



Project Decision Analysis and Risk Management

Sound project decisions require a comprehensive analysis of project costs, benefits, risks, and other factors (both objective and subjective) that may potentially affect project outcomes. This 3-day course will discuss objective, systematic, and practical methods to deal with decision-making under uncertainty. The goal of the course is for each participant in the capital project process to understand the fundamentals of decision analysis and the closely related topic of risk management.

Day 1

Day 1 provides an overview of decision analysis and decision theory. The course will focus on developing an understanding of the decision process. The various dimensions that affect our organization's attitude towards risk will be discussed, and how it affects decision policies. How to define the potential alternatives to a problem or opportunity, identify the key drivers affecting our decision, and how to effectively assess between competing alternatives to maximize value in our decisions will be addressed.

-) **Introduction to Decision Analysis**
 - **Decision Theory**
 - **Decisions versus Outcomes**
 - **Elements of High-Quality Decisions**
 - **Establishing the Decision Framework**
 - **Determining Viable Alternatives**
 - **Gathering Meaningful and Reliable Information**
 - **Establishing Decision Characteristics and Variables**
 - **Developing Decision-Making Models**
 - **Commitment to Action**
-) **Developing Decision Policies**
 - **Dimensions of Decision-Making**
 - **Objectivity**
 - **Time Value of Money**
 - **Risk Attitude**
-) **Decision-Making Process**
 - **Plan for Decision-Making**
 - **Developing Deterministic Decision Models**
 - **Identification of the Problem or Opportunity**
 - **Identification of Alternatives and Options**
 - **Qualitative and Quantitative Decision Models**
 - **Decision Evaluation**
 - **Identification of Key Drivers**
 - **Probabilistic Modeling**
 - **Dealing with New Information**



Day 2

Day 2 begins with focusing on the issues of seeking team agreement for decisions, and ensuring implementation for our decisions. The related topic of risk management is introduced with a discussion about uncertainty and risk, including both threats and opportunities. This leads to discussions on how to prioritize risk through a qualitative assessment, and evaluate risks through a quantitative assessment.

-) **Decision Making Process (continued)**
 - **Obtaining Agreement**
 - **Formalize Team Agreement on the Selected Alternative**
 - **Develop and Document the Implementation Plan**
 - **Obtain Decision-Maker Approval**
 - **Implementation**
 - **Implementing the Approved Alternative**
 - **Continuous Improvement of the Decision-Making Process**
-) **Introduction to Risk Management**
 - **Principles of Risk Management**
 - **Definitional Issues for Uncertainty, Risk, and Opportunity**
 - **Risk Management as Value Management**
 - **Characteristics of Effective Risk Management**
-) **Risk Management Process**
 - **Plan for Risk Management**
 - **Understanding the Appetite for Risk**
 - **Risk Assessment**
 - **Risk Identification/Risk Registers**
 - **Qualitative Risk Analysis**
 - **Quantitative Risk Analysis**
 - **Risk Assessment Challenges**



Day 3

On Day 3 the course focuses on the strategies that can be employed to minimize the potential impact from threats, and maximize the potential value for opportunities. The course will discuss how to monitor and review risks throughout the project lifecycle. This course concludes with understanding the integration of both decision and risk management.

-) Risk Management Process (continued)**
 - **Risk Treatment**
 - **Strategies for Threats**
 -) Threat Avoidance**
 -) Threat Reduction**
 -) Threat Transfer**
 -) Threat Acceptance**
 -) Exercise #6 – Dealing with Threats**
 - **Strategies for Opportunities**
 -) Opportunity Exploitation**
 -) Opportunity Sharing**
 -) Opportunity Enhancement**
 -) Opportunity Acceptance**
 -) Exercise #7 – Dealing with Opportunities**
 - **Identifying Risk Owners**
 - **Risk Reporting**
 - **Risk Control**
 - **Risk Monitoring**
 - **Risk Review**
-) Integrating Decision and Risk Management**
 - **Decision-Making Under Uncertainty**