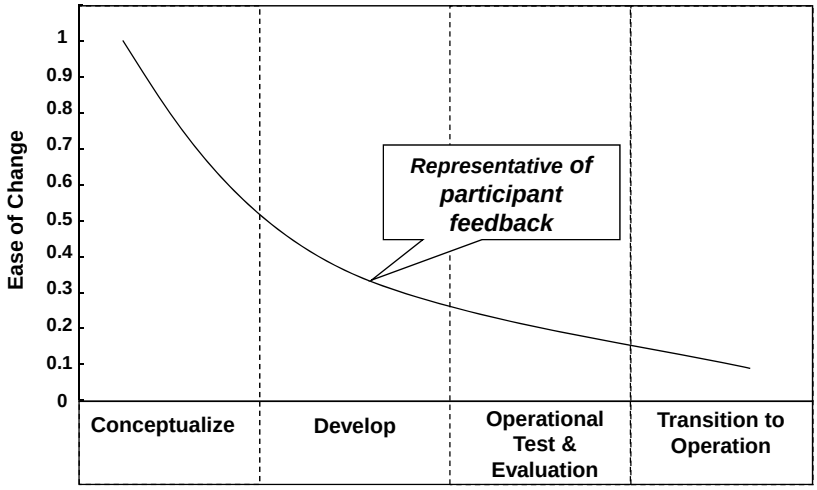
Causal Model (normative)



Determine Expected Requirements Volatility Profile



Determine Volatility Weighting Factor



Requirements volatility weighting factor = 1/ ease of change

Conclusions, Recommendations, and Results

- Objectives of the Workshop were met
- Feedback on the causal model:
  - Estimation may be a source of volatility that is currently not captured in the model
  - Need to depict the strength of the relationship between variables
- Requirements Volatility and "ease of change" profiles
  - The lifecycle phases and volatility profiles are different in commercial vs. government product development environment
  - There may be an increase in requirements volatility due to transitions between organizations and lifecycle phases (e.g. from development to test & evaluation)
  - It may not be appropriate to track requirements volatility during the conceptualize phase of the lifecycle because technology is still being developed and the contract may not be awarded yet
  - In general, there was agreement with an exponential "ease of change" curve as a function of lifecycle phase

Next Steps/Action Items

- Compile results from two exercises and share them with workshop participants
- Update research proposal to reflect observations and data obtained during the workshop
- Engage workshop participants and PSM group in the progression of the research (data collection, results)