Project Integration Management
What is the Project Manager’s main job?

To pull all the pieces of the Project together

i.e. Integration Management
Objective

- The objective of this session is to make the participants understand basic Project Manager’s role in Integration Management.

- Enable the participants to identify, define, combine, unify, and coordinate the various processes and Project Management activities within the Project Management Process Groups.
Key Terms

- **Project Charter**
  - A Project Charter is the document issued by the Project Initiator or Sponsor that formally authorizes the Project and provides the Project Manager with authority to apply Organizational resources on the Project activities.

- **Project Management Plan**
  - A Project Management Plan is the document that describes how the Project will be executed monitored and controlled. It may be a summary or detailed and may be composed of one or more subsidiary Management plans.

- **Project Management Information System (PMIS)**
  - An information system consisting of the tools and techniques used to gather, integrate and disseminate the outputs of the Project Management processes. It is used to support all the aspects of the Project from initiation to closing.
Key Terms

- **Change Control**
  - Is the process of identifying, documenting, approving or rejecting and controlling changes to the Project baselines.

- **Change Control Board (CCB)**
  - A formally constituted group of Stakeholders responsible for reviewing, evaluating, approving, delaying or rejecting changes to the Project.

- **Close Project**
  - The process of finalizing all activities across all of the Project process groups to formally close the Project.
Project Integration Management

- Is the process of identifying, defining, combining, unifying and coordinating the various processes and activities within the Project Management process group.
- Crucial in meeting the Project requirements, managing the Stakeholder expectation and Project completion.
Project Integration Management

Key Processes

- Develop Project Charter
- Develop Project Management Plan
- Direct and Manage Project Work
- Monitor and Control Project Work
- Perform Integrated Change Control
- Close Project or Phase
DEVELOP PROJECT CHARTER

Initiating Process Group

• Develop Project Charter
• Develop Project Management Plan
• Direct and Manage Project Work
• Monitor and Control Project Work
• Perform Integrated Change Control
• Close Project or Phase
Develop Project Charter

- Is the process of developing a formal document, authorizing a Project or a phase
- The Project charter gives the authority to the Project Manager to assign resources to the Project
- The Project charter is usually authorized by someone who is external to the Project
- Is an element of Initiating Process Group
Develop Project Charter

**INPUTS**
- Project statement of work
- Business case
- Agreements
- Enterprise environmental factor
- Organizational process assets

**TOOLS and TECHNIQUES**
- Expert judgment
- Facilitation techniques

**OUTPUTS**
- Project Charter

**Develop Project Charter – Inputs, Tools and Techniques and Outputs**
Develop Project Charter

Inputs

• Project Statement of Work (SOW)
  – Is the description of the products, services to be delivered by the Project
  – Will be given by the customer or sponsor
  – SOW mentions the following :-
    • Business need of the organization
    • Product Scope description, giving details about the characteristic of the
      product or the service that is to be created by the Project.
    • Strategic plan

• Agreements
  – When the Project is done for external customer,. Agreements may take the
    form of contracts, memorandums of understanding(MOUs), service Level
    agreements (SLA), letter of agreements, letters of intent, Verbal
    agreements, email, or other written agreements.
Business case
– Provides the required information on the rationale behind initiating the Project
– The business case may arise due to any one or more of the following reasons
  • Market demand
  • Organizational need
  • Customer request
  • Technological advance
  • Legal requirement
  • Ecological impact
  • Social need
– The business case has to be reviewed periodically for its relevance and to ensure that the Project requirement still exists.
Develop Project Charter

Inputs

• Enterprise environmental factor (EEF)
  – EEF that can influence this process are
    • Governmental or Industry standards
    • Project Management Information Systems
    • Organizational structure and culture
    • Organizational infrastructure such as facilities and equipment's
    • Personnel administration

• Organizational Process Assets (OPA)
  – OPA that influences the Develop Project Charter process are
    • Templates,
    • Lessons learned,
    • Historical information
Expert Judgment

- Expert opinion in technical and Managerial issues will help assess the input used to Develop Project Charter
- Experts can be an individual or a group, who possess specialized knowledge or skills in the area of interest.
- Experts can be from:
  - Other units within the organization
  - Consultants
  - Stakeholder, including customers or sponsors
  - Professional and technical association
  - Industry groups
  - Subject Matter Experts (SMEs)
  - Project Management Office (PMO)
Facilitation Techniques

Broad application within Project Management processes and guide the development of the Project charter.

Brainstorming, conflict resolutions, problem solving and Management meetings are examples of key techniques used by facilitators to help team and individuals develop the Project Charter.
Develop Project Charter

Project Charter

– The Project charter is the document which formally authorizes the initiation of the Project
– Gives the authority to the Project Manager to assign resources to the Project.
– Documents the
  • Business need
  • Customer’s needs
  • High level description about the product, service, or results
Develop Project Charter

Project Charter
– Shall contain
  • The purpose of the Project
  • Project objectives and success criteria
  • High level description of the Project
  • High level Requirement
  • High level risks
  • Summary milestones
  • Summary budget
  • Approval requirements
  • Name of the Project Manager, his responsibility and authority
  • Name and authority of the sponsor or the authorizing person
Project Charter - MindMap
Group Activity

Discuss the Project Charter for your current project

Project Charter Template
DEVELOP PROJECT MANAGEMENT PLAN

Planning Process Group

- Develop Project Charter
- **Develop Project Management Plan**
- Direct and Manage Project Work
- Monitor and Control Project Work
- Perform Integrated Change Control
- Close Project or Phase
Develop Project Management Plan

- Process of defining, preparing and coordinating all subsidiary plans and integrating them into comprehensive Project Management Plan.

- Central document that defines the basis for all Project execution and control.
Develop Project Management Plan

• Process of documenting all planning activities for the Project such as
  – Scope Management plan
  – Requirement Management plan
  – Cost Management plan
  – Time Management plan
  – Quality Management plan
  – Communication Management plan
  – Human resources Management plan
  – Risk Management plan and
  – Procurement Management plan
  – Stakeholder Management Plan

• Is an element of Planning Process Group
Develop Project Management Plan

PM helps identify Stakeholders and documents the charter

Sponsor signs and issues the charter

PM develops the Project Management Plan
Develop Project Management Plan

**INPUTS**
- Project charter
- Outputs from other planning processes
- Enterprise environmental factor
- Organizational process assets

**TOOLS and TECHNIQUES**
- Expert judgment
- Facilitation techniques

**OUTPUTS**
- Project Management plan

Develop Project Management Plan – Inputs, Tools and Techniques and Outputs
Develop Project Management Plan

Inputs

• Project Charter
  – Is the formal document authorizing the Project.
  – It will contain the high level Project and product requirements

• Outputs from other planning processes
  – Outputs from all Project processes often feed into the Develop Project Management Plan process as inputs
  – Any updates to these documents results in updates to the Project Management plan
Develop Project Management Plan

Inputs

• Enterprise Environmental Factor

• Organizational Process Assets
  – Organizational Process, Procedure, Guidelines, Work instructions, Proposal evaluation criteria and Measurement criteria etc..
  – Project Management Plan templates
  – Change control procedures
  – Project files and data from the past Projects
  – Historical information and lessons learned knowledge base
  – Configuration Management knowledge base
Develop Project Management Plan
Tools and Techniques

Expert Judgment
– Getting the opinion of an expert on the particular field.
– Will be useful to understand
  • What level of tailoring is required to Project process?
  • To develop and include Technical and Management details in the Project Management plan
  • To decide on the resource and skill level required to perform a Project work
  • To decide what level of Configuration Management is required for this Project
  • To decide on the change control process and the documents which must follow this process?
Develop Project Management Plan
Tools and Techniques

Facilitation Techniques

Broad application within Project Management processes and guide the development of the Project charter, Brainstorming, conflict resolutions, problem solving and meeting Management are examples of key techniques used by facilitators to help team and individuals accomplish Project activity.
Project Management Plan
- Documents how each step of the Project is executed, monitored, controlled and closed
- Incorporates and consolidates all the subsidiary plans and baselines
- Shall address and describe
  • The life cycle chosen by the Project Management team
  • The selected process and its level of application
  • How the selected process will be used to manage the Project and the interactions among them.
  • The tools and technique that will be used for performing and monitoring the processes and Project
  • How work will be authorized, implemented, monitored and controlled.
  • A change Management plan detailing how the changes will be initiated approved, implemented monitored and controlled.
  • How Project configuration Management will be performed
  • Specify plan and process for doing the performance reviews.
Develop Project Management Plan

- Project Management Plan
  - Include the baseline such as
    - Scope baseline
    - Schedule baseline and
    - Cost baseline

- Will have the subsidiary plans for
  - Scope Management /Requirements Management plan
  - Schedule Management plan
  - Cost Management plan
  - Quality Management plan / Process improvement plan
  - Human resources plan
  - Communication Management plan
  - Risk Management plan
  - Procurement Management plan
  - Stakeholder Management Plan
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DIRECT AND MANAGE PROJECT WORK

Executing Process Group

- Develop Project Charter
- Develop Project Management Plan
- **Direct and Manage Project Work**
- Monitor and Control Project Work
- Perform Integrated Change Control
- Close Project or Phase
Direct and Manage Project Work

- Process of putting the plan into action achieve the Project objectives
- Project Management team performs all the planned Project activities
- Is an element of Executing Process Group
Direct and Manage Project Work

**INPUTS**
- Project Management plan
- Approved change requests
- Enterprise environmental factor
- Organizational process assets

**TOOLS and TECHNIQUES**
- Expert judgment
- Project Management information system
- Meetings

**OUTPUTS**
- Deliverables
- Work performance data
- Change requests
- Project Management plan updates
- Project document updates

Direct and Manage Project Work – Inputs, Tools and Techniques and Outputs
Direct and Manage Project Work

Inputs

- Project Management plan

- Approved change requests
  - Approved change request will influence the way the Project is being executed
  - The approved change request may result in modification to the Project Scope or result in changes to the policies, procedure, cost, budget, schedule and Project Management plan etc.
Direct and Manage Project Work

Inputs

• Enterprise Environmental Factors
  – Some of EEF that will influence the Direct and Manage Project Work process are
    • Project Management information system (PMIS), Organizational infrastructure,
    • Company structure
    • Company culture,
    • Stakeholders preferences and
    • Risk tolerances

• Organizational process assets
Direct and Manage Project Work
Tools and Techniques

- Expert judgment
- Project Management Information System
  - The automated Project Management software such as
    - Scheduling tool
    - Configuration Management systems
    - Information collection and distribution systems
- Meetings
  - Each attendee should have a defined role to ensure appropriate participation.
  - Meetings tend to be one of three types
    - Information Exchange
    - Brainstorming, option evaluation or design or
    - Decision Making
Direct and Manage Project Work

- **Deliverables**
  - A unique and verifiable product, service or result produced as a result of the process or phase or Project.

- **Project Document Updates**
  - Some of the documents that may get updated are
    - The requirement documents
    - Project logs (Issue, assumption, etc.,)
    - Risk register and
    - Stakeholder register

- **Work performance data**
  - are the raw observations and measurements identified during activities being performed to carry out the Project work.
  - Ex. : Work completed, Key performance indicators, technical performance measures, start and finish dates of schedule activities, number of change requests, number of defects, actual costs, and actual durations, etc.,
Direct and Manage Project Work

Outputs

- **Project Management Plan Updates**
  - Approved changes may result in updates to some elements of the Project Management plan including the subsidiary plans.

- **Change requests**
  - Change request may be due to a recommended corrective action or preventive action to forestall a negative impact to the Project
  - All the change requests have to be processed through the Project integrated change control process.
  - Corrective action
  - Preventive action
  - Defect Repair
  - Updates
MONITOR AND CONTROL PROJECT WORK

Monitoring and Controlling Process Group

• Develop Project Charter
• Develop Project Management Plan
• Direct and Manage Project Work
• Monitor and Control Project Work
• Perform Integrated Change Control
• Close Project or Phase
Monitor and Control Project Work

- Process of tracking, reviewing and regulating the Projects progress in order to meet the Project performance objectives
- Includes status reporting, progress measurements and forecasting with regard to Scope, schedule, cost, resources, quality and risk etc…
Monitor and Control Project Work

**INPUTS**
- Project Management plan
- Schedule forecasts
- Cost Forecasts
- Validated changes
- Work performance information
- Performance reports
- Enterprise environmental factor
- Organizational process assets

**TOOLS and TECHNIQUES**
- Expert judgment
- Analytical techniques
- Project Management information system
- Meetings

**OUTPUTS**
- Change requests
- Work performance reports
- Project Management plan updates
- Project document updates

Monitor and Control Project Work – Inputs, Tools and Techniques and Outputs
Monitor and Control Project Work

Inputs

• Project Management Plan

• Schedule Forecasts
  It is derived from progress against the schedule baseline and computed time
  Estimate to Complete (ETC), Schedule Variance (SV), Schedule Performance
  Index (SPI)

• Cost Forecasts
  It is derived from progress against the Cost baseline and computed time estimate to
  complete (ETC), Cost Variance (CV), Cost Performance Index (CPI)

• Validated Changes
  Provides the necessary data to confirm that the change was appropriately executed

• Enterprise Environmental Factors

• Organizational Process Assets
Monitor and Control Project Work

Tools and Techniques

- Expert judgment
- Analytical Techniques
  - Forecast potential outcomes based on possible variations of Project or environmental variables and their relationships with other variables
    - Regression analysis
    - Grouping methods
    - Causal analysis
    - Root cause analysis
    - Earned Value Management, Variance analysis, etc.,
- Project Management Information System
- Meetings
Monitor and Control Project Work

Outputs

• Change requests
  – Corrective action
  – Preventive action
  – Defect Repair

• Work performance reports
  Are physical or electronic representation of work performance information complied in Project documents, intended to generate decisions, actions, or awareness.

• Project Management plan updates
• Project document updates
PERFORM INTEGRATED CHANGE CONTROL

Monitoring and Controlling Process Group

- Develop Project Charter
- Develop Project Management Plan
- Direct and Manage Project Work
- Monitor and Control Project Work
- **Perform Integrated Change Control**
- Close Project or Phase
Perform Integrated Change Control

- Is the process of reviewing all change requests, approving the change requests and managing changes to deliverables, Project documents, Organizational Process Assets and to Project Management Plan.
- Is an element of Monitoring and Controlling Process Group
The Change Process

- Evaluate the Impact: Assess the impact of changes (e.g. Three weeks extension, ₹200,000 cost increase)
- Identify Options: Cutting schedule, fast tracking, adding Project risk.
- Get Change request approved internally
- Get Customer approval.
Perform Integrated Change Control

**INPUTS**
- Project Management plan
- Work performance report
- Change requests
- Enterprise environmental factor
- Organizational process assets

**TOOLS and TECHNIQUES**
- Expert judgment
- Meetings
- Change control tools

**OUTPUTS**
- Approved change request
- Change log
- Project Management plan updates
- Project document updates
Perform Integrated Change Control

Inputs

- Project Management plan
- Work performance Reports
- Change requests
- Enterprise Environmental Factors
  - The Project Management information systems
  - Configuration systems
  - Information collection and distribution systems
- Organizational Process Assets
  - Change control procedure
  - Standards, policies, plan with respect to how changes will be initiated, reviewed, approved, validated and implemented
  - The list also includes but not limited to
    - Process measurement data base
    - Project files
    - Configuration Management knowledge base.
Perform Integrated Change Control
Tools and Techniques

- Expert judgment
- Meetings
- Change control tools
  - In order to facilitate configuration and change Management, manual or automated tools may be used.
  - Tools used to manage the change requests and the resulting decisions.
  - Assist the CCB members
Perform Integrated Change Control

Outputs

• Approved change request
  – The team or the member will update the status of the change request whether it is approved or not in the change request log.

• Change Log
  – Is used to document change that occur during Project. Rejected change requests are also captured in the change log.

• Project Management Plan updates
  – May result in updates to some subsidiary plan and also to baselines

• Project document updates
  – Project documents that may get updated include change request logs
  – Any other documents that are subjected to formal change control process.
CLOSE PROJECT OR PHASE

Closing Process Group

- Develop Project Charter
- Develop Project Management Plan
- Direct and Manage Project Work
- Monitor and Control Project Work
- Perform Integrated Change Control
- **Close Project or Phase**
Close Project or Phase

• Is the process of formally closing the all the Project activities
• The close Project or Phase includes all the activities that are necessary for the administrative closure of the Project
  – To ensure that the Project satisfactorily meet its exit criteria for the Project or a phase.
  – To transfer the Project service, results or products to the next phase or to production or operations
  – To ensure collection of all Project records, lessons learned documents and archive them for organization’s future use.
• Is an element of Closing Process Group
Activities of a Close Phase

- Confirm work is done to requirement
- Complete Procurement Closure
- Gain final acceptance of the product
- Complete Financial closure
- Hand off completed product
- Solicit feedback from the customer about the product
- Index and Archive records
- Gather final lessons learnt and update knowledge base
Close Project or Phase

**Inputs**
- Project Management plan
- Accepted deliverables
- Organizational process assets

**Tools and Techniques**
- Expert judgment
- Analytical techniques
- Meetings

**Outputs**
- Final product, service, or result transition
- Organizational Process Assets updates

Close Project or Phase – Inputs, Tools and Techniques and Outputs
Close Project or Phase

Inputs

• Project Management plan
  – Provides information on how the Project has to be closed formally.

• Accepted deliverables
  – Deliverables of the Project or phase those are accepted through the Verify Scope process.

• Organizational Process Assets
  – Project or phase closure guidelines
  – Lessons learned documents and templates
Close Project or Phase
Tools and Techniques

- **Expert judgment**
  - The Project Manager or his team can sought the opinion of an expert to ensure that the Project is closed as per standards

- **Analytical Techniques**
  - Regression analysis and Trend Analysis

- **Meetings**
  - Types of meetings include, but are not limited to lessons learned, closeout, user group and review meetings
Close Project or Phase Outputs

- Final product, service, or result transition
  - The transfer of the final product, service or result of the Project or intermediate product or service or results, in case of a phase closure

- Organizational Process Assets updates
  - Project files.
  - Project or Phase closure documents
  - Historical information
Discussion Topic
Q and A