

IT PROJECT MANAGEMENT

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Knowledge Areas	Project Management Process Groups				
	Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring and Controlling Process Group	Closing Process Group
4. Project Integration Management	4.1 Develop Project Charter	4.2 Develop Project Management Plan	4.3 Direct and Manage Project Work 4.4 Manage Project Knowledge	4.5 Monitor and Control Project Work 4.6 Perform Integrated Change Control	4.7 Close Project or Phase
5. Project Scope Management		5.1 Plan Scope Management 5.2 Collect Requirements 5.3 Define Scope 5.4 Create WBS		5.5 Validate Scope 5.6 Control Scope	
6. Project Schedule Management		6.1 Plan Schedule Management 6.2 Define Activities 6.3 Sequence Activities 6.4 Estimate Activity Durations 6.5 Develop Schedule		6.6 Control Schedule	
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9. Project Resource Management		9.1 Plan Resource Management 9.2 Estimate Activity Resources	9.3 Acquire Resources 9.4 Develop Team 9.5 Manage Team	9.6 Control Resources	
10. Project Communications Management		10.1 Plan Communications Management	10.2 Manage Communications	10.3 Monitor Communications	
11. Project Risk Management		11.1 Plan Risk Management 11.2 Identify Risks 11.3 Perform Qualitative Risk Analysis 11.4 Perform Quantitative Risk Analysis 11.5 Plan Risk Responses	11.6 Implement Risk Responses	11.7 Monitor Risks	
12. Project Procurement Management		12.1 Plan Procurement Management	12.2 Conduct Procurements	12.3 Control Procurements	
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Project Risk Management

- ▶ Includes the processes of conducting risk management planning, identification, analysis, response planning, response implementation and monitoring risk on a project.
- ▶ Objective is to increase the probability and/or impact of positive risks and to decrease the probability and/or impact of negative risks, in order to optimize the chances of project success.
- ▶ Processes
 - ▶ Plan Risk Management
 - ▶ Identify Risks
 - ▶ Perform Qualitative Risk Analysis
 - ▶ Perform Quantitative Risk Analysis
 - ▶ Plan Risk Responses
 - ▶ Implement Risk Responses
 - ▶ Monitor Risks
- ▶ Key Concepts
 - ▶ Individual Project Risk is an uncertain event or condition that, if it occurs, has a positive or negative effect on one or more project objectives.
 - ▶ Overall project risk is the effect of uncertainty on the project as a whole, arising from all sources of uncertainty.
 - ▶ Includes individual risks.

Project Risk Management

- ▶ Risk management aims to exploit or enhance positive risks (opportunities) while avoiding or mitigating negative risks (threats).
- ▶ Unmanaged risks may result in issues or problems such as:
 - ▶ Delay
 - ▶ Cost overruns
 - ▶ Performance shortfall
 - ▶ Loss of reputation.
- ▶ Identified opportunities can lead to:
 - ▶ Reduced time and cost
 - ▶ Improved performance
 - ▶ Improved reputation.
- ▶ Management of overall project risk aims to keep project risk exposure within an acceptable range by
 - ▶ reducing drivers of negative variation
 - ▶ Promoting drivers of positive variation
 - ▶ Maximising the probability of achieving overall project objectives.

Project Risk Management

- ▶ Risk threshold
 - ▶ Measurable risk thresholds that reflect the risk appetite of the organization and project stakeholders.
 - ▶ Express the degree of acceptable variation around a project objective.
 - ▶ Explicitly stated and communicated to the project team.
- ▶ Trends & Emerging Practices
 - ▶ Non-event risks
 - ▶ Variability risk - when uncertainty exists about some key characteristics of a planned event or activity or decision.
 - ▶ Unseasonal weather during construction phase
 - ▶ Ambiguity risk - when uncertainty exists about what might happen in the future.
 - ▶ Future developments in regulatory frameworks
 - ▶ Project Resilience
 - ▶ Integrated risk management
- ▶ Tailoring Considerations
 - ▶ Project Size
 - ▶ Project complexity
 - ▶ Project importance
 - ▶ Development

Project Risk Management

▶ Plan Risk Management

- ▶ The process of defining how to conduct risk management activities for a project.
- ▶ It ensures that the degree, type and visibility of risk management are proportionate to both risks and the importance of the project to the organization and other stakeholders.
- ▶ It includes things like:
 - ▶ itemizing the risk categories (market, procurement, resources, etc.)
 - ▶ determining the timing and procedures for reassessing risks,
 - ▶ and definitions of risk probability and impact.
- ▶ Tools and Techniques
 - ▶ Expert judgment
 - ▶ Data analysis
 - ▶ Stakeholder register
 - ▶ Meetings
- ▶ Outputs
 - ▶ Risk management plan

Project Risk Management

► Identify Risks

- The process of identifying individual project risks as well as sources of overall project risk and documenting their characteristics.
- Key benefit is documentation of existing individual project risks and the sources of overall project risk.
- Participants may include:
 - Project Manager
 - Project Team
 - Project Risk Specialist
 - Customers
 - Subject matter experts
 - End users
 - Other project managers
 - Operations managers
 - Stakeholders
 - Risk management experts
- Consistent format should be used for recording risks to ensure each risk is understood clearly and unambiguously.

Project Risk Management

▶ Identify Risks

▶ Tools and Techniques

- ▶ Expert judgment
- ▶ Data gathering
 - ▶ Brainstorming
 - ▶ Checklists
 - ▶ Interviews
- ▶ Data analysis
 - ▶ Root cause analysis
 - ▶ Assumption and constraint analysis
 - ▶ SWOT analysis
- ▶ Document analysis
- ▶ Interpersonal and team skills
 - ▶ Facilitation
- ▶ Prompt lists
- ▶ Meetings

Project Risk Management

▶ Identify Risks

▶ Outputs

- ▶ Risk register
- ▶ Risk report
- ▶ Project documents updates
 - ▶ Assumption log
 - ▶ Issue log
 - ▶ Lessons learned register

Project Risk Management

▶ Perform Qualitative Risk Analysis

- ▶ The process of prioritizing individual project risks for further analysis or action by assessing their probability of occurrence and impact as well as other characteristics.
- ▶ It focuses efforts on high-priority risks i.e. Risk prioritization.
- ▶ Assesses the priority of identified risks using their probability of occurrence, the corresponding impact on project objectives if the risks occur and other factors.
 - ▶ Assessment is subjective because it is based on perceptions of risk by the project team and other stakeholders.
 - ▶ Effective assessment requires explicit identification and management of the risk attitudes of key participants.
 - ▶ Attention should be paid to identifying bias and correcting it
 - ▶ Correcting bias is a key role of the facilitator of this process
 - ▶ Identifies risk owner for each risk who will be responsible for planning an appropriate risk response and ensure its implementation.
- ▶ Lays the foundation for the Perform Quantitative Risk Analysis.
- ▶ Risk has two components - probability of occurrence and impact.
 - ▶ each of these factors should be prioritized on a scale of, say, 1-10.
 - ▶ High-medium-low works well too.
 - ▶ Each risk on the risk register is analysed and a ranking assigned to the two underlying variables.
 - ▶ an overall risk priority ranking is found (by multiplication of the two rankings)

Project Risk Management

- ▶ Perform Qualitative Risk Analysis
 - ▶ Tools and Techniques
 - ▶ Expert judgment
 - ▶ Data gathering
 - ▶ Interviews
 - ▶ Data analysis
 - ▶ Risk data quality assessment
 - ▶ Risk probability and impact assessment
 - ▶ Assessment of other risk parameters
 - ▶ Interpersonal and team skills
 - ▶ Facilitation
 - ▶ Risk categorization
 - ▶ Data representation
 - ▶ Probability and impact matrix
 - ▶ Hierarchical charts
 - ▶ Meetings

Project Risk Management

- ▶ Perform Qualitative Risk Management
 - ▶ Outputs
 - ▶ Project documents updates
 - ▶ Assumption log
 - ▶ Issue log
 - ▶ Risk register
 - ▶ Risk report

Project Risk Management

- ▶ Perform Quantitative Risk Analysis
 - ▶ The process of numerically analysing the combined effect of identified individual project risks and other sources of uncertainty on overall project objectives.
 - ▶ It quantifies overall project risk exposure.
 - ▶ Provide additional quantitative risk information to support risk response planning.
 - ▶ Tools and Techniques
 - ▶ Expert judgment
 - ▶ Data gathering
 - ▶ Interviews
 - ▶ Interpersonal and team skills
 - ▶ Facilitation
 - ▶ Representations of uncertainty
 - ▶ Data analysis
 - ▶ Simulations
 - ▶ Sensitivity analysis
 - ▶ Decision tree analysis
 - ▶ Influence diagrams

Project Risk Management

- ▶ Perform Quantitative Risk Analysis
 - ▶ Outputs
 - ▶ Project documents updates
 - ▶ Risk report

Project Risk Management

► Plan Risk Responses

- The process of developing options, selecting strategies and agreeing on actions to address overall project risk exposure as well as to treat individual project risks.
- Identifies appropriate ways to address overall project risk and individual project risks.
- Allocates resources and inserts activities into project documents.
- Effective and appropriate risk responses can minimize individual threats, maximize individual opportunities and reduce overall project risk exposure.
- Unsuitable risk responses can have the converse effect.
- Risk responses should be appropriate, cost-effective, realistic within the project context, agreed upon by all parties involved and owned by a responsible person.
- Select optimal response from several options.
- Secondary risks are risks that arise as a direct result of implementing a risk response.
- A contingency reserve is allocated for time or cost.

Project Risk Management

▶ Plan Risk Responses

▶ Tools and Techniques

- ▶ Expert judgment
- ▶ Data gathering
 - ▶ Interviews
- ▶ Interpersonal and team skills
 - ▶ Facilitation
- ▶ Strategies for threats
- ▶ Strategies for opportunities
- ▶ Contingent response strategies
- ▶ Strategies for overall project risk
- ▶ Data analysis
 - ▶ Alternatives analysis
 - ▶ Cost-benefit analysis
- ▶ Decision making
- ▶ Multicriteria decision analysis

Project Risk Management

► Outputs

- Change requests
- Project management plan updates
 - Schedule management plan
 - Cost management plan
 - Quality management plan
 - Resource management plan
 - Procurement management plan
 - Scope baseline
 - Schedule baseline
 - Cost baseline
- Project documents updates
 - Assumption log
 - Cost forecasts
 - Lessons learned register
 - Project schedule
 - Project team assignments
 - Risk register
 - Risk report

Project Risk Management

► Implement Risk Responses

- The process of implementing agreed-upon risk response plans.
- It ensures that agreed-upon risk responses are executed as planned in order to address overall project risk exposure, minimize individual project threats and maximize individual project opportunities.
- Tools & Techniques
 - Expert judgment
 - Interpersonal and team skills
 - Influencing
 - Project management information system
- Outputs
 - Change requests
 - Project documents updates
 - Issue log
 - Lessons learned register
 - Project team assignments
 - Risk register
 - Risk report

Project Risk Management

▶ Monitor Risks

- ▶ The process of monitoring the implementation of agreed-upon risk response plans, tracking identified risks, and evaluating risk process effectiveness throughout the project.
- ▶ It enables project decisions to be based on current information about overall project risk exposure and individual project risks.
- ▶ Performance information generated determines if:
 - ▶ Implemented risk responses are effective
 - ▶ Level of overall project risk has changed
 - ▶ Status of identified individual project risks has changed
 - ▶ New individual project risks have arisen
 - ▶ Risk management approach is still appropriate
 - ▶ Project assumptions are still valid
 - ▶ Risk management policies and procedures are being followed
 - ▶ Contingency reserves for cost and schedule require modification
 - ▶ Project strategy is still valid.

Project Risk Management

- ▶ Monitor Risks
 - ▶ Tools and Techniques
 - ▶ Data analysis
 - ▶ Technical performance analysis
 - ▶ Reserve analysis
 - ▶ Audits
 - ▶ Meetings
 - ▶ Outputs
 - ▶ Work performance information
 - ▶ Change requests
 - ▶ Project management plan updates
 - ▶ Any component
 - ▶ Project documents updates
 - ▶ Assumption log
 - ▶ Issue log
 - ▶ Lessons learned register
 - ▶ Risk register
 - ▶ Risk report
 - ▶ Organizational process assets updates

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Project Procurement Management

- ▶ Includes processes necessary to purchase or acquire products, services, or results needed from outside the project team.
- ▶ Includes management and control processes required to develop and administer agreements such as contracts, purchase orders, memoranda of agreements (MOAs) or internal service level agreements (SLAs).
- ▶ Processes
 - ▶ Plan Procurement Management
 - ▶ Conduct Procurements
 - ▶ Control Procurements
- ▶ Key Concepts
 - ▶ There can be significant legal obligations and penalties tied to the procurement process.
 - ▶ Usually involves agreements describing the relationship between two parties - buyers and seller.
- ▶ Trends & Emerging Practices
 - ▶ Advance in tools (online and Software)
 - ▶ More advanced risk management
 - ▶ Changing contracting processes
 - ▶ Logistics and supply chain management

Project Procurement Management

- ▶ Trends & Emerging Practices
 - ▶ Technology and stakeholder relations
 - ▶ Trial engagements
- ▶ Tailoring Considerations
 - ▶ Complexity of procurement
 - ▶ Physical location
 - ▶ Governance and regulatory environment
 - ▶ Availability of contractors

Project Procurement Management

▶ Plan Procurement Management

- ▶ The process of documenting project procurement decisions, specifying the approach and identifying potential sellers.
- ▶ It determines whether to acquire goods and services from outside the project and if so, what to acquire as well as how and when to acquire it.
- ▶ Roles and responsibilities are defined
- ▶ Works hand-in-hand with the Develop Schedule and Estimate Activity Resources processes.
- ▶ Tools & Techniques
 - ▶ Expert judgment
 - ▶ Data gathering
 - ▶ Market research
 - 1. Data analysis
 - ▶ Make-or-buy analysis
 - 2. Source selection analysis
 - ▶ Meetings