

PROJECT MANAGEMENT PROCESSES

INITIATING

PLANNING

EXECUTING

MONITORING & CONTROLLING

CLOSING

4.1. DEVELOP PROJECT CHARTER

- 1. Project statement of work
- 2. Business case
- 3. Agreements
- 4. Enterprise environmental factors
- 5. Organizational process assets

- 1. Expert judgment
- 2. Facilitation techniques

- 1. Project charter

4.2. DEVELOP PROJECT MANAGEMENT PLAN

- 1. Project charter
- 2. Outputs from other processes
- 3. Enterprise environmental factors
- 4. Organizational process assets

- 1. Expert judgment
- 2. Facilitation techniques

- 1. Project management plan

5.1. PLAN SCOPE MANAGEMENT

- 1. Project management plan
- 2. Project charter
- 3. Enterprise environmental factors
- 4. Organizational process assets

- 1. Expert judgment
- 2. Analytical techniques
- 3. Meetings

- 1. Scope management plan
- 2. Requirements management plan

6.1. PLAN SCHEDULE MANAGEMENT

- 1. Project management plan
- 2. Analytical techniques
- 3. Enterprise environmental factors
- 4. Organizational process assets

- 1. Expert judgment
- 2. Analytical techniques
- 3. Meetings

- 1. Schedule management plan

7.1. PLAN COST MANAGEMENT

- 1. Project management plan
- 2. Project charter
- 3. Enterprise environmental factors
- 4. Organizational process assets

- 1. Expert judgment
- 2. Analytical techniques
- 3. Meetings

- 1. Cost management plan

8.2. PERFORM QUALITY ASSURANCE

- 1. Quality management plan
- 2. Work performance reports
- 3. Quality metrics
- 4. Quality control measurements
- 5. Project documents

- 1. Quality management and control tools
- 2. Quality audits
- 3. Process analysis

- 1. Change requests
- 2. Project management plan updates
- 3. Project document updates
- 4. Organizational process assets updates

10.2. MANAGE COMMUNICATIONS

- 1. Communications management plan
- 2. Requirements management plan
- 3. Enterprise environmental factors
- 4. Organizational process assets

- 1. Communication technology
- 2. Communication models
- 3. Communication methods
- 4. Information management systems
- 5. Performance reporting

- 1. Project communications
- 2. Project management plan updates
- 3. Project document updates
- 4. Organizational process assets updates

5.5. VALIDATE SCOPE

- 1. Project management plan
- 2. Requirements management plan
- 3. Requirements traceability matrix
- 4. Work performance data
- 5. Work performance data

- 1. Inspection
- 2. Group decision-making techniques

- 1. Accepted deliverables
- 2. Change requests
- 3. Work performance information
- 4. Project document updates

8.3. CONTROL QUALITY

- 1. Project management plan
- 2. Quality metrics
- 3. Quality checklists
- 4. Work performance data
- 5. Approved change requests
- 6. Deliverables
- 7. Project documents
- 8. Organizational process assets

- 1. Seven basic quality tools
- 2. Statistical sampling
- 3. Inspection
- 4. Approved change requests review

- 1. Quality control measurements
- 2. Validated changes
- 3. Validated deliverables
- 4. Work performance data
- 5. Change requests
- 6. Project management plan updates
- 7. Project document updates
- 8. Organizational process assets updates

12.4. CLOSE PROCUREMENTS

- 1. Project management plan
- 2. Procurement documents

- 1. Procurement audits
- 2. Procurement negotiations
- 3. Records management system

- 1. Close procurements
- 2. Organizational process assets updates

13.1. IDENTIFY STAKEHOLDERS

- 1. Project charter
- 2. Procurement documents
- 3. Enterprise environmental factors
- 4. Organizational process assets

- 1. Stakeholder analysis
- 2. Expert judgment
- 3. Meetings

- 1. Stakeholder register

5.2. COLLECT REQUIREMENTS

- 1. Scope management plan
- 2. Requirements management plan
- 3. Stakeholder management plan
- 4. Project charter
- 5. Stakeholder register

- 1. Interviews
- 2. Focus groups
- 3. Facilitated workshops
- 4. Group creativity techniques
- 5. Group decision-making techniques
- 6. Questionnaires and surveys
- 7. Observations
- 8. Prototypes
- 9. Benchmarking
- 10. Content diagrams
- 11. Document analysis

- 1. Requirements documentation
- 2. Requirements traceability matrix

6.2. DEFINE ACTIVITIES

- 1. Schedule management plan
- 2. Scope baseline
- 3. Enterprise environmental factors
- 4. Organizational process assets

- 1. Decomposition
- 2. Rolling wave planning
- 4. Expert judgment

- 1. Activity list
- 2. Activity attributes
- 3. Milestone list

7.2. ESTIMATE COSTS

- 1. Cost management plan
- 2. Human resource management plan
- 3. Scope baseline
- 4. Project schedule
- 5. Risk register
- 6. Enterprise environmental factors
- 7. Organizational process assets

- 1. Expert judgment
- 2. Analogous estimating
- 3. Parametric estimating
- 4. Bottom-up estimating
- 5. Three-point estimates
- 6. Reserve analysis
- 7. Cost of quality
- 8. Project management software
- 9. Checklists
- 10. Group decision-making techniques

- 1. Activity cost estimates
- 2. Basis of estimates
- 3. Project document updates

11.2. IDENTIFY RISKS

- 1. Risk management plan
- 2. Human resource management plan
- 3. Schedule management plan
- 4. Quality management plan
- 5. Human resource management plan
- 6. Scope baseline
- 7. Activity cost estimates
- 8. Activity duration estimates
- 9. Stakeholder register
- 10. Project documents
- 11. Procurement documents
- 12. Enterprise environmental factors
- 13. Organizational process assets

- 1. Documentation reviews
- 2. Information gathering techniques
- 3. Checklists
- 4. Assumption analysis
- 5. Diagramming techniques
- 6. SWOT analysis
- 7. Expert judgment

- 1. Risk register

9.2. ACQUIRE PROJECT TEAM

- 1. Human resource management plan
- 2. Enterprise environmental factors
- 3. Organizational process assets

- 1. Pre-assignment
- 2. Acquisition
- 3. Virtual teams
- 5. Multi-criteria decision analysis

- 1. Project staff assignments
- 2. Resource calendars
- 3. Project management plan updates

12.2. CONDUCT PROCUREMENTS

- 1. Procurement management plan
- 2. Procurement documents
- 3. Source selection criteria
- 4. Seller proposals
- 5. Project documents
- 6. Make-or-buy decisions
- 7. Procurement statement of work
- 8. Organizational process assets

- 1. Bidder conferences
- 2. Proposal evaluation techniques
- 3. Independent estimates
- 4. Project document updates
- 5. Advertising
- 6. Analytical techniques
- 7. Procurement negotiations

- 1. Selected sellers
- 2. Agreements
- 3. Resource calendars
- 4. Change requests
- 5. Project management plan updates
- 6. Project document updates

5.6. CONTROL SCOPE

- 1. Project management plan
- 2. Requirements management plan
- 3. Requirements traceability matrix
- 4. Work performance data
- 5. Organizational process assets

- 1. Variance analysis

- 1. Work performance measurements
- 2. Change requests
- 3. Project management plan updates
- 4. Project document updates
- 5. Organizational process assets updates

10.3. CONTROL COMMUNICATIONS

- 1. Project management plan
- 2. Communications management plan
- 3. Issue log
- 4. Work performance data
- 5. Organizational process assets

- 1. Information management systems
- 2. Expert judgment
- 3. Meetings

- 1. Work performance information
- 2. Change requests
- 3. Project management plan updates
- 4. Project document updates
- 5. Organizational process assets updates

5.3. DEFINE SCOPE

- 1. Scope management plan
- 2. Project charter
- 3. Requirements management plan
- 4. Organizational process assets

- 1. Expert judgment
- 2. Product analysis
- 3. Alternatives generation
- 4. Facilitated workshops

- 1. Project scope statement
- 2. Project document updates

6.3. SEQUENCE ACTIVITIES

- 1. Schedule management plan
- 2. Activity list
- 3. Activity attributes
- 4. Milestone list
- 5. Project scope statement
- 6. Enterprise environmental factors
- 7. Organizational process assets

- 1. Precedence diagramming method (PDM)
- 2. Dependency determination
- 3. Leads and lags

- 1. Project schedule network diagrams
- 2. Project document updates

7.3. DETERMINE BUDGET

- 1. Cost management plan
- 2. Scope estimate
- 3. Activity cost estimates
- 4. Basis of estimates
- 5. Project schedule
- 6. Resource calendars
- 7. Risk register
- 8. Agreements
- 9. Organizational process assets

- 1. Risk probability and impact assessment
- 2. Probability and impact matrix
- 3. Risk data quality assessment
- 4. Risk categorization
- 5. Risk urgency assessment
- 6. Expert judgment

- 1. Project document updates

11.3. PERFORM QUALITATIVE RISK ANALYSIS

- 1. Risk management plan
- 2. Scope baseline
- 3. Risk register
- 4. Enterprise environmental factors
- 5. Organizational process assets

- 1. Risk probability and impact assessment
- 2. Probability and impact matrix
- 3. Risk data quality assessment
- 4. Risk categorization
- 5. Risk urgency assessment
- 6. Expert judgment

- 1. Project document updates

9.3. DEVELOP PROJECT TEAM

- 1. Human resource management plan
- 2. Project staff assignments
- 3. Resource calendars

- 1. Interpersonal skills
- 2. Training
- 3. Team-building activities
- 4. Ground rules
- 5. Co-location
- 6. Recognition and rewards
- 7. Personal assessment tools

- 1. Team performance assessments
- 2. Project staff assignments
- 3. Resource calendars

12.3. CONDUCT PROCUREMENTS

- 1. Procurement management plan
- 2. Procurement documents
- 3. Source selection criteria
- 4. Seller proposals
- 5. Project documents
- 6. Make-or-buy decisions
- 7. Procurement statement of work
- 8. Organizational process assets

- 1. Bidder conferences
- 2. Proposal evaluation techniques
- 3. Independent estimates
- 4. Project document updates
- 5. Advertising
- 6. Analytical techniques
- 7. Procurement negotiations

- 1. Selected sellers
- 2. Agreements
- 3. Resource calendars
- 4. Change requests
- 5. Project management plan updates
- 6. Project document updates

6.7. CONTROL SCHEDULE

- 1. Project management plan
- 2. Project schedule
- 3. Requirements management plan
- 4. Work performance data
- 5. Schedule data
- 6. Organizational process assets

- 1. Performance review
- 2. Project management software
- 3. Resource optimization techniques
- 4. Modeling techniques
- 5. Leads and lags
- 6. Schedule compression
- 7. Scheduling tool

- 1. Work performance information
- 2. Schedule forecasts
- 3. Change requests
- 4. Project management plan updates
- 5. Project document updates
- 6. Organizational process assets updates

11.6. CONTROL RISKS

- 1. Project management plan
- 2. Risk register
- 3. Work performance data
- 4. Work performance reports

- 1. Risk reassessment
- 2. Risk audits
- 3. Variance and trend analysis
- 4. Technical performance measurement
- 5. Reserve analysis
- 6. Meetings

- 1. Work performance information
- 2. Change requests
- 3. Project management plan updates
- 4. Project document updates
- 5. Organizational process assets updates

5.4. CREATE WBS

- 1. Scope management plan
- 2. Project scope statement
- 3. Requirements management plan
- 4. Enterprise environmental factors
- 5. Organizational process assets

- 1. Decomposition
- 2. Expert judgment

- 1. Scope baseline
- 2. Project document updates

6.4. ESTIMATE ACTIVITY RESOURCES

- 1. Schedule management plan
- 2. Activity list
- 3. Activity attributes
- 4. Resource calendars
- 5. Risk register
- 6. Activity cost estimates
- 7. Enterprise environmental factors
- 8. Organizational process assets

- 1. Activity resource requirements
- 2. Resource breakdown structure
- 3. Project document updates

8.1. PLAN QUALITY MANAGEMENT

- 1. Project management plan
- 2. Stakeholder register
- 3. Requirements management plan
- 4. Risk register
- 5. Enterprise environmental factors
- 6. Organizational process assets

- 1. Cost-benefit analysis
- 2. Cost of quality
- 3. Seven basic quality tools
- 4. Benchmarking
- 5. Design of experiments
- 6. Statistical sampling
- 7. Additional quality planning tools
- 8. Meetings

- 1. Quality management plan
- 2. Process improvement plan
- 3. Quality metrics
- 4. Quality checklists
- 5. Project document updates

11.4. PERFORM QUANTITATIVE RISK ANALYSIS

- 1. Risk management plan
- 2. Cost management plan
- 3. Schedule management plan
- 4. Risk register
- 5. Enterprise environmental factors
- 6. Organizational process assets

- 1. Data gathering and representation techniques
- 2. Qualitative risk analysis and modeling techniques
- 3. Project document updates

- 1. Project document updates

9.4. MANAGE PROJECT TEAM

- 1. Human resource management plan
- 2. Project staff assignments
- 3. Team performance assessments
- 4. Issue log
- 5. Work performance reports
- 6. Organizational process assets

- 1. Observation and conversation
- 2. Project performance appraisals
- 3. Conflict management
- 4. Interpersonal skills

- 1. Change requests
- 2. Project management plan updates
- 3. Project document updates
- 4. Enterprise environmental factors updates
- 5. Organizational process assets updates

13.3. MANAGE STAKEHOLDER ENGAGEMENT

- 1. Stakeholder management plan
- 2. Communications management plan
- 3. Change log
- 4. Organizational process assets

- 1. Communication methods
- 2. Interpersonal skills
- 3. Management skills

- 1. Issue log
- 2. Change requests
- 3. Project management plan updates
- 4. Project document updates
- 5. Organizational process assets updates

7.4. CONTROL COSTS

- 1. Project management plan
- 2. Project funding requirements
- 3. Work performance data
- 4. Organizational process assets

- 1. Earned value management
- 2. Forecasting
- 3. To-complete performance index (TCPI)
- 4. Performance reviews
- 5. Project management software
- 6. Reserve analysis

- 1. Work performance information
- 2. Cost forecasts
- 3. Change requests
- 4. Project management plan updates
- 5. Project document updates
- 6. Organizational process assets updates

12.3. CONTROL PROCUREMENTS

- 1. Project management plan
- 2. Procurement documents
- 3. Agreements
- 4. Approved change requests
- 5. Work performance reports
- 6. Work performance data

- 1. Contract change control system
- 2. Procurement performance reviews
- 3. Inspection and audits
- 4. Performance reporting
- 5. Payment systems
- 6. Claims administration
- 7. Records management system

- 1. Work performance information
- 2. Change requests
- 3. Project management plan updates
- 4. Project document updates
- 5. Organizational process assets updates

LEGEND:

- INTEGRATION
- SCOPE
- SCHEDULE
- COST
- QUALITY
- HUMAN RESOURCE
- COMMUNICATIONS
- RISK
- PROCUREMENT
- STAKEHOLDERS
- INPUTS
- TOOLS AND TECHNIQUES
- OUTPUTS

6.5. ESTIMATE ACTIVITY DURATIONS

- 1. Schedule management plan
- 2. Activity list
- 3. Activity attributes
- 4. Activity resource requirements
- 5. Resource calendars
- 6. Project scope statement
- 7. Risk register
- 8. Resource breakdown structure
- 9. Enterprise environmental factors
- 10. Organizational process assets

- 1. Expert judgment
- 2. Analogous estimating
- 3. Parametric estimating
- 4. Three-point estimates
- 5. Group decision-making techniques
- 6. Reserve analysis

- 1. Activity duration estimates
- 2. Project document updates

6.6. DEVELOP SCHEDULE

- 1. Schedule management plan
- 2. Activity list
- 3. Activity attributes
- 4. Project schedule network diagrams
- 5. Activity resource requirements
- 6. Resource calendars
- 7. Activity duration estimates
- 8. Project scope statement
- 9. Risk register
- 10. Project staff assignments
- 11. Resource breakdown structure
- 12. Enterprise environmental factors
- 13. Organizational process assets

- 1. Schedule network analysis
- 2. Critical path method
- 3. Critical chain method
- 4. Resource optimization techniques
- 5. Modeling techniques
- 6. Leads and lags
- 7. Schedule compression
- 8. Scheduling tool

- 1. Project management plan updates
- 2. Project document updates

9.1. PLAN HUMAN RESOURCE MANAGEMENT

- 1. Project management plan
- 2. Activity resource requirements
- 3. Enterprise environmental factors
- 4. Organizational process assets

- 1. Organization charts and position descriptions
- 2. Networking
- 3. Organizational theory
- 4. Expert judgment
- 5. Meetings

- 1. Human resource plan

11.5. PLAN RISK RESPONSES

- 1. Risk management plan
- 2. Risk register

- 1. Strategies for negative risks or threats
- 2. Strategies for positive risks or opportunities
- 3. Contingency response strategies
- 4. Expert judgment

- 1. Project management plan updates
- 2. Project document updates

12.1. PLAN PROCUREMENT MANAGEMENT

- 1. Project management plan
- 2. Requirements management plan
- 3. Risk register
- 4. Activity resource requirements
- 5. Project schedule
- 6. Activity cost estimates
- 7. Stakeholder register
- 8. Enterprise environmental factors
- 9. Organizational process assets

- 1. Make-or-buy analysis
- 2. Expert judgment
- 3. Market research
- 4. Meetings

- 1. Procurement management plan
- 2. Procurement statements of work
- 3. Procurement documents
- 4. Source selection criteria
- 5. Make-or-buy decisions
- 6. Change requests
- 7. Project document updates

13.2. PLAN STAKEHOLDER MANAGEMENT

- 1. Project management plan
- 2. Stakeholder register
- 3. Enterprise environmental factors
- 4. Organizational process assets

- 1. Expert judgment
- 2. Meetings
- 3. Analytical techniques

- 1. Project management plan updates
- 2. Project document updates

13.4. CONTROL STAKEHOLDER ENGAGEMENT

- 1. Project management plan
- 2. Issue log
- 3. Work performance data
- 4. Project documents

- 1. Information management systems
- 2. Expert judgment
- 3. Meetings

- 1. Work performance information
- 2. Change requests
- 3. Project management plan updates
- 4. Project document updates
- 5. Organizational process assets updates

Knowledge Areas	Process Groups					Knowledge Areas	Process Groups				
	Initiating	Planning	Executing	Monitoring & Controlling	Closing		Initiating	Planning	Executing	Monitoring & Controlling	Closing
Integration	4.1. Develop Project Charter	4.3. Develop Project Management Plan	4.3. Direct and Manage Project Work	4.4. Monitor and Control Project Work	4.6. Close Project or Phase	Human Resource	9.1. Plan Human Resource Management	9.2. Acquire Project Team	9.3. Develop Project Team	9.4. Manage Project Team	
Scope		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		Communications	10.1. Plan Communications Management	10.2. Manage Communications	10.3. Control Communications		
Time		6.1. Plan Schedule Management 6.2. Define Activities 6.3. Sequence Activities 6.4. Estimate Activity Resources 6.5. Estimate Activity Durations 6.6. Develop Schedule		6.7. Control Schedule		Risk	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. Control Risks			
Cost		7.1. Plan Cost Management 7.2. Estimate Costs 7.3. Determine Budget		7.4. Control Costs		Procurement	12.1. Plan Procurement Management	12.2. Conduct Procurements	12.3. Control Procurements	12.4. Close Procurements	
Quality		8.1. Plan Quality Management	8.2. Perform Quality Assurance	8.3. Control Quality		Stakeholder	13.1. Identify Stakeholders	13.2. Plan Stakeholder Management	13.3. Manage Stakeholder Engagement	13.4. Control Stakeholder Engagement	