



## Agenda

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### Formalized and Systematic Risk Management Process for Complex Projects

**Instructor(s):** Esra Tepeli, PhD, PMP

**Length:** 3 days

**Prework:** None

**CEUs:** 2.1/see below for PDU breakdown

**Level:** Intermediate

**Training Topic:** Strategic Planning and Implementation

**Subtopics:** Risk Management, Business Analysis

#### Training Description:

Project risks can have negative impacts on project objectives, such as delay, cost overruns, and decreases in quality and security aspects, all of which can cause serious project failures. Risk management aims to identify possible causes of threats and opportunities, to assess them qualitatively and quantitatively, and to propose action plans for risks deemed critical in order to decrease the undesirable effects on project objectives.

Complex projects are affected by numerous risks and opportunities because of their complex organizational plan with a large number of stakeholders, complex planning with a long life cycle, complex resource management, technical issues, and particular environmental factors. This type of project may also present strategic importance for the project stakeholders. It is essential to identify and analyze the project risks and opportunities throughout the project life cycle and develop risk response planning in order to decrease the adverse risk effects. However, traditional methods are rather limited for managing the risks of complex and strategic projects.

In this training, a formalized and systematic risk management process is proposed for complex and strategic projects throughout the project life cycle. This process aims to systematically identify the risks and opportunities; assess the risk impacts in terms of cost, delay, quality, and safety; determine the critical risks; and develop action plans in order to mitigate, eliminate, or transfer the negative risk impacts. The process proposes a dynamic risk management approach in parallel with project management throughout the project life cycle, adapted to the evolving nature of the project. The risk assessment results are integrated into the project simulation with cost, time, quality, and safety risk impacts. An objective and reliable risk identification and assessment method is provided with a multidimensional project analysis, associated with the project planning, organizational structure, resources, and environmental factors. The model is designed and developed based on several case studies of complex projects and in partnership with the project practitioners to favor its use in real operation conditions and to ensure its efficiency by integrating the different perspectives of the project stakeholders for an effective risk management method. A user-friendly prototype interface has been developed to apply the process for real projects. The process is primarily developed for complex construction projects, but the model can be adapted to a specific type of complex and strategic project in different sectors. How it works in practice is illustrated through a case study of a public-private partnership (PPP) project in France.

#### Learning Objectives:

*Upon completion of this training, learners will be able to:*

- Define the features and the environmental factors of complex and strategic projects.
- Develop a formalized and systematic risk management process throughout the project life cycle.
- Model a multidimensional project analysis for identifying and assessing the risk and opportunity events for complex projects, proposing response planning.
- Integrate project management, risk management, and decision-making processes in a systematic approach, adapted to the evolving nature of complex projects.
- Illustrate a user-friendly prototype tool to apply the process in real operation conditions.

## AGENDA

This training is designed to help you answer the following questions:

### DAY 1

- Analysis of Complex Projects (180 minutes)
  - Life cycle and project planning features
  - Project stakeholders and organizational features
  - Resource management
  - Internal and external environmental factors (EEFs)
  - Project management and risk management keys and strategies
  - Strategic importance and strategic analysis
  - Decision-making keys and strategies
  - Success keys for reaching project objectives
  - Risk management objectives in a complex project environment
- Conventional or Traditional Risk Management Methods (120 minutes)
  - Existing or conventional risk management processes and principles, methods, and tools for identification, assessment, and mitigation of risks
  - Analysis of advantages, disadvantages, and limits in application to complex projects
- Need of a Formalized and Systematic Risk Management Approach in a Complex Project Environment in Order to: (90 minutes)
  - Integrate risk management into a formalized and systematic process
  - Achieve effective risk management in parallel with project management and adapted to the project life cycle
  - Achieve consistent risk identification, risk assessment and analysis, optimal risk allocation, and risk response planning throughout the project life cycle
  - Combine strategic decision-making and risk management in a systematic process
  - Introduce a dynamic vision of risk management adapted to the evolving nature of a complex project
- Group Discussions (30 minutes)

### DAY 2


- Presentation of the Architecture or General Model of the Formalized and Systematic Risk Management Process (45 minutes)
  - Model description
  - Process entities
  - Process running
- Analysis of the Project Complexity and Strategic Importance (30 minutes)
- Analysis of the Project Environmental Factors and Their Effects on the Project (30 minutes)
- Multidimensional Analysis of the Project Features Related to Organizational Management, Time Management, Resource Management, Contract Management, and Their Relationships (60 minutes)
- Development of the Multidimensional Modeling of Risk Management Process (MMRMP): (60 minutes)
  - Identification of risk and opportunity events for the entire project life cycle
  - Assessment of risk events with qualitative and quantitative probability and impact analysis
  - Evaluation of the progressive risk level of the project throughout the project life cycle
  - Proposition of risk responses
- Project Simulation Integrating Risk Evaluation Results With Time, Cost, Quality, and Security Aspects in a Dynamic Structure (45 minutes)
- Constitution of a Relational Database and Knowledgebase to Facilitate the Process Run, Adapted to Project Type and Contractual Frame (30 minutes)
  - Combination of project management, risk management, and decision-making processes
- Instantiating the Process Run With Project Analysis, Risk Identification and Analysis, and Project Simulation in a Dynamic Structure Throughout the Project Life Cycle (45 minutes)
- Group Discussions (30 minutes)

### DAY 3

- Implementation of the Multidimensional Modeling of Risk Management Process (MMRMP) Through an Operational Tool (30 minutes)
  - Presentation of the Operational Tool With the Model Description, Variables, Process Instantiation, Application, or Manipulation Steps for: (120 minutes)
    - Analysis of the project complexity
    - Strategic analysis and decision-making
    - Project analysis
    - Risk and opportunity identification, analysis, risk response planning
    - Iterative risk and project simulation
  - Use of the Operational Tool in the Key Moments Through the Project Life Cycle (75 minutes)
- Application of the Process on the Case Studies of Complex and Strategic Projects (120 minutes)
    - Presentation of the projects
    - Multidimensional project analysis
    - Formalized and systematic risk management
    - Process instantiation for identifying and assessing the project risks and opportunities
    - Proposition of response plans
    - Project simulation with time, cost, quality, and security aspects
    - Results
    - Discussions
    - Feedback from the project stakeholders about the use of operational tools
  - Conclusion and Perspectives (45 minutes)
  - Group Discussions (30 minutes)

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	Technical	Leadership	Strategic	Total
<b>CAPM® / PMP® / PgMP®</b>	15	0	6	21.00
<b>PMI-ACP® / Agile*</b>	0	0	6	6.00
<b>PMI-SP®</b>	0	0	6	6.00
<b>PMI-RMP®</b>	15	0	6	21.00
<b>PfMP®</b>	0	0	6	6.00
<b>PMI-PBA®</b>	0	0	6	6.00



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