ROME ITALY CHAPTER

L'Eccellenza in Te stesso
ed in quello che Fai

PMI Risk Management Professional (PMI-RMP®) - Practice Standard and Certification Overview

Sante Torino PMI-RMP®, IPMA Level B®

– *Head of Risk Management Major Programmes, Selex ES / Land&Naval Systems Division*

Selex ES

ROME ITALY CHAPTER

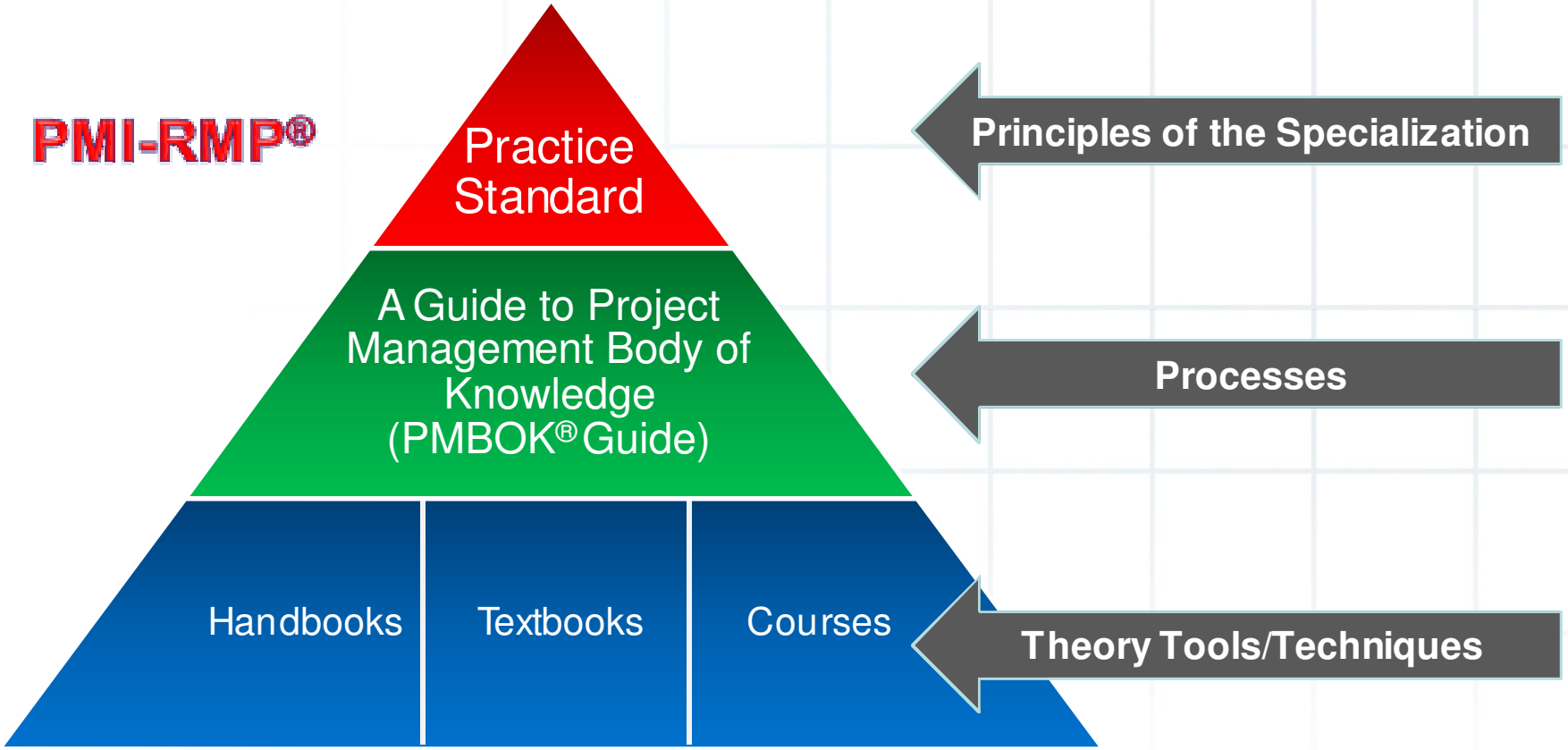
L'Eccellenza in Te stesso
ed in quello che Fai

Summary

- The PMI Practice Standard for Project Risk Management
- The Project Risk Management Certification PMI-RMP®
- Focus on competences for the Project Risk Manager (role)

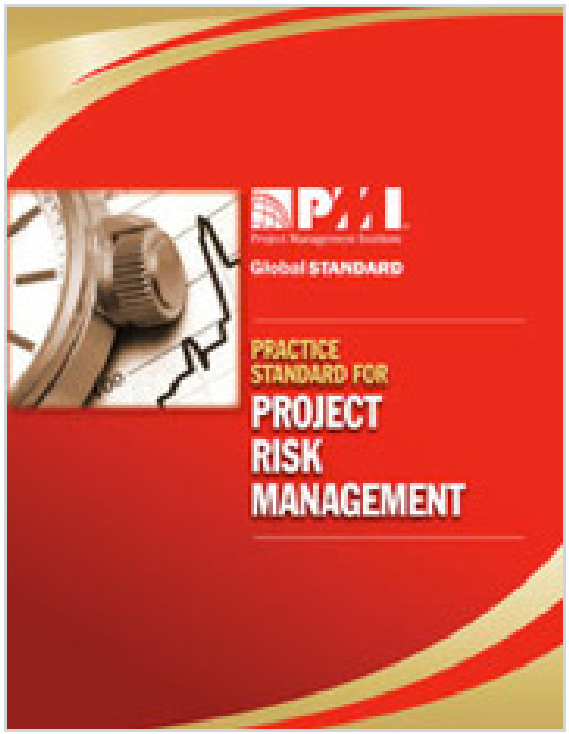
ROME ITALY CHAPTER
L'Eccellenza in Te stesso
ed in quello che Fai

Hierarchy of PMI Project Risk Management Resources



ROME ITALY CHAPTER
L'Eccellenza in Te stesso
ed in quello che Fai

The PMI-RMP® Standard – major contents



- Project Risk Management Principles and Concepts
- The Project Risk Management Process
  - Plan Risk Management
  - Identify Risks
  - Perform Qualitative Analysis
  - Perform Quantitative Analysis
  - Plan Risk Responses
  - Monitor and Control Risks
- Tools, Techniques and Templates for Project Risk Management

ROME ITALY CHAPTER

L'Eccellenza in Te stesso
ed in quello che Fai

The PMI-RMP® *vs* ISO standards

ISO 31000
Risk management — Principles and guidelines

ISO

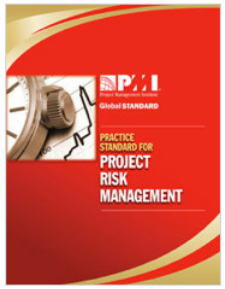
ISO IEC 31010
Risk management — Risk assessment techniques

ISO | IEC

- Project Risk Management Principles and Concepts
- The Project Risk Management Process
  - Plan Risk Management
  - Identify Risks
  - Perform Qualitative Analysis
  - Perform Quantitative Analysis
  - Plan Risk Responses
  - Monitor and Control Risks
- Tools, Techniques and Templates for Project Risk Management

ROME ITALY CHAPTER
L'Eccellenza in Te stesso
ed in quello che Fai

The PMI-RMP® Standard – major contents



1. ***Purpose & Objectives***
2. ***Critical Success Factors***
3. ***Tools & Techniques***
4. ***Documenting the result***

Map of Techniques, Examples and Templates for each process steps

- Project Risk Management Principles and Concepts
- The Project Risk Management Process
  - Plan Risk Management
  - Identify Risks
  - Perform Qualitative Analysis
  - Perform Quantitative Analysis
  - Plan Risk Responses
  - Monitor and Control Risks
- Tools, Techniques and Templates for Project Risk Management

ROME ITALY CHAPTER

L'Eccellenza in Te stesso ed in quello che Fai

Map of Tool & Techniques vs Process steps

Risk Management Planning	Identify Risks		Perform Qualitative Risk Analysis	Perform Quantitative Risk Analysis	Plan Risk Response	Monitoring and Control Risks
Planning Meetings and Analysis	Historical Review (PAST)	Industry Knowledge base	Estimating Techniques	Expected Monetary Value (EMV)	Industry Knowledge base	Critical Chain Project Management (CCPM)
		Post Project Review / Lessons Learned /Historical Review	Post Project Review / Lessons Learned /Historical Review	Post Project Review / Lessons Learned /Historical Review	Post Project Review / Lessons Learned /Historical Review	Reserve Analysis
		Prompt Lists	Probability and Impact Matrix	FMEA-FMECA / Fault Tree Analysis	Check Lists	Risk Audits
		Questionnaires	Analytic Hierarchy Process (AHP)	Decision Tree Analysis	Brainstorming	Risk Reassessment
		Risk Breakdown Structure (RBS)	Root Cause Analysis	System Dynamics	Decision Tree Analysis	Status Meetings
		Check Lists	Affinity Diagrams	Monte Carlo Simulations	Contingency Planning	Trend Analysis
	Current Assessment (PRESENT)	Assumptions and Constraints Analysis			Contingency Reserve Estimation	Variance analysis
		Document Review			Critical Chain Project Management (CCPM)	
		FMEA-FMECA / Fault Tree Analysis			Delphi Technique	
		Root Cause Analysis			Interviews	
		Influence Diagrams			Nominal Group Technique	
		System Dynamics			Quantitative Risk Analysis	
		Force Field Analysis			Force Field Analysis	
		WBS Review			Multi-Criterion Selection Technique	
	Creative Technique (FUTURE)	Brainstorming			Expected Monetary Value (EMV)	
		Interviews			Root Cause Analysis	
		Delphi Technique			Scenario Analysis	
		Nominal Group Technique			Prompt Lists	
		SWOT Analysis				
		Cause-Effect Diagrams (Ishikawa)				

ROME ITALY CHAPTER
L'Eccellenza in Te stesso
ed in quello che Fai

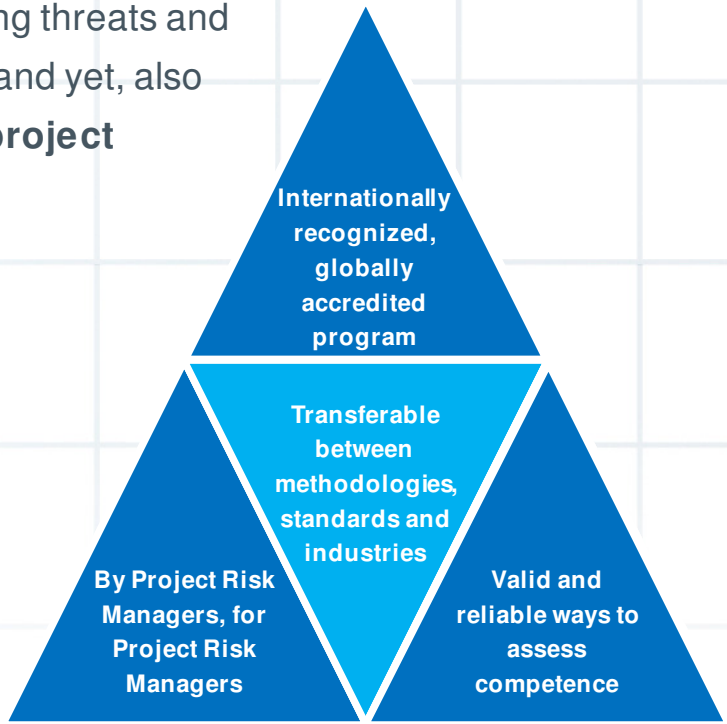
Summary

- The PMI Practice Standard for Project Risk Management
- The Project Risk Management Certification PMI-RMP®
- Focus on competences for the Project Risk Manager (role)

ROME ITALY CHAPTER
L'Eccellenza in Te stesso
ed in quello che Fai

Overview of the PMI-RMP Credential

- The PMI-RMP credential acknowledges the **individual's unique expertise** on the project team while demonstrating the recognition and value the role provides to the project management profession.
- In this role, an individual has more competence in the **specialized area** of assessing and identifying **project risks** while mitigating threats and capitalizing on opportunities than a general practitioner and yet, also maintains a **basic level of competence** in all areas of **project management**.
- Employers can trust credential holders to possess the **skills, knowledge and experience** to contribute directly to their crucial projects. This global credential also supports individuals in meeting organizational needs; organizations can be confident in hiring capable, experienced project risk management practitioners as well as having a means for a career development path.

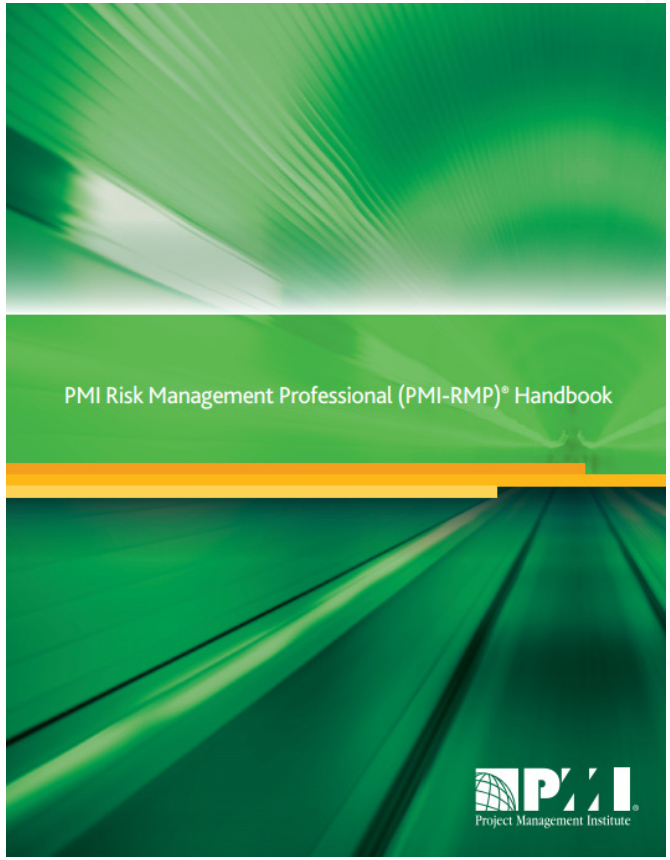


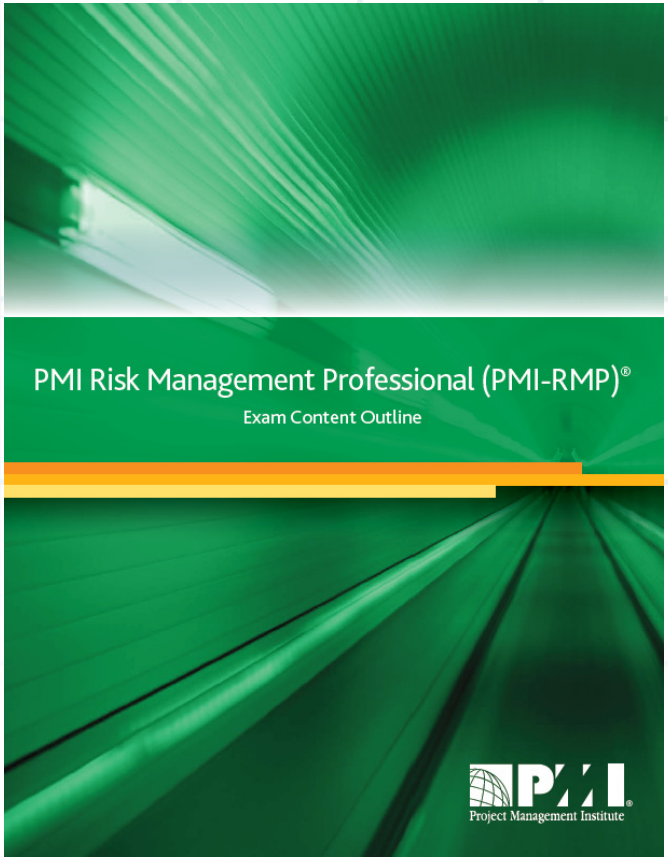
ROME ITALY CHAPTER

L'Eccellenza in Te stesso
ed in quello che Fai

PMI-RMP Credential

Complete details regarding the PMI-RMP **eligibility requirements** and **project risk knowledge domains**, can be found on-line in the **Handbook** and **Exam content Outline** (www.pmi.org > Career Development).





ROME ITALY CHAPTER
L'Eccellenza in Te stesso
ed in quello che Fai

PMI-RMP Eligibility Requirements

Project Risk Management Experience	Experience Period	Project Risk Management Education (contact hours)
4500 h (secondary diploma) **3500 h** (bachelor's degree / laurea) spent in the specialized area of Project Risk Management	last **5** consecutive years	**40 h** (secondary diploma) **30 h** (bachelor's degree / laurea) in the specialized area of Project Risk Management

The PMI-RMP Role Delineation states that candidates for the credential:

- Can assess(*) project risks
- Be able to mitigate threats and capitalize on opportunities
- Should be able to communicate risks to the project team

(*) **Risk assessment is the** overall process of **risk identification, risk analysis and risk evaluation [ISO 31000]**

ROME ITALY CHAPTER
L'Eccellenza in Te stesso
ed in quello che Fai

PMI-RMP Examination Information

Examination Questions	Allotted examination time
170 (150 scored)	**3,5 h**

- **Exam typology:** Multiple-choice questions (4 answers per each question, 1 only right)
- **Exam language:** English only
- **PDUs/CCR cycle:** **30** PDUs in specialized area of project risk management
- Questions refer to Project Risk Management domains, contained in the **PMI-Risk Management Professional Examination Specification**

Initial Map of Domains

	Domain	Percentage of Items on Test
1	Risk Governance	17%
2	Risk Communication	27%
3	Risk Analysis	30%
4	Risk Response Planning	26%
	Total	100%

ROME ITALY CHAPTER
L'Eccellenza in Te stesso
ed in quello che Fai

PMI-RMP® Exam Content Outline (current domains)

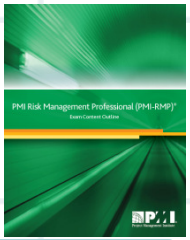
	Domain	Percentage of Items on Test
1	Risk Strategy and Planning	19–20%
2	Stakeholder Engagement	19–20%
3	Risk Process Facilitation	25–28%
4	Risk Monitoring and Reporting	19–20%
5	Perform Specialized Risk Analyses	14–16%
	Total	100%

Current Project Risk Management Domains

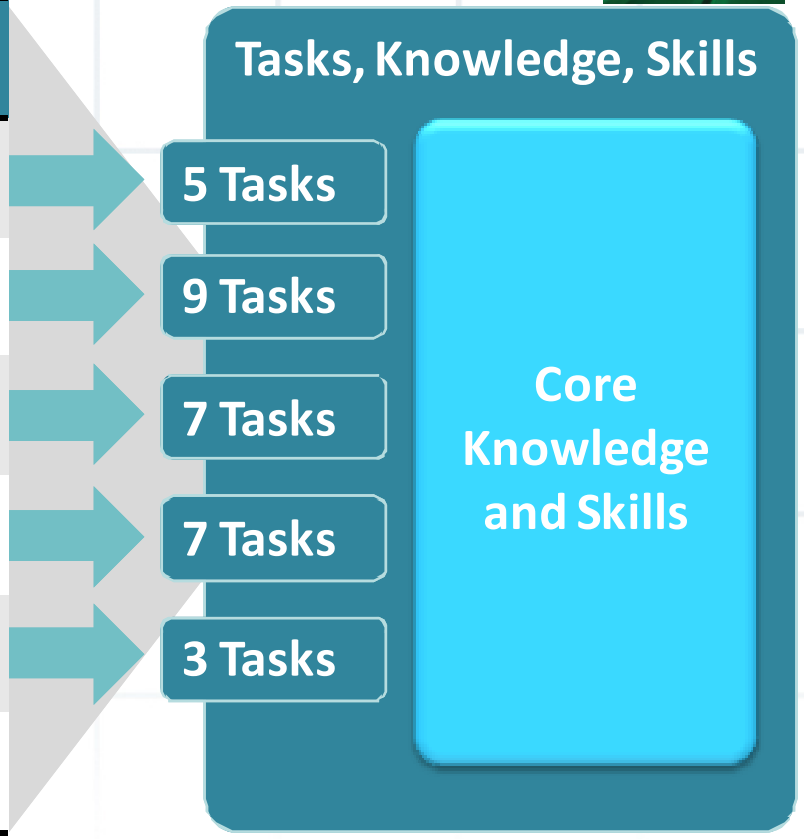
(Role Delineation Study)

ROME ITALY CHAPTER
L'Eccellenza in Te stesso
ed in quello che Fai

PMI-RMP® Exam Content Outline (current domains)



	Domain	Percentage of Items on Test
1	Risk Strategy and Planning	19–20%
2	Stakeholder Engagement	19–20%
3	Risk Process Facilitation	25–28%
4	Risk Monitoring and Reporting	19–20%
5	Perform Specialized Risk Analyses	14–16%
	Total	100%



ROME ITALY CHAPTER
L'Eccellenza in Te stesso
ed in quello che Fai

PMI-RMP® Exam Content Outline (current domains)

	Domain	Percentage of Items on Test
1	Risk Strategy and Planning	19–20%
2	Stakeholder Engagement	19–20%
3	Risk Process Facilitation	25–28%
4	Risk Monitoring and Reporting	19–20%
5	Perform Specialized Risk Analyses	14–16%
	Total	100%

~ 30%
Risk Analysis specific related questions
(major correspondences)

ROME ITALY CHAPTER
L'Eccellenza in Te stesso
ed in quello che Fai

PMI-RMP® Exam Content Outline (current domains)

	Domain	Percentage of Items on Test
1	Risk Strategy and Planning	19–20%
2	Stakeholder Engagement	19–20%
3	Risk Process Facilitation	25–28%
4	Risk Monitoring and Reporting	19–20%
5	Perform Specialized Risk Analyses	14–16%
	Total	100%

~ 25 specific questions on domain tasks

ROME ITALY CHAPTER
L'Eccellenza in Te stesso
ed in quello che Fai

Domain 5: PERFORM SPECIALIZED RISK ANALYSES (14–16%)

(Tasks vs Data Analysis)

Task 1

- Evaluate the attributes of identified risks using advanced quantitative tools and specialized qualitative techniques in order to estimate overall risk exposure of the project.

Task 2

- Analyze risk data produced during the project using statistical analyses and expert judgment in order to determine strengths and weaknesses of risk strategy and processes and recommend process improvements when indicated

Task 3

- Perform specialized risk analysis using advanced tools and techniques in order to support stakeholder decision making for the project.

ROME ITALY CHAPTER
L'Eccellenza in Te stesso
ed in quello che Fai

Domain 5: PERFORM SPECIALIZED RISK ANALYSES (14–16%)

Knowledge

- **Advanced risk identification tools and techniques**
  (e.g.: force field analysis, scenario planning, futures thinking, Delphi groups)
- **Advanced quantitative risk analysis tools and techniques**
  (e.g.: integrated cost/schedule analysis, advanced Monte Carlo analysis, system dynamics, bow-tie analysis, analytical hierarchy process, risk-based earned value analysis, risk-based critical chain analysis, and multi-factor regression analysis, modeling techniques, advanced risk metric analysis [including statistical process control])
- **Tools and techniques for identifying and analyzing overall project risk**
  (e.g: risk efficiency index, risk tolerance analysis, risk reserve analysis, risk metric trend analysis, risk taxonomy, risk connectivity analysis, Monte Carlo analysis against overall project objectives, project risk surveys, correlation analysis)
- **Basic and advanced statistics**
- **Estimation tools and techniques to support risk decision making**
  (e.g.: prioritization, cost-benefit analysis, analogous, parametric, bottom-up)
- **Advanced theory of heuristics and other sources of cognitive bias**
- **Variance/Earned Value Analysis**

Skills

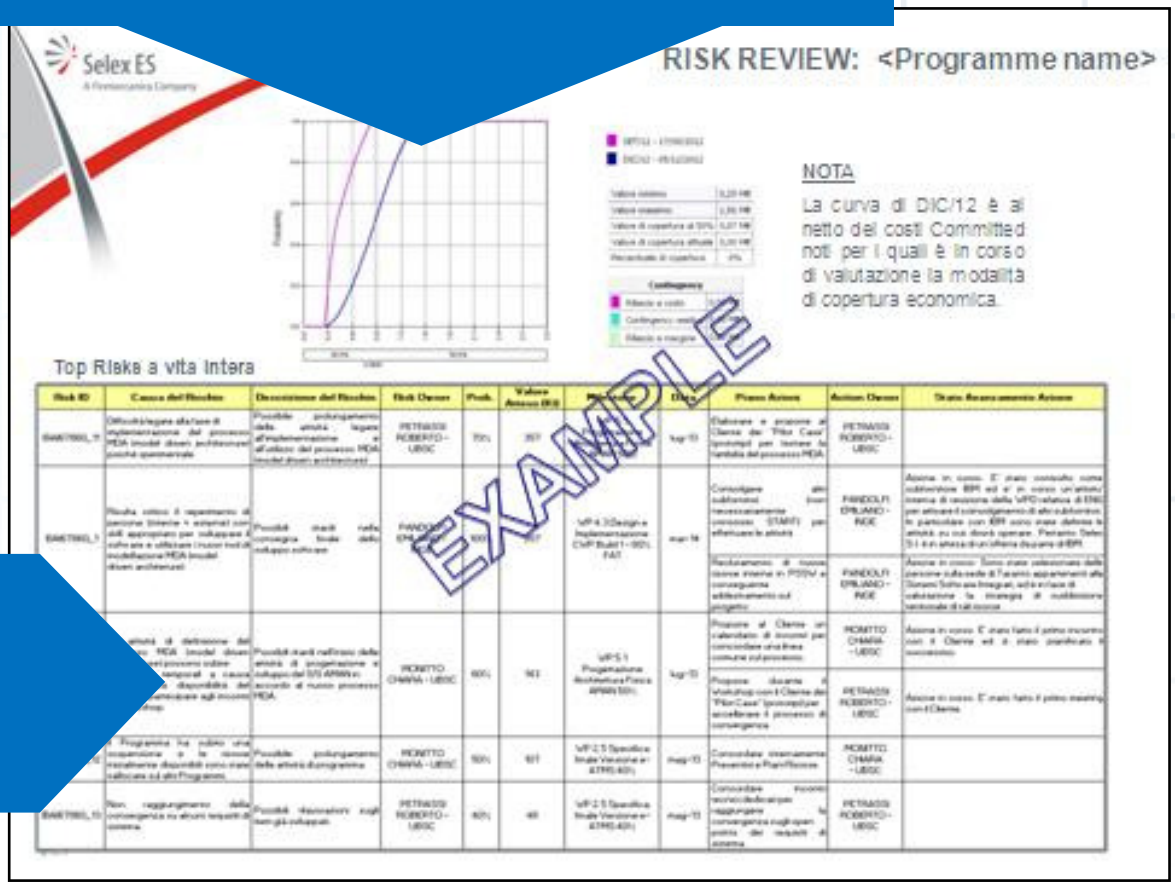
- **Converting qualitative information into risk data**
- **Building representative risk models**
- **Managing and interpreting quantitative and qualitative data**

ROME ITALY CHAPTER

L'Eccellenza in Te stesso
ed in quello che Fai

Example of Risk Analysis for Project Risks synthesis reporting

- Synthesis of the overall economic Project Risk (Monte Carlo S curve)
- Comparison with Contingency protection
- Overall Project Risk trend (multiple S curves)



- Top 5 Risks (ranking based on economic impact regression coefficient)
- Major mitigation Actions and relevant progress

ROME ITALY CHAPTER

L'Eccellenza in Te stesso
ed in quello che Fai

Domain 3: RISK PROCESS FACILITATION (25–28%)

(Tasks vs Data Analysis)

Task 1

- Apply risk assessment processes and tools to quantify stakeholder risk tolerances and determine risk levels.

Task 2

- Facilitate risk identification using a variety of techniques in order to enable the project team and stakeholders to understand and determine the risk exposure of the project.

Task 3

- Facilitate the project team's evaluation of the identified risks' attributes using qualitative and quantitative tools and techniques in order to prioritize the risks for response planning.

Task 4

- Facilitate the development of an aligned risk response strategy and related risk actions by risk owners from the information gathered during risk analysis in order to ensure timely and defined action when required.

Task 5

- Facilitate the formulation of project contingency reserve based on the risk exposure of the project in order to have the capability and resources to respond to realized risks.

Task 6

- Provide risk data to cost and schedule analysts/estimators to ensure that project risk is properly reflected in cost and schedule estimates for the project.

Task 7

- Use scenarios to validate potential risk responses and evaluate key dependencies and requirements in order to enhance the likelihood of project success.

ROME ITALY CHAPTER
L'Eccellenza in Te stesso
ed in quello che Fai

Domain 3: RISK PROCESS FACILITATION (25–28%)

Knowledge

- **Basic risk identification tools and techniques for threats / opportunities** (e.g.: brainstorming, checklists, prompt lists, assumptions and constraints analysis, interviews, questionnaires, cause and effect analysis, SWOT analysis, document review, affinity diagrams, lessons-learned review from similar projects)
- **Basic qualitative risk analysis tools and techniques** (e.g.: probability-impact matrices, risk scoring, Risk Breakdown Structure analysis, root cause analysis, Pareto prioritization analysis, risk metric trend analysis)
- **Basic quantitative risk analysis tools and techniques** (e.g.: Monte Carlo analysis, decision trees, FMEA/FMECA/Fault Tree analysis, sensitivity analysis)
- **Heuristics and other dynamic sources of cognitive biases and their associated effects on risk perception and behavior**
- **Risk response strategy types**
- **Contingency management tools and techniques**
- **Risk monitoring and control techniques**
- **Group decision making**
- **Group creativity** (e.g.: brainstorming, nominal group technique, Delphi technique, idea/mind mapping, affinity diagrams)

Skills

- **Using analytical software tools for project risk management**
- **Managing teams in multicultural environments**
- **Estimating probability and impact of identified risks**

ROME ITALY CHAPTER

L'Eccellenza in Te stesso
ed in quello che Fai

Summary

- The PMI Practice Standard for Project Risk Management
- The Project Risk Management Certification PMI-RMP®
- Focus on competences for the Project Risk Manager (role)

ROME ITALY CHAPTER
L'Eccellenza in Te stesso
ed in quello che Fai

ALL DOMAINS - Core Knowledge and Skills @PMI-RMP®

Knowledge

- **Risk Management processes, frameworks, and theory** [PMI-RMP Standard]
- **Project management theory, methodologies, and practice** [*PMBOK® Guide]*
- **Risk principles and guidelines** [ISO 31000]
- **Communication** tools, techniques, models, and channels
- **Facilitation** tools and techniques
- **Negotiation** tools and techniques
- **Leadership theory** as it relates to risk management
- **Organizational theory** as it relates to risk management
- **Risk taxonomy**
- **PMI Code of Ethics** and Professional Conduct

Skills

- **Effective** oral, graphical, and written **presentation**
- **Tailoring information** to all levels of **stakeholders**
- **Conducting effective interviews**
- **Gathering, managing, analyzing, and validating data**
- **Problem solving**
- **Active listening**
- **Conflict resolution**
- **Expressing complex and abstract information**
- **Influencing** without authority
- **Coaching and mentoring**

ROME ITALY CHAPTER

L'Eccellenza in Te stesso
ed in quello che Fai

Individual approach:
Risk Manager Personal Winning Skills in IPTs

- Proven & recognized competence
- Strong Communication and Team playing skills
- Systemic approach
- Analytical approach and ability to synthesize
- Provocative approach
- Problem solving skills
- Emotional intelligence and empathy
- Flexibility
- Innovative and Lateral Thinking

ROME ITALY CHAPTER

L'Eccellenza in Te stesso
ed in quello che Fai

Individual approach: Risk Manager role *vs* Team Leader role

Main common points:

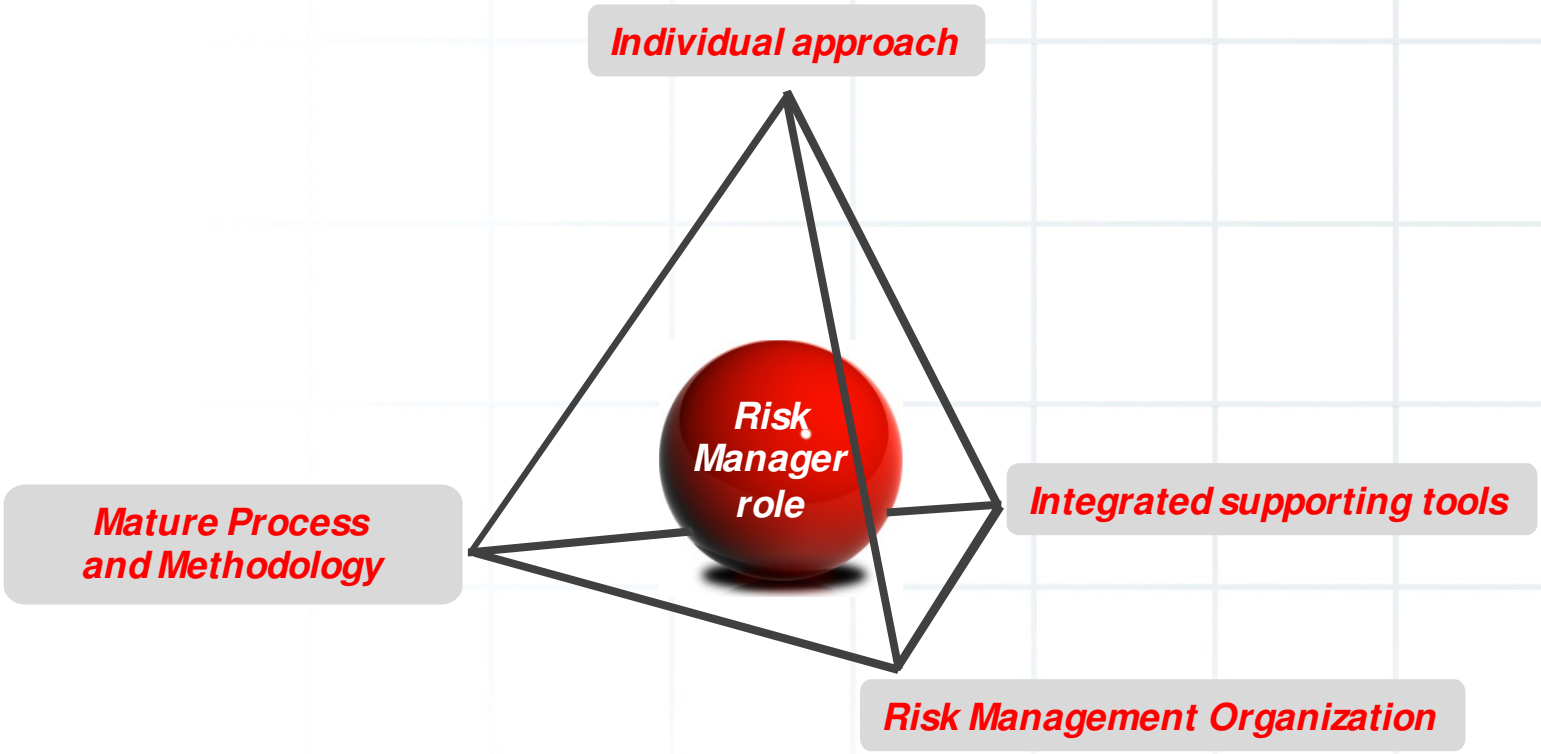
- Systemic (Strategic & Tactical) view
- "Left Shift" thinking
- Governance of the project changes (identification of new risks/actions)
- Best solution, minimizing threats and exploiting opportunities

Main complementary points:

- Risk synthesis
- Cross analysis
- Simulation of different (future) scenarios
- Lateral thinking assessment
- Solutions from other projects to risks (Knowledge based risk assessment)

ROME ITALY CHAPTER
L'Eccellenza in Te stesso
ed in quello che Fai

….. but not only individual approach:



In order to manage Project Complexity within the Integrated Project Team

ROME ITALY CHAPTER

L'Eccellenza in Te stesso
ed in quello che Fai

THANK YOU FOR YOUR ATTENTION