

Estimating Resource-Constrained Projects

Course Summary

Description

Project managers have considerable difficulty accurately estimating effort and duration for all types of projects. Systems projects have an additional complication—resource constraints—which common estimating techniques often fail to deal with appropriately. Unlike construction projects on which many of the techniques are based, systems project tasks seldom can be performed by just anybody. Resource levels alone are not sufficient to guide such projects. Instead, these tasks are dependent upon particular individuals with specialized skills. Just as an average-sized suit fits only a few people well, project estimates can miss the mark by a wide margin when they fail to take into account these often-large differences among resources. This interactive workshop identifies critical factors for successful estimation, especially resource constraints, and shows how to address them in making more accurate effort and schedule estimates. Exercises enhance learning by allowing participants to practice applying practical techniques to commonly-occurring examples.

Objectives

At the end of this course, students will be able to:

- Learn ten reasons why effort and duration are estimated incorrectly.
- Learn techniques for adjusting estimates in accordance with resource variations.
- Understand how most scheduling tools fail to recognize effects of resource constraints.
- Learn methods for assigning the right resources to the right tasks at the right times.
- Learn ways to monitor and improve estimating effectiveness.

Topics

- Critical Success Factors
- Fitting The Pieces Together
- The Pieces That Take The Effort
- Dependency Networking

Audience

This course has been designed for managers, analysts, designers, programmers, testers, auditors, and users who plan, oversee, and/or carry out software projects.

Prerequisites

There are no prerequisites for this course.

Duration

One day

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Course Outline

I. Critical Success Factors

- A. Systems industry's estimating track record
- B. Impact of poor credibility on estimates
- C. Critical success factors for estimating
- D. Lack of commitment to delivering results
- E. Political correctness--acceptable answer
- F. What does your boss gain when you fail?
- G. Why bosses give unrealistic targets
- H. Knowing accurate estimates are impossible
- I. Failure to learn how to improve estimates
- J. Estimating with no idea of what's involved

II. Fitting The Pieces Together

- A. Intrinsic vs. extrinsic durations
- B. Productive time, individual differences
- C. Where time goes during the day
- D. Rules of thumb adjustments
- E. Calendar conflicts
- F. Can't catch up on weekends
- G. Burnout issues
- H. Quiet time technique
- I. Effects of multitasking
- J. Tips for getting more done in same time
- K. Controlling time lost in meetings

III. The Pieces That Take The Effort

- A. Avoiding overlooking things
- B. Defining all the requirements, deliverables
- C. Identifying tasks needed for the delivery
- D. Misjudging work involved, subtasks
- E. Failing to provide for contingencies, change
- F. Sizing: Function Points, lines of code
- G. Calibrating effort and duration
- H. Accounting for differences among resources
- I. Normal variation and Parkinson's Law
- J. Work Breakdown Structure techniques
- K. Relating to resource type and level
- L. Monitoring, adjusting, and refining

IV. Dependency Networking

- A. Concurrent and dependent tasks
- B. Managing the Critical Path
- C. Leveraging with slack
- D. Managing resources across projects
- E. Resource leveling techniques
- F. Appropriately assigning added resources
- G. Only two ways to finish the project earlier
- H. Abide both task and resource dependencies
- I. Brooks' Law and its corollaries
- J. Recognizing resources builds credibility
- K. Making estimates come true