Chapter 4
Project Integration Management
(PMBOK Guide)

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Table of Content
Introduction

• Integration Management: Processes & activities to identify, define, combine and coordinate PM activities

• Unification, consolidation, articulation, and integrative actions for completing the project, managing stakeholders requirements

• Making choices about resource allocation, making trade-offs among competing objectives and alternatives and managing interdependencies among PM knowledge areas
4.1 Develop Project Charter

• Documenting:
  – Initial requirements
  – Expectations

• Authorizes a project/a phase

• Establishing partnership between customer & contractor

• Assigning a project manager
Input, Tools & Techniques, Outputs

**Inputs**
1. Project statement of work
2. Business case
3. Contract
4. Enterprise environmental factors
5. Organizational process assets

**Tools & Techniques**
1. Expert judgment

**Outputs**
1. Project charter
Data Flow Diagram

Project Integration Management

4.1 Develop Project Charter

- Contracts
- Project statement of work
- Business case

Organizational process assets
- Enterprise Environmental Factors

Project Charter

4.2 Develop Project Management Plan

5.1 Collect Requirements

5.2 Define Scope

10.1 Identify Stakeholders

Enterprise/ Organization

Project Initiator/ Sponsor
Inputs

• Project Statement of Work (SOW)
  – Business need
  – Product scope description
  – Strategic plan
• Business Case
  – Market demand
  – Organizational need
  – Customer request
  – Technological advance
  – Legal requirement
  – Ecological impacts
  – Social needs
Inputs

• Contract
• Enterprise Environmental Factors
  – Government/industry standards
  – Organization infrastructure
  – Marketplace conditions
• Organizational Process Assets
  – Standards/policies
  – Templates
  – Historical information/lesson learned
Tools & Techniques

- Expert judgment
  - Other units in the organization
  - Consultants
  - Stakeholders
  - Professional/technical association
  - Industry groups
  - Subject matter experts
  - PMO
Outputs

• Project Charter
  – Project purpose
  – Measurable project objectives & related success criteria
  – High-level requirements
  – High-level project description
  – High-level risks
  – Summary milestone schedule
  – Summary budget
  – Project approval requirements
  – Assigned project manager, responsibility, authority level
  – Name and authority of the sponsor
4.2 Develop Project Management Plan

• Documenting the actions necessary to define, prepare, integrate and coordinate all subsidiary plans

• How to execute, monitor, control, close the project

• Progressively elaborated by updates and controlled and approved through Integrated Change Control process
## Input, Tools & Techniques, Outputs

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Tools &amp; Techniques</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Project charter</td>
<td>.1 Expert judgment</td>
<td>.1 Project management plan</td>
</tr>
<tr>
<td>2. Outputs from planning processes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Enterprise environmental factors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Organizational process assets</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Data Flow Diagram
Inputs

• Project Charter
• Outputs from Planning Processes
• Enterprise Environmental Factors
  – Government/industry standards
  – PM Info. System
  – Organizational structure/culture
  – Infrastructure
  – Personnel administration
Inputs

• Organizational Process Assets
  – Standard guidelines, work instructions, proposal evaluation criteria, performance measurement criteria
  – PM plan templates (project validation & acceptance criteria)
  – Change control procedures (how to modify, approve, validate changes)
  – Project files from past projects
  – Historical information, lesson learned
  – Configuration management
Tools & Techniques

• Expert Judgment
  – Customizing the process
  – Developing technical/management details
  – Determining resources/skill levels
  – Defining the level of configuration management
  – Determining documents subject to change control process
outputs

• Project Management Plan
  – Life cycle of project/processes for each phase
  – Results of customizing processes
    • Which processes
    • How detail
    • Tools/techniques
    • How to use the processes
  – How work will be executed
  – Change management plan
  – Configuration management plan
  – Need/techniques of communication among stakeholders
4.3 Direct & Manage Project Execution

• The process of performing the work defined in PM Plan
  – Performing activities
  – Creating deliverables
  – Staff/train/manage the team members
  – Obtain/manage/use resources
  – Implement methods/standards
  – Establish/manage communication channels
4.3 Direct & Manage Project Execution

- Generate data to facilitate forecasting (cost/schedule/progress report)
- Issue change requests and adapt approved changes
- Manage risks/apply risk response activities
- Collect/document lesson learned
- Implementing approved changes
  - Corrective action
  - Preventive action
  - Defect repair
Inputs

Inputs:  
.1 Project management plan  
.2 Approved change requests  
.3 Enterprise environmental factors  
.4 Organizational process assets

Tools & Techniques:  
.1 Expert judgment  
.2 Project management information system

Outputs:  
.1 Deliverables  
.2 Work performance information  
.3 Change requests  
.4 Project management plan updates  
.5 Project document updates
Data Flow Diagram
Inputs

• PM Plan
• Approved Change Requests
• Enterprise Environmental factors
  – Organizational culture/structure
  – Infrastructure
  – Personnel administration
  – Stakeholders risk tolerances
  – PM Info System
Inputs

• Organizational Process Assets
  – Standardized guidelines/work instructions
  – Communication requirements (media, record, security)
  – Issue & defect management procedures (control, identifications, resolution, tracking)
  – Issue & defect management DB
  – Process measurement DB
  – Project files from past projects
Tools & Techniques

• Expert Judgment
  – Other units in organization
  – Consultants
  – Stakeholders
  – Professional/technical associations

• PM Info. System
Outputs

• Deliverables
• Work Performance Information
  – Deliverables status
  – Schedule progress
  – Cost incurred
• Change Requests
  – Corrective action
  – Preventive action
  – Defect repair
  – Updates
Outputs

• PM Plan Updates
  – Requirements, Schedule, Cost, Quality, Human resources, Communication, Risk, Procurement, Project baselines

• Project Document Updates
  – Requirements
  – Project logs
  – Risk register
  – Stakeholder register
4.4 Monitor & Control Project Work

- Tracking, reviewing, regulating the progress
- Collecting, measuring, distributing performance info., assessing measurements & trends to effect process improvements
- Comparing actual project performance vs. planned one
- Assessing performance
- Identifying new risks, their status, risk response plans
4.4 Monitor & Control Project Work

- Maintaining accurate/timely info about project products/documentation
- Providing info. for reporting status, measuring progress, forecasting
- Providing forecast to update cost/schedule info.
- Monitoring implementation of approved changes
Inputs, Tools & Techniques, outputs

**Inputs**
1. Project management plan
2. Performance reports
3. Enterprise environmental factors
4. Organizational process assets

**Tools & Techniques**
1. Expert judgment

**Outputs**
1. Change requests
2. Project management plan updates
3. Project document updates
Data Flow
Inputs

- PM Plan
- Performance Report
  - Current status
  - Significant accomplishment for the period
  - Scheduled activities
  - Forecasts
  - Issues
- Enterprise Environmental Factors
  - Government/industry standards
Inputs

– Company work authorization system
– Stakeholder risk tolerance
– PM Info. System

• Organizational Process Assets
  – Organization communication requirements
  – Financial controls procedures
  – Issue/defect management procedures
  – Risk control procedures (categories, probability, impact)
  – Process measurement DB
  – Lesson learned DB
Tools & Techniques

• Expert judgment
Outputs

• Change Requests
  – Corrective
  – Preventive
  – Defect

• PM Plan Updates
  – Schedule, cost, quality, scope, schedule, cost performance baseline

• Project Document Updates
  –Forecasts, performance reports, issue log
4.5 Perform Integrated Change Control

- The process of reviewing change requests, approving changes, managing changes

- Include:
  - Influencing factors so that only approved changes are implemented
  - Reviewing, analyzing, approving change requests ASAP
  - Managing approved changes
  - Reviewing, approving, denying recommended corrective/preventive actions
  - Documenting the complete impact of change requests
Inputs, Tools & Techniques, Outputs

Inputs
- 1. Project management plan
- 2. Work performance information
- 3. Change requests
- 4. Enterprise environmental factors
- 5. Organizational process assets

Tools & Techniques
- 1. Expert judgment
- 2. Change control meetings

Outputs
- 1. Change request status updates
- 2. Project management plan updates
- 3. Project document updates
Inputs

• PM Plan
• Work Performance Info.
• Change Requests
• Enterprise Environmental Factors
• Organizational Process Assets
  – Change control procedures (approve, validate, implement)
  – Procedure for approving and issuing change authorizations
  – Process measurement DB
  – Configuration management DB
  – Project files
Tools & Techniques

• Expert Judgment
  – Consultants
  – Stakeholders
  – Professional/technical associations
  – Industry groups
  – Subject matter experts
  – PMO

• Change Control Meetings
Outputs

• Change request status updates
• Project Management Plan Updates
• Project Document Updates
4.6 Close Project/Phase

• Actions/activities necessary to satisfy completion or exit criteria for phase/project

• Actions/activities necessary to transfer the project’s product, service, result to next phase/production/operation

• Actions/activities necessary to collect records, audit success/failure, lesson learned
Inputs, Tools & Techniques, Outputs

**Inputs**
1. Project management plan
2. Accepted deliverables
3. Organizational process assets

**Tools & Techniques**
1. Expert judgment

**Outputs**
1. Final product, service, or result transition
2. Organizational process assets updates
Inputs

• Project Management Plan
• Accepted Deliverables
• Organizational Process Assets
  – Project/phase closure guidelines
  – Historical info., lesson learned
Tools and Techniques

• Expert Judgment
Outputs

• Final product, service, result transition
• Organizational process assets updates
  – Project files
  – Project/phase closure documents
  – Historical information/lesson learned