

Knowledge Areas According to the PMBOK® edition 5

Chapter 4 - Integration

4.1 - Develop Project Charter Process		
Inputs	T&T	Outputs
Project statement of work	Expert Judgment	Project charter
Business case	Facilitation techniques	
Agreements		
Enterprise environmental factors		
Organizational process assets		

4.2 – Develop Project Management Plan Process		
Inputs	T&T	Outputs
Project charter	Expert Judgment	Project management plan
Outputs from other processes	Facilitation techniques	
Enterprise environmental factors		
Organizational process assets		

4.3 – Direct & Manage Project Work Process		
Inputs	T&T	Outputs
Project management plan	Expert Judgment	Deliverables
Approved change requests	PMIS – Project Management Information System	Work performance data
Enterprise environmental factors	Meetings	Change requests
Organizational process assets		Project management plan (updates)
		Project documents (updates)

4.4 – Monitor & Control Project Work Process		
Inputs	T&T	Outputs
Project management plan	Expert Judgment	Change requests
Schedule forecasts	Analytical techniques	Work performance reports
Cost forecasts	Project management information system	Project management plan (updates)
Validated changes	Meetings	Project documents (updates)
Work performance information		
Enterprise environmental factors		
Organizational process assets		

4.5 – Perform Integration Change Control Process		
Inputs	T&T	Outputs
Project management plan	Expert Judgment	Approved change requests
Work performance reports	Meetings	Change log
Change requests	Change control tools	Project management plan (updates)
Enterprise environmental factors		Project documents (updates)
Organizational process assets		



4.6 – Close Project or Phase Process		
Inputs	T&T	Outputs
Project management plan	Expert Judgment	Final product, service, or result transition
Accepted deliverables	Analytical techniques	Organizational process assets (updates)
Organizational process assets	Meetings	

Chapter 5 - Scope

5.1 – Plan Scope Management Process		
Inputs	T&T	Outputs
Project management plan	Expert judgment	Scope management plan
Project charter	Meetings	Requirements management plan
Enterprise environmental factors		
Organizational process assets		

5.2 – Collect Requirements Process		
Inputs	T&T	Outputs
Scope management plan	Interviews	Requirements documentation
Requirements management plan	Focus groups	Requirements traceability matrix
Stakeholder management plan	Facilitated workgroups	
Project charter	Group creativity techniques	
Stakeholder register	Group decision-making techniques	
	Questionnaires & surveys	
	Observations	
	Prototypes	
	Benchmarking	
	Context diagrams	
	Document analysis	

5.3 – Define Scope Process		
Inputs	T&T	Outputs
Scope management plan	Expert judgment	Project scope statement
Project charter	Product analysis	Project documents (updates)
Requirements documentation	Alternatives generation	
Organizational process assets	Facilitated workshops	

5.4 – Create WBS Process		
Inputs	T&T	Outputs
Scope management plan	decomposition	Scope baseline
Project scope statement	Expert judgment	Project documents (updates)
Requirements documentation		
Enterprise environmental factors		
Organizational process assets		

5.5 – Validate Scope Process		
Inputs	T&T	Outputs
Project management plan	inspection	Accepted deliverables
Requirements documentation	Group decision-making techniques	Change requests
Requirements traceability matrix		Work performance information
Validated deliverables		Project documents (updates)
Work performance data		



5.6 – Control Scope Process		
Inputs	T&T	Outputs
Project management plan	Variance analysis	Work performance information
Requirements documentation		Change requests
Requirements traceability matrix		Project management plan (updates)
Work performance data		Project documents (updates)
Organizational process assets		Organizational process assets (updates)

Chapter 6 – Time

6.1 – Plan Schedule Management Process		
Inputs	T&T	Outputs
Project management plan	Expert judgment	Schedule management plan
Project charter	Analytical techniques	
Enterprise environmental factors	Meetings	
Organizational process assets		

6.2 – Define Activities Process		
Inputs	T&T	Outputs
Schedule management plan	Decomposition	Activity list
Scope baseline	Rolling wave planning	Activity attributes
Enterprise environmental factors	Expert judgment	Milestone list
Organizational process assets		

6.3 – Sequence Activities Process		
Inputs	T&T	Outputs
Schedule management plan	Precedence diagramming method (PDM)	Project schedule network diagrams
Activity list	Dependency determination	Project documents (updates)
Activity attributes	Leads and lags	
Milestone list		
Project scope statement		
Enterprise environmental factors		
Organizational process assets		

6.4 – Estimate Activity Resources Process		
Inputs	T&T	Outputs
Schedule management plan	Expert judgment	Activity resource requirements
Activity list	Alternative analysis	RBS – Resource breakdown structure
Activity attributes	Published estimated data	Project documents (updates)
Resource calendars	Bottom up estimating	
Risk register	Project management software	
Activity cost estimates		
Enterprise environmental factors		
Organizational process assets		

6.5 – Estimate Activity Durations Process		
Inputs	T&T	Outputs
Schedule management plan	Expert judgment	Activity duration estimates
Activity list	Analogous estimating	Project documents (updates)
Activity attributes	Parametric estimating	
Activity resource requirements	Three point estimating (pert)	
Resource calendars	Group decision-making techniques	
Project scope statement	Reserve analysis (buffer)	
Risk register		
Resource breakdown structure		
Enterprise environmental factors		
Organizational process assets		

6.6 – Develop Schedule Process		
Inputs	T&T	Outputs
Schedule management plan	Schedule network analysis	Schedule baseline
Activity list	Critical path method	Project schedule (milestone chart, bar chart, project schedule network diagram)
Activity attributes	Critical chain method	Schedule data
Project schedule network diagram	Resource optimization techniques	Project calendars
Activity resource requirements	Modeling techniques	Project management plan (updates)
Resource calendars	Leads & lags	Project documents (updates)
Activity duration estimates	Schedule compression	
Project scope statement	Scheduling tool	
Risk register		
Project staff assignment		
Resource breakdown structure		
Enterprise environmental factors		
Organizational process assets		

6.7 – Control Schedule Process		
Inputs	T&T	Outputs
Project management plan	Performance reviews	Work performance information
Project schedule	Project management software	Schedule forecasts
Work performance data	Resource optimization techniques	Change requests
Project calendars	Modeling techniques	Project management plan (updates)
Schedule data	Leads and lags	Project documents (updates)
Organizational process assets	Schedule compression	Organizational process assets (updates)
	Scheduling tool	

Chapter 7 – Cost

7.1 – Plan Cost Management Process		
Inputs	T&T	Outputs
Project management plan	Expert judgment	Cost management plan
Project charter	Analytical techniques	
Enterprise environmental factors	Meetings	
Organizational process assets		

7.2 – Estimate Cost Process		
Inputs	T&T	Outputs
Cost management plan	Expert judgment	Activity cost estimates
Human resource management plan	Analogous estimating	Basis of estimates
Scope baseline	Parametric estimating	Project documents (updates)
Project schedule	Bottom-up estimating	
Risk register	Three point estimating (pert)	
Enterprise environmental factors	Reserve analysis	
Organizational process assets	Cost of quality (COQ)	
	Project management software	
	Vendor bid analysis	
	Group decision-making techniques	

7.3 – Determine Budget Process		
Inputs	T&T	Outputs
Cost management plan	Cost aggregation	Cost baseline
Scope baseline	Reserve analysis	Project funding requirements
Activity cost estimates	Expert judgment	Project documents (updates)
Basis of estimates	Historical relationships	
Project schedule	Funding limit reconciliation	
Resource calendars		
Risk register		
Agreements		
Organizational process assets		

7.4 – Control Costs Process		
Inputs	T&T	Outputs
Project management plan	EVM – Earned value management	Work performance information
Project funding requirements	Forecasting	Cost forecasts
Work performance data	TCPI – To complete performance index	Change requests
Organizational process assets	Performance reviews	Project management plan (updates)
	Project management software	Project documents (updates)
	Reserve analysis	Organizational process assets (updates)

Chapter 8 – Quality

8.1 – Plan Quality Management Process		
Inputs	T&T	Outputs
Project management plan	Cost – Benefit analysis	Quality management plan
Stakeholder register	COQ – Cost of quality	Process improvement plan
Risk register	Seven basic quality tools	Quality metrics
Requirements documentation	Benchmarking	Quality checklist
Enterprise environmental factors	DOE – Design of experiments	Project documents (updates)
Organizational process assets	Statistical sampling	
	Additional quality planning tools	
	Meetings	

8.2 – Perform Quality Assurance Process		
Inputs	T&T	Outputs
Quality management plan	Quality management and control tools	Change requests
Process improvement plan	Quality audits	Project management plan (updates)
Quality metrics	Process analysis	Project documents (updates)
Quality control measurements		Organizational process assets (updates)
Project documents		

8.3 – Control Quality Process		
Inputs	T&T	Outputs
Project management plan	Seven basic quality tools	Quality control measurements
Quality metrics	Statistical sampling	Validated changes
Quality checklist	Inspection	Validated deliverables
Work performance data	Approved change requests review	Work performance information
Approved change request		Change requests
Deliverables		Project management plan (updates)
Project documents		Project documents (updates)
Organizational process assets		Organizational process assets (updates)

Chapter 9 – Human Resources

9.1 – Develop HR Plan Process		
Inputs	T&T	Outputs
Project management plan	Organizational charts and position description (RAM, RACI)	Human resource management plan (R&R, Authority, Competency, project organization charts)
Activity resource requirements	Networking	
Enterprise environmental factors	Organizational theory	
Organizational process assets	Expert judgment	

9.2 – Acquire Project Team Process		
Inputs	T&T	Outputs
Human resource management plan	Pre-assignment	Project staff assignments
Enterprise environmental factors	Negotiation	Resource calendars
Organizational process assets	Acquisition	Project management plan (updates)
	Virtual teams	
	Multi-criteria decision analysis	

9.3 – Develop Project Team Process		
Inputs	T&T	Outputs
Human resource management plan	Interpersonal skills	Team performance assessments
Project staff assignment	Training	Enterprise environmental factors (updates)
Resource calendars	Team building activities	
	Ground rules	
	Colocation	
	Recognition & rewards	
	Personnel assessment tools	

9.4 – Manage Project Team Process		
Inputs	T&T	Outputs
Human resource management plan	Observation & conversation	Change requests
Project staff assignments	Project performance appraisals	Project management plan (updates)
Team performance assessments	Conflict management	Project documents (updates)
Issue log	Interpersonal skills	Enterprise environmental factors (updates)
Work performance reports		Organizational process assets (updates)
Organizational process assets		

Chapter 10 – Communication

10.1 – Plan Communications Management Process		
Inputs	T&T	Outputs
Project management plan	Communication requirements analysis	Communications management plan
Stakeholder register	Communication technology	Project documents (updates)
Enterprise environmental factors	Communication models	
Organizational process assets	Communication methods	
	Meetings	

10.2 – Manage Communications Process		
Inputs	T&T	Outputs
Communications management plan	Communication technology	Project communications
Work performance reports	Communication models	Project management plan (updates)
Enterprise environmental factors	Communication methods	Project documents (updates)
Organizational process assets	Information management systems	Organizational process assets (updates)
	Performance reporting	

10.3 – Control Communications Process		
Inputs	T&T	Outputs
Project management plan	Information management systems	Work performance information
Project communications	Expert judgment	Change requests
Issue log	Meetings	Project management plan (updates)
Work performance data		Project documents (updates)
Organizational process assets		Organizational process assets (updates)

Chapter 11 – Risk

11.1 – Plan Risk Management Process		
Inputs	T&T	Outputs
Project management plan	Analytical techniques	Risk management plan
Project charter	Expert judgment	
Stakeholder register	Meetings	
Enterprise environmental factors		
Organizational process assets		

11.2 – Identify Risks Process		
Inputs	T&T	Outputs
Risk management plan	Documentation reviews	Risk register
Cost management plan	Information gathering techniques (brainstorming, Delphi, interviews, root cause)	
Schedule management plan	Checklist analysis	
Quality management plan	Assumptions analysis	
Human resource management plan	Diagramming techniques	
Scope baseline	SWOT analysis	
Activity cost estimates	Expert judgment	
Activity duration estimates		
Stakeholder register		
Project documents		
Procurement documents		
Enterprise environmental factors		
Organizational process assets		

11.3 – Perform Qualitative Risk Analysis Process		
Inputs	T&T	Outputs
Risk management plan	Risk probability & impact assessment	Project documents (updates)
Scope baseline	Probability & impact matrix	
Risk register	Risk data quality assessment	
Enterprise environmental factors	Risk categorization	
Organizational process assets	Risk urgency assessment	
	Expert judgment	



11.4 – Perform Quantitative Risk Analysis Process		
Inputs	T&T	Outputs
Risk management plan	Data gathering & representation techniques	Project documents (updates)
Cost management plan	Quantitative risk analysis & modeling techniques (sensitivity analysis, expected monetary value analysis EMV, modeling & simulation)	
Schedule management plan	Expert judgment	
Risk register		
Enterprise environmental factors		
Organizational process assets		

11.5 – Plan Risk Responses Process		
Inputs	T&T	Outputs
Risk management plan	Strategies for negative risk or threats (avoid, transfer, mitigate, accept)	Project management plan (updates)
Risk register	Strategies for positive risk or opportunities (exploit, share, enhance, accept)	Project document (updates)
	Contingent response strategies	
	Expert judgment	

11.6 – Control Risks Process		
Inputs	T&T	Outputs
Project management plan	Risks assessments	Work performance information
Risk register	Risks audits	Change requests
Work performance data	Variance & trend analysis	Project management plan (updates)
Work performance reports	Technical performance measurements	Project documents (updates)
	Reserve analysis	Organizational process assets (updates)
	Status meeting	

Chapter 12 – Procurement

12.1 – Plan Procurement Management Process		
Inputs	T&T	Outputs
Project management plan	Make or buy analysis	Procurement management plan
Requirements documentation	Expert judgment	Procurement statement of work
Risk register	Market research	Procurement documents
Activity resource requirements	Meetings	Source selection criteria
Project schedule		Make-or-buy decisions
Activity cost estimates		Change requests
Stakeholder register		Project documents (updates)
Enterprise environmental factors		
Organizational process assets		

12.2 – Conduct Procurements Process		
Inputs	T&T	Outputs
Procurement management plan	Bidder conference	Selected sellers
Procurement documents	Proposal evaluation techniques	Agreements
Source selection criteria	Independent estimates	Resource calendars
Seller proposals	Expert judgment	Change requests
Project documents	Advertising	Project management plan (updates)
Make or buy decisions	Analytical techniques	Project document updates
Procurement statement of work	Procurement negotiations	
Organizational process assets		

12.3 – Control Procurements Process		
Inputs	T&T	Outputs
Project management plan	Contract change control system	Work performance information
Procurement documents	Procurements performance reviews	Change requests
Agreements	Inspections & audits	Project management plan (updates)
Approved change requests	Performance reporting	Project documents (updates)
Work performance reports	Payment systems	Organizational process assets (updates)
Work performance data	Claims administrations	
	Records management system	

12.4 – Close Procurements Process		
Inputs	T&T	Outputs
Project management plan	Procurement audits	Close procurements
Procurement documents	Procurement negotiations	Organizational process assets (updates)
	Records management system	

Chapter 13 – Stakeholder

13.1 – Identify Stakeholders Process		
Inputs	T&T	Outputs
Project charter	Stakeholder analysis	Stakeholder register
Procurement documents	Expert judgment	
Enterprise environmental factors	Meetings	
Organizational process assets		

13.2 – Plan Stakeholder Management Process		
Inputs	T&T	Outputs
Project management plan	Expert judgment	Stakeholder management plan
Stakeholder register	Meetings	Project documents (updates)
Enterprise environmental factors	Analytical techniques	
Organizational process assets		

13.3 – Manage Stakeholder Engagement Process		
Inputs	T&T	Outputs
Stakeholder management plan	Communication methods	Issue log
Communications management plan	Interpersonal skills	Change requests
Change log	Management skills	Project management plan (updates)
Organizational process assets		Project documents (updates)
		Organizational process assets (updates)

13.4 – Control Stakeholder Engagement Process		
Inputs	T&T	Outputs
Project management plan	Information management systems	Work performance information
Issue log	Expert judgment	Change requests
Work performance data	Meetings	Project management plan (updates)
Project documents		Project documents (updates)
		Organizational process assets (updates)