



Definition

- **Project Integration Management** includes the processes required to ensure that the various elements of the project are properly coordinated. It involves making tradeoffs among competing objectives and alternatives to meet stakeholder needs and expectations.

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This slide is enclosed in a black rectangular border. It features the title 'Definition' in a large, bold, black font. Below the title is a single bullet point with a black circular marker, defining Project Integration Management. At the bottom, there is a dark grey bar containing the company name and website, and a small number '2' on the right side.

Processes

Apply the six Processes of project integration management to any project, regardless of project size or duration:

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

Develop Project Management Plan

- All of the defined work must be planned, estimated and scheduled, and authorized with the use of detailed integrated management control plans sometimes called *Control Account Plans (CAP)*
- The project plan is used to:
 - Guide execution
 - Document assumptions
 - Document decisions regarding. all alternatives
 - Facilitate communication
 - Define reviews - content, extent, & timing.
 - Provide a baseline

Project planning methodology

- Structured approach used to guide the development of the project plan;
 - hard tools (software) or soft tools (meetings);
 - Simple (templates or forms) or complex (Monte Carlo simulation)
 - Formal or informal

Project Management Information System

- Consists of the tools and techniques used to gather, integrate, and disseminate information and outputs from other PM processes

Project Plan

It includes:

- Project charter
- PM approach or strategy
- Scope statement
- Work breakdown structure (WBS)
- Cost estimates
- Schedule
- Performance measurement baselines
- Major milestones and target dates
- Key or required staff
- Key risks
- Open issues and pending decisions

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Inputs from Direct and Manage Project Execution

- **Preventive action**
 - Anything that reduces the probability of potential consequences of project risk events
- **Corrective action**
 - Anything done to bring future performance in line with the project plan
 - Output of the various control processes
 - Completes feedback loop to ensure effective PM.

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Direct & Manage Project Execution

- Obtain, manage, and use resources including materials, tools, equipment, and facilities
- Implement the planned methods and standards
- Create, control, verify, and validate project deliverables
- Manage risks and implement risk response activities
- Manage sellers, Adapt approved changes into the project's scope, plans, and environment
- Establish and manage project communication channels, both external and internal to the project team
- Collect project data and report cost, schedule, technical and quality progress, and status information to facilitate forecasting
- Collect and document lessons learned , and implement approved process improvement activities.

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Overall Change Control

PMBOK says the PM should:

- Preventing unnecessary changes
- Influence the factors that affect change .
- Ensure the change is beneficial.
- Determine a change has occurred.
- Determine if change is needed .
- Look for alternatives
- Notify stakeholders affected.
- Manage changes as they occur.

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Change control system

- A collection of formal, documented procedures that define the steps for changing official project documents
- Includes paperwork, tracking system, processes, and approval levels necessary for authorizing changes.
 - Change Control Board (CCB)
 - Engineering Review Board (ERB)
 - Technical Review Board (TRB)
 - Technical Assessment Board (TAB)

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Change control system (cont'd)

Includes both hard (Procedures) and soft (SW, management practices) aspects:

- Change control plan .
- Change control board .
- Change control procedures
- Performance statistics
- Meetings
- Reports

- Change forms
- Specification reviews
- Demonstrations
- Testing
- Meetings
- Plans for taking corrective actions.

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Configuration Management System

Provides documented procedures for:

- Identifying and documenting the functional and physical characteristics of an item or a system
- Controlling any changes to identified characteristics
- Recording and reporting both the change and its status
- Auditing the configuration items and systems to verify conformance to requirements

Configuration management activity

- Configuration Identification.
- Configuration Status Accounting.
- Configuration Verification and Auditing

Change Control : Who can make a change?

Exam tip: The person who signed or is responsible is the one authorized to make the change

- *Examples:*

- ***Project charter:** The one who signed is the one who can authorize change

- ***Within the project plan:** The project manager is responsible

- ***Main objectives of project plan:** Management needs to be involved in changes to quality , time , cost , and scope.

Formulating Project Closeout

- Delivering the product or service of the project doesn't mean it's been completed satisfactorily. A project is completed successfully when it meets stakeholders' expectations and satisfies the goals of the project.
- During the Closing processes—Close Project and Contract Closure—acceptance of the product of the project is documented with a formal sign-off and the project records are filed for future reference.
- The formal signoff is how the stakeholders will indicate that the goals have been met and that the project meets their expectations so that the project ends.
- Projects come to an end for several reasons:
 - They're completed successfully.
 - They're canceled or killed prior to completion.
 - They evolve into ongoing operations and no longer exist as projects.

Types Of Projects' Closeout

Addition

- Projects that evolve into ongoing operations are considered projects that end due to *addition*; in other words, they become their own ongoing business unit. A project is considered a project when it meets these criteria: It is unique, has a definite beginning and ending date, and is temporary in nature. When a project becomes an ongoing operation, it is no longer a project.

Starvation

- When resources are cut off from the project or are no longer provided to the project, it's starved prior to completing all the requirements and you're left with an unfinished project on your hands. *Starvation* can happen for any number of reasons:
 - Other projects come about and take precedence over the current project, thereby cutting
 - the funding or resources for your project.
 - The customer curtails an order.
 - The project budget is reduced.
 - A key resource quits.

Resource starving can include cutting back or withholding human resources, equipment and supplies, or money. That's one of the reasons why project documentation is such an important function.

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Types Of Projects' Closeout (Cont'd)

Integration

- *Integration* occurs when the resources of the project—people, equipment, property, and supplies—are distributed to other areas in the organization or are assigned to other projects.
- The difference between starvation and integration is that starvation results in funding or resource cuts while integration results in reassignment or redeployment of the resources.
- Again, good documentation describing the circumstances that brought about the ending of a project due to integration should be archived with the project records for future reference.

Extinction

- This is the best kind of project end because *extinction* means the project has been completed and accepted by the stakeholders. As such, it no longer exists because it had a definite ending date, the goals of the project were achieved, and the project was closed out.

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Closing Process Group

Includes the processes used to

- Formally terminate all activities of a project or a project phase.
- Hand off the completed product to others or close a cancelled project.

So that, This Process Group, *when completed*, verifies that the *defined processes are completed* within *all the Process Groups* to close the project or a project phase, as appropriate, and formally establishes that the project or project phase is finished.

Repeating Close out at Each Stage

- The customer should formally accept the product of the project and your teams' progress as being complete.
- The complexity of acceptance depends on:
 - Size of the project
 - Whether the project is internal or external
 - The nature of the product
 - Industry standards
 - The organizations and people involved

Repeating Close out at Each Stage (con't)

- By involving the customers throughout the project—using testing and evaluation steps—you ensure that they are satisfied at the end of each stage.
- Satisfying customers by balancing their various interests is the main goal of any project. This is performed by keeping them informed about the project's details so that their expectations are handled carefully.
- Anything that might delay payments is a red flag.
- An unhappy customer might terminate the project in the middle.

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Repeating Close out at Each Stage (con't)

- A formal acceptance documentation should be prepared and distributed. It shows that the clients or sponsors have accepted the product of the project or the phase.
- The closeout processes involve:
 - Contract administrator
 - Suppliers
 - Subcontractors.

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Evaluating Work Packages

- Make sure to complete all criteria in each task other wise this might cause problems.
- It will be easier to approve the work if:
 - The work packages are easy to understand and track.
 - The people performing the work understand their responsibilities
- The project manager is generally more concerned with inspecting the quality and scope of the deliverables for completeness.

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Retaining the Knowledgebase

The following processes should be completed for retaining the knowledgebase for future projects and phases:

- Conduct a phase review or project post mortem. This includes:
 - Administrative Closure
 - Contract Closure
- Document lessons learned
- Archive project records

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Closing Down Administrative Functions

- Inputs:
 - Performance measurement documentation
 - Product documentation
 - Other project records
- Tools and techniques:
 - Performance reporting tools and techniques
 - Project reports
 - Project presentations
- Outputs:
 - Project archives
 - Project closure
 - Lessons learned

Contract Closure

- Input:
 - Contract documentation
- Tools and techniques:
 - Procurement audits
- Outputs:
 - Formal acceptance and closure
 - Contract file

Administrative closure and contract closeout is a favorite topic in the exam.

Handling Staff During Closing

- Releasing resources
 - Staff should not be released too soon or too late. Poor timing is costly to the project.
 - Decision varies depending on the policies of the performing organization and the organizational structure.
 - The staffing management plan should include a section that describes when and how resources should be removed from the project.

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Handling Staff During Closing (con't)

- Rewarding performance
 - The reward and recognition system that was originally created during the Team Development process should be promoted and reinforced in the closing stage.
 - Some organizations have formal reward and recognition systems yet unwritten rules depend on each organization.

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Question 1

- Effective project integration usually requires an emphasis on:
 - A. The personal careers of the team members
 - B. Timely updates to the project management plan.
 - C. Effective communications at key interface points.
 - D. Product control

Answer C

- This question is asking for the most important of the choices. Think about what is involved in integration—project management plan development, project management plan execution and integrated change control. In order to integrate the project components into a cohesive whole (integration), communication is key when one activity will interface with another, one team member will interface with another, and any other form of interfacing. Choices B and D are only parts of the monitoring and controlling process group, while integration includes more than control. Choice A falls under project management plan execution.

Question 2

- The need for_____ is one the major driving forces for communication in a project.
 - A. Optimization
 - B. Integrity
 - C. Integration
 - D. Differentiation

Answer C

- The project manager is an integrator. This a question about your role as an integrator and communicator.

Question 3

- Which of the following describes the BEST use of historical records from previous projects:
 - A. Estimating, life cycle costing and project planning
 - B. Risk management, estimating and creating lessons learned
 - C. Project management planning, estimating and creating a status report
 - D. Estimating, risk management and project planning.

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Answer D

- Historical records are not generally used for life cycle costing (choice A) lessons learned (choice B) or creating status reports (choice C).

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Question 4

- When it comes to changes, the project manager's attention is BEST spent on:
 - A. Making changes.
 - B. Tracking and recording changes.
 - C. Informing the sponsor of changes.
 - D. Preventing unnecessary changes.

Answer D

- Project managers should be proactive. The only proactive answer here is preventing unnecessary changes.

Question 5

- The sponsor's role on project is BEST described as:
 - A. Helping to plan activities
 - B. Helping to prevent unnecessary changes to project objectives.
 - C. Identifying unnecessary project constraints.
 - D. Helping to put the project management plan together.

Answer B

- Though the sponsor may help with some of the activities (choice A) it is not his exclusive duty. Some project constraints (choice C) come from the sponsor, but they should be considered necessary. The project management plan (choice D) is created by the team and approved by the sponsor and other management. Since the project objectives are stated in the project charter and it is the sponsor issues the project charter, choice B is the correct answer.