



## IT Infrastructure Cost Estimating, Budgeting, and Value Engineering Skills

01 - 12 Jul 2024  
London (UK)



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## Introduction:

The decision to proceed with IT projects is often based almost exclusively on early conceptual cost estimates, and these estimates provide the basis for the cash flow projections. Unreliable cost estimates can result in significant cost overruns later in the project life. As potential projects are considered, management not only requires cost estimates of high accuracy but through obtaining better pricing for the original services optimize whole-life project value.

Determining which estimation method to use, at each stage of the IT project development, depends on the information available at the time of preparation and its desired accuracy. Besides, decisions regarding optimizing project costs without sacrificing functionality are highly dependent on the use of a set of systematic and logical procedures and techniques to enhance the whole-life project value. This course will provide the delegates with the necessary skills needed for accurately estimating the total cost of their proposed IT projects enhancing the overall value of project delivery. The course offers a series of estimating techniques and processes to forecast accurately the anticipated costs of projects with a focus on pricing self-performed work, estimating negotiated contracts.

The course also presents the value engineering methodology which can be used to identify alternative ideas/solutions at any project phase to produce the client's best value requirements. Within the project cost management context this course significantly enhances cost estimating, budgeting, creative thinking, problem-solving, and informed decision-making skills.

## Targeted Groups:

- Financial Professional
- General Accounting Professional
- Business Unit Professional
- Project Managers
- Project Cost Estimators
- Cost Controllers
- Project Planners
- Contract Professionals
- Anyone Interest in Project Initiation, Project Estimating and Budgeting, and Development

## Course Objectives:

At the end of this course the participants will be able to:

- Gain knowledge of techniques used in IT service estimating, from the conceptual stage to the final detailed estimate
- Understand the different types of estimates used to accurately and progressively estimate project costs
- Understand the fundamental concepts of Value Engineering and Analysis
- Understand how value engineering supports effective IT project scope analysis
- Appreciate the level and nature of the information needed to develop an IT project scope
- Gather and organize information and cost relevant to key elements of the service provided

- Report effectively to top management and project stakeholders in the context of proposing alternatives that improve the overall project value
- Demonstrate proficiency in applying costing principles
- Present a convincing case in support of certain project alternatives.
- Integrate all relevant project elements into a cohesive and comprehensive cost estimate
- Prepare budget estimates that will enable the owner-organization to make informed decisions as to the feasibility of a potential project
- Compare the costs of alternative strategies or technical approaches to ensure the most economical project at the desired level of quality
- Keep accurate control of the progressive budgeting process based on the various stages of design
- Prepare accurate budget estimates through the programming phase, the schematic design phase, and finally the design development phase
- Obtain the skills required to prepare and manage the bidding process
- Keep accurate control of the progressive budgeting process based on the stages of design
- Manage the interface between many value-adding project phases and management expectations
- Apply systematic and innovative methodology with a multi-disciplinary approach to achieve better value for projects.

## Targeted Competencies:

- Skill and confidence to estimate project costs accurately and ability to sidestep the most common cost estimating pitfalls and problems.
- Developing an initial project value for the owner
- Preparing bids and cost proposals
- Determining the cost impacts
- Preparing a Schedule of Values in day-to-day market
- Creating historical cost databases to improve future estimating accuracy
- Bringing Value Engineering into the organization's project initiation
- Evaluating cost and true value of the project service.
- Evaluating the results of a brainstorming session to develop the best value-adding service.

## Course Content:

### Unit 1: Cost Estimating Basics

- The estimating life cycle
- Phases of the Design Process
  - Programming phase
  - Schematic design
  - Design development
  - Construction documents
- Estimating accuracy by phase
- Conceptual Cost Estimates
- Assemblies cost estimates
- Cost indices
- Semi-detailed Estimates Narrow Scope Estimates
- Definitive Estimates Detailed Scope Estimates
- Basic procedures
- Bid method
- Negotiated method

- Types of contracts

## **Unit 2: Broad Scope Cost Estimating Techniques:**

- Adjustments to Project Cost for Broad Scope Estimates
- Virtual Datacenter Project Cost Analysis
- SD-WAN Cost Estimates
- Formulae for Cost Estimating
- Z-Value Table
- The Probability of Project Completion
- Estimating the Project Cost at a Required Probability
- The Probability of Completing
- Adjustments to Estimates Based on Previous Projects
- Adjustments for Time
- Review: Future Value of Money
- Review: Present Value of Money
- Equivalent Annual Interest Rate
- Index to Adjust for Time
- Equivalent Compound Interest
- Adjustments for Size
- Economic Price Adjustment
- Estimating Durations based on the Learning Curve Effect
- Estimating Costs based on the Learning Curve Effect
- Learning Curves

## **Unit 3: Price Estimates:**

- Bid forms
- Direct cost estimation
- Variation-in-quantity contract provision
- Risk analysis
- Bid finalization

## **Unit 4: Market Analysis:**

- Market research, market insights, and 'listening posts'
- The market analysis process and different levels of competition
- Segmentation and targeting
- The buying process and cycle
- Competitive analysis including Porter's 5 forces

## **Unit 5: Estimating Process:**

- Estimating by design phase
- Programming budget estimates
- Schematic design budget estimates
- Design development budget estimates
- Estimating pre-construction services
- Request for proposal
- Development of pre-construction services estimate
- Pre-construction services contract

## **Unit 6: Bid Contract Estimating Process:**

- Pre-estimate activities
  - Estimating process
  - Work Breakdown Structure
  - Estimating team
  - Scheduling the estimating work
  - Accuracy and error prevention
- Pricing self-performed work
- Recap sheet
- Applying pricing factors
- Summary recap
- Project summary schedule
- Alternative techniques
- Final document review
- Completing the bid summary
- Final mark-ups
- Validating the estimate
- Estimating Programmers work
- Estimating Developers work
- Completing the estimate

## **Unit 7: Negotiated Contract Estimating:**

- Guaranteed Maximum Price Estimates
  - Estimating process
  - Contingencies
- Fee determination for negotiated contracts
- Reimbursable versus Non-reimbursable costs
- Home office overhead
- Risk evaluation
- Fee structure
- Cost savings split
- Strategies for responding to the Request for Proposal
- Documents to be included with the Request for Proposal
- Negotiated subcontracts
- Cost proposals for negotiated contracts

## **Unit 8: Narrow Scope Cost Estimating Techniques:**

- Power-sizing techniques
- Factor estimates
- Cost estimating relationships CER
- Design-to-cost-estimates
- Target cost estimates
- Adjusting for Project Type and Quality Level
- Features Determining the Quality Level Grade of a Structure
- Parametric Cost Estimating
- Analysis of Estimating Accuracy



## **Unit 9: Framework for Applying Value Engineering in Projects:**

- What is Value Engineering? Why is it important?
- Defining Value Engineering concepts and principles
- Purpose of Value Engineering and Value Analysis
- Strengths and Weaknesses of Value Engineering
- How and When is Value Engineering applied?
- IT Project definition and initiation
- Project scope and charter development
- Identifying relationships between Value, Cost and Worth
- Initiating Value Engineering Process
- Overview of Different Value Engineering Phases
- The Information Phase - steps and procedures
- Developing Value Engineering Job Plan

## **Unit 10: The Function Analysis Phase - Expressing Project Functional Needs and Constraints:**

- The need for Function Analysis of the projects
- Defining project constraints - relationships and tradeoffs
- Conceptual project cost estimating techniques
- Function-Cost-Worth Analysis
- The Technical FAST Model to perform project value analysis
- Case Study
- Cross-Functional Project Team Approach

## **Unit 11: The Creative Phase - Inspiring Creativity in Your Project Team:**

- Creativity and Creative thinking within the project environment
- Individual VS Group thinking to improve the quality of project decisions
- Creativity techniques as applied to optimize project value
- Blocks to creativity within the project team
- Brainstorm project solutions
- Reaching consensus and leveraging the power of project team collaboration
- Project risk perception and identification
- Project prioritization process using the Delphi technique
- Output of the Creative Phase

## **Unit 12: The Evaluation Phase -Making Informed Project Decisions:**

- Project ideas screening
- Project evaluation methods
- Quantitative evaluation using objective data
- Subjective evaluation - project-related criteria weighting
- Revisiting project life-cycle costing analysis
- Incorporating market advancement in project economic analysis

- Effective Decision-making in a project environment
- Output of the Evaluation Phase

## **Unit 13: The Planning and Reporting Phases -Getting Results through Effective Communication:**

- Develop and assess VE proposals to optimize project value
- Reporting VE findings to Senior Management and project stakeholders
- Mastering oral presentation techniques & interpersonal skills
- Incorporating VE into the project phases
- Integrating VE with Continuous Improvement Techniques



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