



Level 4



Requirements for Estimation Purposes

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Instructor Introduction

Mr. William H. Roetzheim



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Leader in IT project modeling. Developed CostXpert. Co-Founded CostXpert Group. Author of multiple books, articles and columns. Regular lecturer at industry conferences. Extensive industry and government benchmark data.

Education: MBA-University of La Verne, BA-University of Illinois.

Certifications: PMI Certified Project Management Professional (PMP), Risk Management Professional (RMP), IFPUG Certified Function Point Counter, SCEA & ISPA Certified Cost Estimation Analyst (CCEA), ISACA Certified in Risk and Information Systems Control (CRISC), ISACA Certified Information System Auditor (CISA).





Agenda

- Estimation concepts.
- Focused requirement analysis.
- Requirement analysis process.
- Supporting data elements.
- Cost analysis requirement document (CARD).
- Tips and Tricks.



Estimation concepts

- Good estimates are:
 - Accurate.
 - Comprehensive.
 - Credible.
 - Replicable and Auditable.
 - Timely.
 - Traceable.



Source: International Cost Estimating and Analysis Association (ICEAA)

Estimation concepts

- Cost estimating cannot:
 - Be applied with cookbook precision.
 - Produce results that are better than input data.
 - Garbage In, Garbage Out (GIGO).
 - Predict political impacts.
 - Substitute for sound judgment, management, or control.
 - Make final decisions.



Source: International Cost Estimating and Analysis Association (ICEAA)



Estimation Concepts

- Determine estimate purpose.
- Define estimate boundaries:
 - Scope, time, exclusions, constraints.
 - Note that the estimate boundaries may be different from the project boundaries.
- If needed, create an estimate WBS:
 - Breakdown to apply estimation techniques.
 - Breakdown to support analysis and what-if.
 - Breakdown to support acquisition.
 - Breakdown to support Earned Value Management.
 - Estimation often aligns with control points in the WBS.

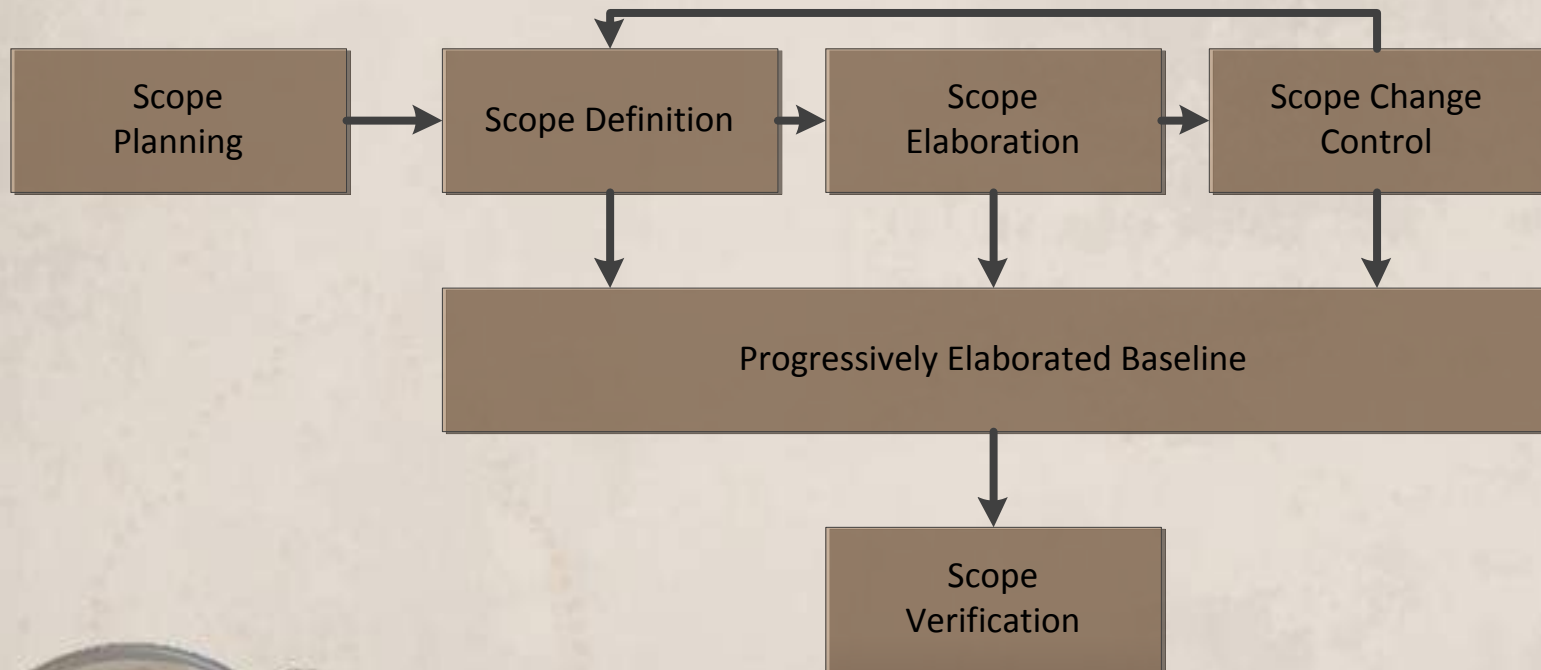


Estimation Concepts

- Estimation approaches and applicability:
 - Catalog look-up.
 - Learning curve.
 - Analogy.
 - Parametric:
 - High level.
 - Parameterized catalog (High Level Objects, or HLOs).
 - Bottom-up.



Progressive Elaboration



Focused requirement analysis

- Three levels of requirement definition:
 - Business goals and objectives.
 - High level business requirements.
 - Technical requirements.



Focused Requirement Analysis

- Characteristics of good high level business requirements:
 - Unifying: Understandable to both business and technical stakeholders.
 - Deliverable focused, not activity focused.
 - Comprehensive: Capture all required delivered functionality.
 - Unique: Avoid redundancy.
 - Aligned: Provide an access point into the estimation methodology.



Focused Requirement Analysis

- Requirement components (may be inferred):
 - What must be delivered? How many?
 - Is this capability new, additional, enhanced, test only, or a repair?
 - How complicated or difficult is the thing being delivered?
 - For counts larger than 30, the central limit theorem can be applied and the values set to average.
 - As a minimum, high level requirements must form a basis for making informed assumptions about these elements.



Focused Requirement Analysis

Some Estimation Catalogs

SAP

Other or Unknown
 Batch
 Business Requirement
 Configuration
 Defect
 Development
 Interface
 Report
 Screen
 Table
 Workflow
 Deployment

Demo-Financial

Unknown
 Batch/Service
 Business Requirement
 Configuration
 Consulting-Configuration
 Consulting-Other
 Consulting-Performance
 Consulting-Security
 Interface
 Page
 Report
 Software Application
 Workflows
 Other

IVR

Admin Screen
 Call Initiation
 Call Tree Option
 Interface
 Report
 Security Profile
 Table
 Voice Message
 Other IVR Work

Agile

Stories

FFP

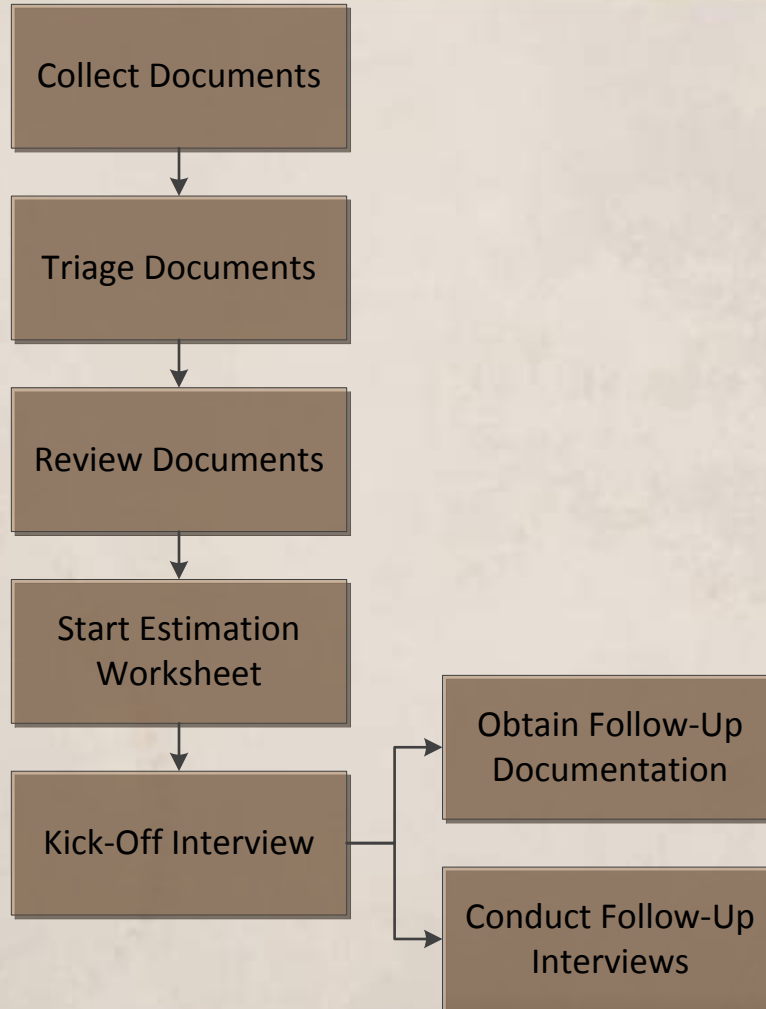
Screens
 External Interface Files
 Reports
 Messages
 Logical Internal Tables

UML

Scenarios
 Class-Control
 Class-Interface
 Class-Other
 Tables
 Methods



Requirement analysis process



Supporting Data Elements

Normally required:

- Work effort (project, blueprint, build, prototype, etc.).
- Estimator.
- Required environments, tier level, application layer load, data layer load, services/interfaces load.
- Meeting notes.
- Estimation related points of contact.
- Impacted applications/components.
- Impacted work groups or contractors.

May be optional:

- Business goals and objectives.
- Benefit streams over time.
- Project descriptors (cost center, objective, region, etc.).



Cost analysis requirement document (CARD)

- Collects together the basis of the estimate.
- Value:
 - Credible.
 - Replicable and Auditable.
 - Traceable.
 - Supports updates to the estimate.



Tips and Tricks

- Team interview techniques.
- Estimating versus designing.
- Use the “sniff test,” but only at the end.
- When validating, focus on hands-on time at the component level.
- Accuracy versus precision.
- The wisdom of crowds.



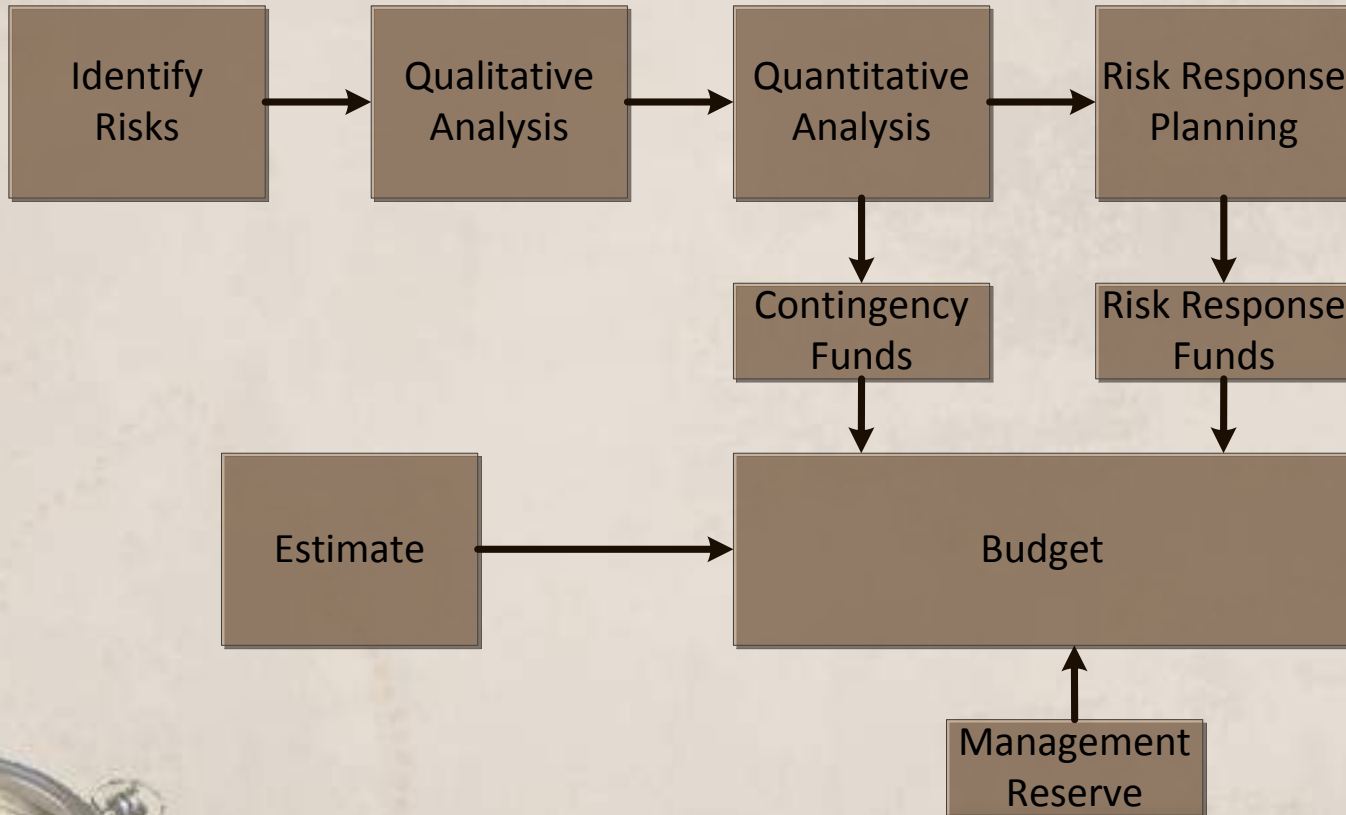


Some case studies

- State of California
- Procter and Gamble
- Top 10 bank



Project Risk Management





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Interview Workshop





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Questions? Feedback?

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