



PROJECT INTEGRATION MANAGEMENT





Project Integration Management

MODULE OBJECTIVES

At the end of this session, participants will be able to:

- **Verify** the 49 Processes, 5 Process Groups & 10 Knowledge Areas of Project Management.
 - **Understand** how to Engage Project Management Processes in Practice.
 - **Identify** the 7 Processes of Project Integration Management
 - **Use** the different Project Selection Methods.
 - **Explain** the Inputs, Tools & Techniques and Outputs that are required for the 7 Project Integration Management Processes.
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Project Integration Management

PROCESSES

According to the **PMBOK® Guide**, A Process is a set of interrelated **actions** and **activities** performed to achieve a pre-specified result. It has inputs, tools & techniques that can be applied and a resultant outputs. In short, a Process are **Series of actions that achieve a result.**

Project Management **Processes** therefore are the series of **actions** that you take to successfully manage a project to meet the project requirements.

The **PMBOK® Guide 6th edition** established **49 processes** as a standard for the management of any project. These 49 processes are grouped into **(5 Process Groups)**, & **(10 Knowledge Areas)**.

This does not mean that for every project you must apply these 49 processes uniformly. **NO!** For every project, the project manager in collaboration with the project team should determine which of the **processes** are appropriate to use. In other words, you **TAILOR** the processes to the particular project that you are faced with.

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PROCESS GROUPS

PROCESS GROUPS: The 49 project management **processes** are grouped into 5 categories known as Project Management Process Groups. Project Management **Process Groups** help to organize the Project Management **Processes** according to the kind of work that they do. The Process Groups describes what a Project Manager must do.

The Five (5) Project Management Process Groups are:

- Initiating process group: Start the Cycle
- Planning process group : Plan
- Executing process group: Do
- Monitoring and Controlling process group: Check & Act
- Closing process group: Close the Cycle



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Initiating Process Group



The **INITIATING PROCESS GROUP**, as its name implies, occurs at the beginning of the project and at the beginning of each project phase for large projects if they are broken into phases.

It consists of those processes performed to define a new project or a new phase of an existing project. It acknowledges or obtains the authorization that a project, or the next project phase, should begin/start.

Within the initiating process group, the initial project scope is defined, financial resources are committed and the stakeholders (Internal & External) are identified. The Project manager is also selected and assigned under this initial stage. It is wise to involve the stakeholders during this stage of any project, as this will improve the probability of shared ownership of the project, deliverable acceptance, and secure their satisfaction.

Project Integration Management

Initiating Process Group

There are 2 project management processes under this group:

1. Develop Project Charter



2. Identify Stakeholders



Project Integration Management

Planning Process Group



The **PLANING PROCESS GROUP** consist of those processes that are performed to establish the DETAILED scope of the project, properly refine the project objectives, and develop the course of required action that are needed to attain the project objectives (Deliverables).

Under the **PLANING PROCESS GROUP**, The Project Management Plan that is developed has the potential to undergo change(s) because more detailed, specific or accurate information becomes available throughout a project's lifecycle. So therefore the Project Management Plan is said to be iterative & goes through Progressive Elaboration.

PLAN FIRST!



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Planning Process Group

This group develops the project management plan and other project documents that will be used to carry out the work of the project.



There are 24 project management processes under this group.





Project Integration Management

Planning Process Group

1. Develop Project Management Plan
2. Plan Scope Management
3. Collect Requirements
4. Define Scope
5. Create the Work Breakdown Structure (WBS)
6. Plan Schedule Management
7. Define Activities
8. Sequence Activities
9. Estimate Activities Duration
10. Develop Schedule
11. Plan Cost Management
12. Estimate Cost
13. Determine Budget
14. Plan Quality Management
15. Plan Resources Management
16. Estimate Activities Resources
17. Plan Communications Management
18. Plan Risk Management
19. Identify risk
20. Perform Qualitative Risk Analysis
21. Perform Quantitative Risk Analysis
22. Plan Risk Response
23. Plan Procurement Management
24. Plan Stakeholder Engagement

Project Integration Management

Executing Process Group



The **EXECUTING PROCESS GROUP** consist of those Processes that are performed to complete the work that is outlined in the Project Management Plan. It involves putting the **project management plan into action.**

It's here that the project manager will coordinate and direct project resources (People, Materials, etc) to meet the objectives of the project plan. The Executing process keeps the project plan on track and ensures that future execution of project plans stays in line with project objectives.

The Executing process group will **utilize the most project time and resources**, and as a result, costs are usually highest during the Executing process. Project managers will experience the greatest conflicts over schedules in this cycle.

Project Integration Management

Executing Process Group

There are 10 project management processes under the **EXECUTING PROCESS GROUP** :

1. **Direct & Manage Project Work**
2. **Manage Project Knowledge**
3. **Manage Quality**
4. **Acquire Resources**
5. **Develop Team**
6. **Manage Team**
7. **Manage Communications**
8. **Implement Risk Responses**
9. **Conduct Procurements**
10. **Manage Stakeholder Engagement**



Project Integration Management

Monitoring and Controlling Process Group



The **MONITORING & CONTROLLING PROCESS GROUP** consist of those processes that are required to track, review and regulate the progress & performance of the project.

Under monitoring & controlling, the project manager must control the work the project team and the vendors are completing. The project manager checks that the deliverables of the phases are in alignment with the project scope, defends the scope from changes, and confirms the expected level of quality of the work being performed. The *Monitoring and Controlling* process group is where **project performance measurements are taken and analyzed to determine whether the project is staying true to the project plan.**

Project Integration Management

Monitoring and Controlling Process Group

There are 12 project management processes under the **MONITORING & CONTROLLING PROCESS GROUP** :

1. Monitor & Control Project Work
2. Perform Integrated Change Control
3. Validate Scope
4. Control Scope
5. Control Schedule
6. Control Costs
7. Control Quality
8. Control Resources

9. Monitor Communications

10. Monitor Risks

11. Control Procurements

12. Monitor Stakeholder Engagement



Project Integration Management

Closing Process Group



The **CLOSING PROCESS GROUP** consist of the Processes performed to finalize all activities across all the project management process groups and to formally conclude the project, phase and all contractual obligations. It is also known as Project Postmortem.

Closing brings a formal, orderly end to the activities of a project phase or to the project itself. Once the project objectives have been met, most of us are ready to move on to the next project. However, Closing is important because all the project information is gathered and stored for future reference. The documentation collected during the Closing process group can be reviewed and utilized to avert potential problems on future projects. Contract Closeout occurs here, and formal acceptance and approval of the product, service or result are obtained from project stakeholders.

There is just 1 project management process under this Group:

1. Close Project or Phase

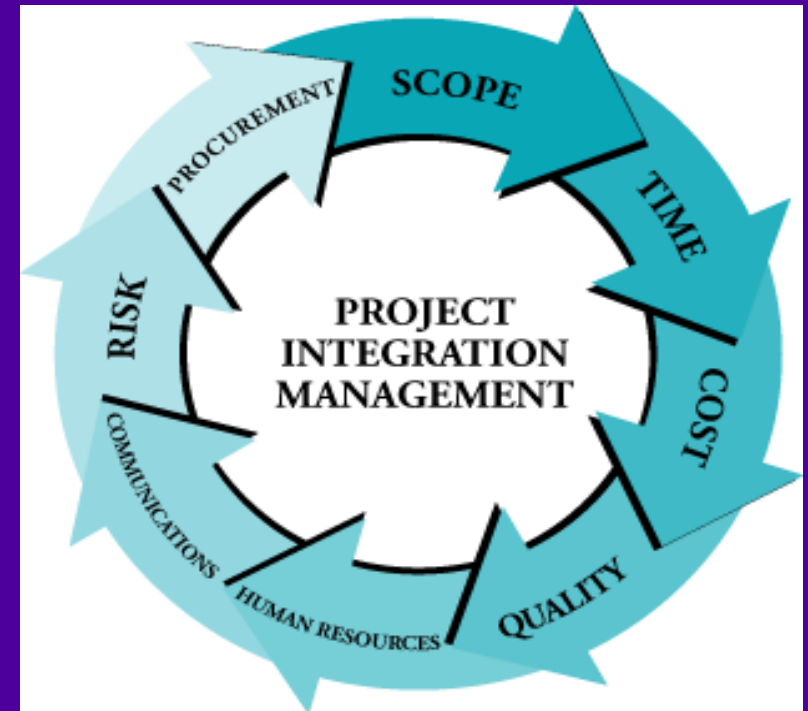
Project Integration Management

Eco-Ways
LIMITED

KNOWLEDGE AREAS

KNOWLEDGE AREAS: The 49 project management processes are also organized by subject matter into 10 **Knowledge Areas.** These knowledge areas simply describes what (subject areas) a Project Manager needs to know. They are:

- . Project Integration Management
- . Project Scope Management
- . Project Schedule Management
- . Project Cost Management
- . Project Quality Management
- . Project Resource Management
- . Project Communications Management
- . Project Risk Management
- . Project Procurement Management
- . Project Stakeholder Management





Project Integration Management

Project Integration Management is an element of project management that coordinates & Integrates all aspects of a Project. It ensures that all processes in a project run smoothly.

Project Integration Management includes those processes and activities needed to identify, define, combine, unify, and coordinate the various processes and project management activities within the Project Management Process Groups.

Project Integration Management includes 1. The creation and approval of the project plan 2. Executing the project plan 3. Managing, controlling, and documenting changes to the project plan, and 4. Closing all activities on the project.

Project Integration Management entails making choices about resource allocation, making trade-offs among competing objectives and alternatives, and managing the interdependencies among the project management Knowledge Areas for the overall project good.

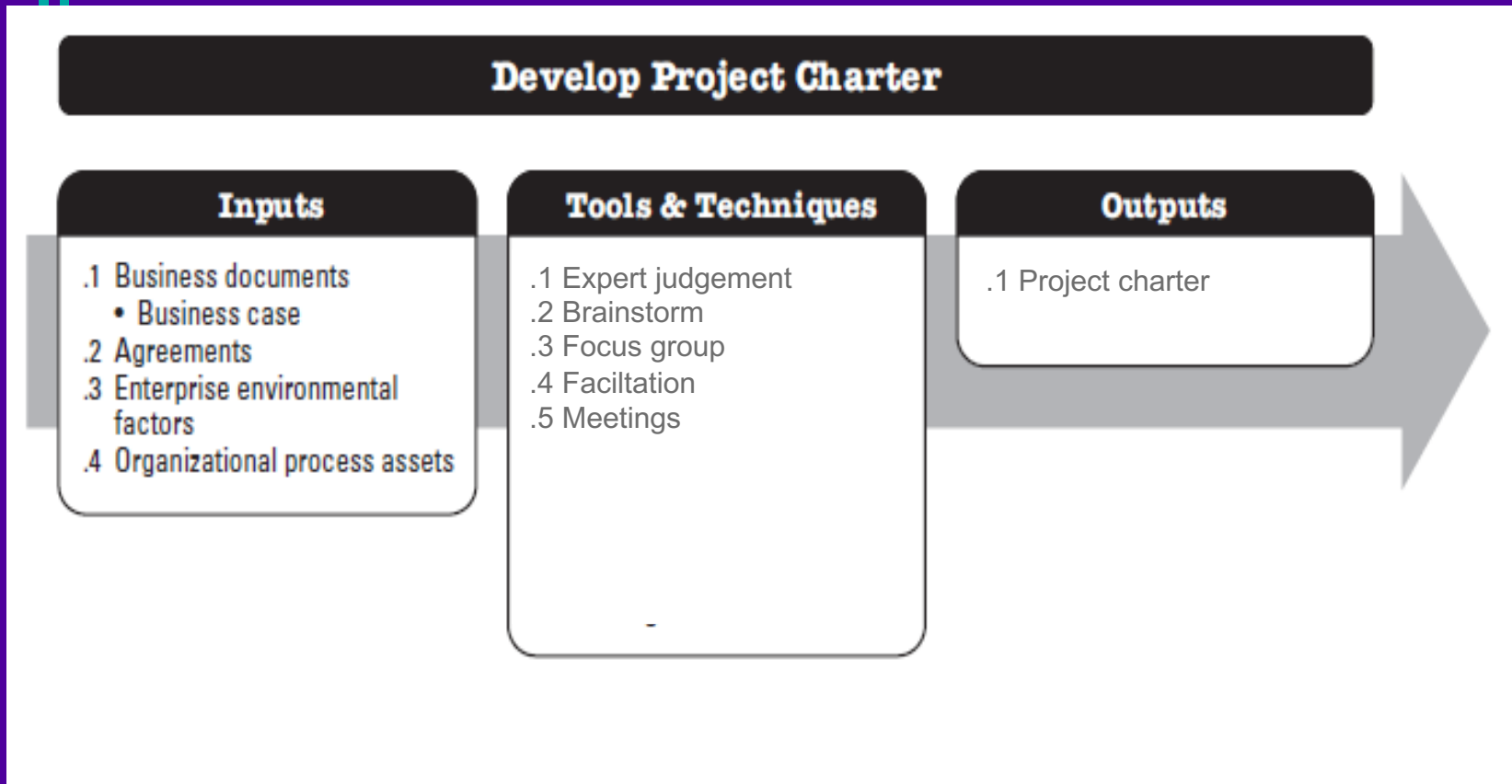


Project Integration Management

Develop Project Charter

- The Project Charter when signed is the document that formally authorizes or initiates a Project or a Phase¹. It also documents those requirements that will satisfy the needs & expectations of the stakeholders². The project charter provides the project manager with the authority to apply organizational resources to project activities³.
 - A project initiator or sponsor which is external to the project organization, and at a level that is appropriate to funding the project, issues the project charter. This document also establish a partnership between the performing organization and the requesting organization⁴.
 - The project manager should always be identified and assigned preferably while the CHARTER IS BEING DEVELOPED, and prior to the start of planning. In some cases, the Project Manager may prepare the charter for and in consultation with the sponsor, but it MUST be signed or thumb printed by the SPONSOR as the case may be.
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Project Integration Management



Project Integration Management

Develop Project Charter

Business Documents

- Business Case provides all the necessary information from a business standpoint to justify or back up the worth of investment on the project. Basically, the business need and the cost-benefit analysis for the project make up this document. While the Benefits Management Plan will describe how the benefits of the project will be delivered and when they will be delivered.

Agreements

- This is used to define the initial intention of the project. It may take the form of either a contract, Memorandum of Understanding (MOU), Service Legal Agreement (SLA), Letter of Agreement or Intent, Verbal Agreement, etc.

Enterprise Environmental Factors (EEF)

- Governmental regulations or industry standards, Market place conditions, Political Climate, Stakeholders risk tolerances, etc.

Organizational Process Assets (OPA)

- Organizational Standard Policies, Processes and Procedures, Corporate Knowledge Base- such as historical information, lessons learned repository, etc

Project Integration Management

Develop Project Charter

1. Expert Judgment

Expert judgment also called SME (Subject Matter Expert) is often used to develop the project charter. The idea is to rely on individuals, or groups of, people, who have training, or skills in the areas you're assessing. They may be stakeholders, consultants, other experts in the organization, or technical or professional organizations.



2. Brainstorming

Brainstorming is typically conducted in a facilitated session or workshop environment to stimulate creative thinking, to create novel or innovative solutions to a problem



Project Integration Management

Develop Project Charter

3. Focus Group

Focus groups bring together prequalified stakeholders and subject matter experts to learn about their expectations and attitudes about a proposed product, service, or result. A trained moderator guides the group through an interactive discussion designed to be more conversational than a one-on-one interview.



4. Facilitation

Facilitation is a specific skill that is used in project meetings to bring out the best and resolve the worst in a group, in service of a project goal. The meeting is a tool that advances the project goals by balancing the needs of the project and the people.

5. Meetings

During this process, meetings are held with key stakeholders to define and identify project objectives, success criteria, major deliverables, high-level requirements among other summary information

Project Integration Management

Develop Project Charter

OUTPUTS

Project Charter

- The project charter as earlier mentioned is the document that formally ***authorizes a project***.
- The project charter is not complete until you have received sign-off from the project sponsor, senior management, and key stakeholders in case the Project Manager prepares it. Sign-off indicates that the document has been read by those signing it and that they agree with its contents and are on board with the project. It also involves the major stakeholders right from the beginning and should win their continued participation in the project going forward. If someone has a problem with any of the elements in the charter, during the sign-off is the time to raise the red flag.





Project Integration Management

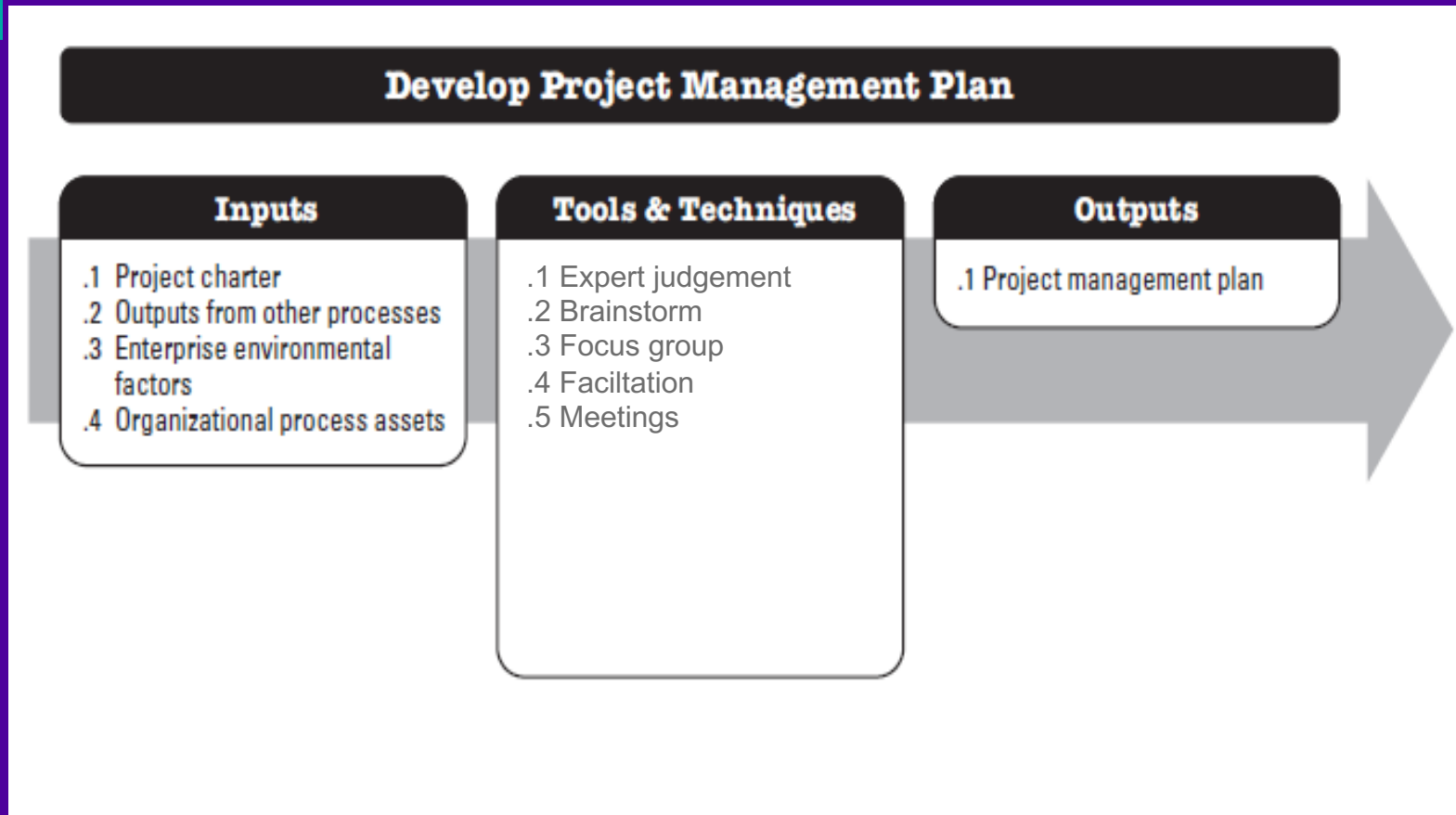
Develop Project Management Plan

Project Managers must **PLAN** before they begin to **ACT.** The Develop Project Management Plan Process focuses on **defining** the strategy for managing the project as well as for conducting the different processes under the different Knowledge Areas. This Process documents the **actions** necessary to **define, prepare, integrate, and coordinate** all subsidiary Management Plans of (Scope, Time, Cost, Quality, HR, Communications, Risk, Procurement & Stakeholder Management) into a Project Management Plan.

The project management plan defines how the project will be **executed,** how it will be **monitored and controlled,** and how it will be **closed.**

In practice, when developing the Project Management Plan, you simply document how you will **define¹**, **plan²**, **manage** & **control³** - Scope, Time, Cost, Quality, HR, Communications, Risk & Procurement. The **format**, **style** and **level of details** of the Project Management Plan depends on the type and needs of project, style of the project manager and the organizational influences.

Project Integration Management





Project Integration Management

Develop Project Management Plan

INPUTS

Project Charter

- This document from the client defines the high-level boundaries of the project, and the project manager uses this information to start the initial planning.

Outputs From Other Processes

- Outputs from many of the other processes from Project Scope Management to Stakeholders Management are integrated to create the project management plan. Baselines & Subsidiary management plans are all inputs to this process

Enterprise Environmental Factors (EEF)

- The EEF that can influence this process are: Government or industry standards, organizational structure, culture, etc.

Organizational Process Assets (OPA)

- The OPA that can influence this process are: Templates, Change control procedures, historical information, etc.

Project Integration Management

Develop Project Management Plan

1. Expert Judgment

□ When developing the Project Management Plan, SME is needed to:

- Tailor the process to meet project needs
- Develop **technical** & **management** details to be included in the Project Management Plan.
- Determine resources & skills level needed to perform project work.
- Define the level of configuration management to apply on the project
- Determine which project documents will be subject to the formal change control process, Etc.



2. Brainstorming

Brainstorming is typically conducted in a facilitated session or workshop environment to stimulate creative thinking, to create novel or innovative solutions to a problem



Project Integration Management

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3. Focus Group

Focus groups bring together prequalified stakeholders and subject matter experts to learn about their expectations and attitudes about a proposed product, service, or result. A trained moderator guides the group through an interactive discussion designed to be more conversational than a one-on-one interview.



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5. Meetings

During this process, meetings are held with key stakeholders to define and identify project objectives, success criteria, major deliverables, high-level requirements among other summary information

Project Integration Management

Develop Project Management Plan

OUTPUTS

Project Management Plan



- This document is a plan that integrates and consolidates all the subsidiary management plans and baselines from other processes under the Planning Process Groups. It describes how the project will be EXECUTED, MONITORED and CONTROLLED and CLOSED. **It includes:**
- **Baseline (Scope baseline, Schedule baseline, cost baseline).**
- **Subsidiary Management Plans (from Scope – Stakeholders Management)**
- **Details of tailoring decisions**
- **Change & configuration management plans**
- **Project Lifecycle**
- **Development Approach**
- Once this document is baselined, it can only be updated through a change request
- It is the primary document used to manage the project in addition with other project documents.

Project Integration Management

Project Management Plan & Project Documents

Project Management Plan	Project Documents	
1. Scope management plan	1. Activity attributes	19. Quality control measurements
2. Requirements management plan	2. Activity list	20. Quality metrics
3. Schedule management plan	3. Assumption log	21. Quality report
4. Cost management plan	4. Basis of estimates	22. Requirements documentation
5. Quality management plan	5. Change log	23. Requirements traceability matrix
6. Resource management plan	6. Cost estimates	24. Resource breakdown structure
7. Communications management plan	7. Cost forecasts	25. Resource calendars
8. Risk management plan	8. Duration estimates	26. Resource requirements
9. Procurement management plan	9. Issue log	27. Risk register
10. Stakeholder engagement plan	10. Lessons learned register	28. Risk report
11. Change management plan	11. Milestone list	29. Schedule data
12. Configuration management plan	12. Physical resource assignments	30. Schedule forecasts
13. Scope baseline	13. Project calendars	31. Stakeholder register
14. Schedule baseline	14. Project communications	32. Team charter
15. Cost baseline	15. Project schedule	33. Test and evaluation documents
16. Performance measurement baseline	16. Project schedule network diagram	
17. Project life cycle description	17. Project scope statement	
18. Development approach	18. Project team assignments	



Project Integration Management

Develop Project Management Plan

Determine Appropriate Project Methodology

There is no one way to manage every project. The understanding and knowledge of project management best practice is one way and the other way is to determine and apply the most appropriate methodology to your project

Agile

- Modern approach where team works collaboratively with the customer to determine the project needs.
- The coordination of the customer and the team drives the project forward.
- Suitable for projects in complex environment where the end product is not fully known and user feedback is very valuable. Example is Software project or Intellectual property & research

Predictive/Plan Driven

- Traditional approach where the project needs, requirements, and constraints are understood, and plans are developed accordingly.
- The plans drive the project forward.
- Suitable for projects where predictability and coordinated timing is important,. Example is construction projects

Hybrid

- A combined approach that uses a strategy from agile or predictive for a specific need.
- Project might switch approaches based on need, changing work requirements, or circumstances.

Project Integration Management

Develop Project Management Plan

Establish Project Governance Structure

Organizations use governance guidelines to establish strategic direction and performance parameters. Therefore, Governance structure refers to **the framework of project management, especially regarding rules, procedures, roles, and the division of responsibilities within the whole decision-making process**. It keeps the project in check, allowing it to run flawlessly and in accordance with the plan. In organizations with PMO, governance is generally managed & controlled by the PMO

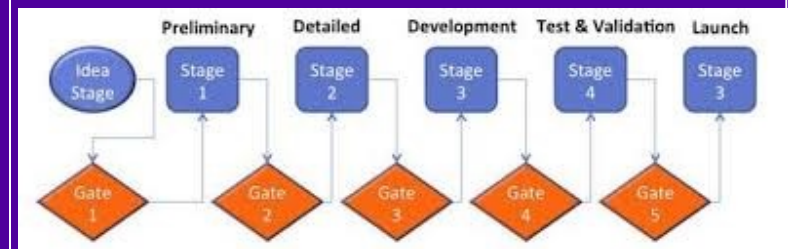
DETERMINE APPROPRIATE GOVERNANCE FOR A PROJECT

Project Governance Framework can include:

- Project success & deliverable acceptance criteria
- Defined processes to manage projects from start – finish
- Communication processes & procedures
- Process for review & approval of changes above certain thresholds
- Project organizational roles, charts & responsibilities
- etc

DETERMINE ESCALATION PATHS & THRESHOLDS

A Phase gate is also known as governance gate, tollgate or kill point Which is a review at the end of a phase to decide what next to do.





Project Integration Management

Direct and Manage Project Execution

The Direct and Manage Project Execution process requires the Project Manager and the Project Team to integrate all the executing process group processes to perform the work or actions defined in the Project Management Plan and produce **Deliverables**.

The Direct and Manage Project Execution process involves Acquiring & **Managing people**, Performing Quality Assurances, **Doing the work** and **Implementing approved changes**.

Some of those actions performed during this process are:

- Perform activities to accomplish project objectives
- Create deliverables
- Obtain, manage & use resources (materials, equipments, facilities, etc)
- Generate project **data, progress, status** to facilitate **Forecast** & **EVM**
- Expend effort and spend funds to accomplish the project objectives
- Issue change requests and adapt approve changes into project scope, plans, etc.
- Obtain quotations, bids, offers, or proposals as appropriate
- Select sellers by choosing from among potential sellers
- Collect & document lesson learned (organizational process assets), and approve process improvement processes.

Project Integration Management

Direct and Manage Project Work

Inputs

- .1 Project management plan
 - Any component
- .2 Project documents
 - Change log
 - Lessons learned register
 - Milestone list
 - Project communications
 - Project schedule
 - Requirements traceability matrix
 - Risk register
 - Risk report
- .3 Approved change requests
- .4 Enterprise environmental factors
- .5 Organizational process assets

Tools & Techniques

- .1 Expert judgment
- .2 Project management information system
- .3 Meetings

Outputs

- .1 Deliverables
- .2 Work performance data
- .3 Issue log
- .4 Change requests
- .5 Project management plan updates
 - Any component
- .6 Project documents updates
 - Activity list
 - Assumption log
 - Lessons learned register
 - Requirements documentation
 - Risk register
 - Stakeholder register
- .7 Organizational process assets updates



Project Integration Management

Direct and Manage Project Execution

INPUTS

Project Management Plan

- The project management plan contains subsidiary management plans concerning all aspects of the project such as (scope, requirements, schedule, cost, stakeholder, etc).

Project Documents

- Project document required as input during this process can include Change Log, Lessons learned register, Project communications, Schedule, etc

Approved Change Requests

- These are outputs of the perform integrated change control process. Only these request can be implemented during this process. The approved change request maybe a corrective action, preventive action or a defect repair.

Enterprise Environmental Factors (EEF) & Organizational Process Assets (OPA)

- The EEF that can influence this process are: Organizational structure, culture, infrastructure, PMIS, Stakeholders risk tolerances, etc. While the OPA are Standardized guidelines, issue and defect management procedure, files from previous projects, project measurement database,

Project Integration Management

Direct and Manage Project Execution

1. Expert Judgment

The expert judgment that is required to direct & manage project execution comes from the project manager and the project team using specialized knowledge, experience or training. SME from other units of the performing organization, external consultants, professional and technical associations can also be used.



2. Project Management Information Systems

This is part of the enterprise environmental factors, and it refers to automated tools that can be used for the management of projects, such as: Scheduling software tools, configuration management systems, an information collection & distribution systems (Computer),



Project Integration Management

Direct and Manage Project Execution

3. Meetings

Meetings are used to discuss and address project pertinent topics and issues. Meetings could be to:

- Exchange project information
- Make decisions
- Brainstorm on project issues





Project Integration Management

Direct and Manage Project Execution

OUTPUTS

Deliverables

- These are tangible components (product, service or result) that are completed to meet the project objectives.

Project Management Plan & Documents (Artifacts) Update

- The requirements, schedule, cost, quality management plan, etc are some of these affected Project Management Plans that could be updated. While Project Documents are Requirement documentation, Assumption log, risk register, stakeholder register, Issue Log, etc

Organizational Process Assets Updates

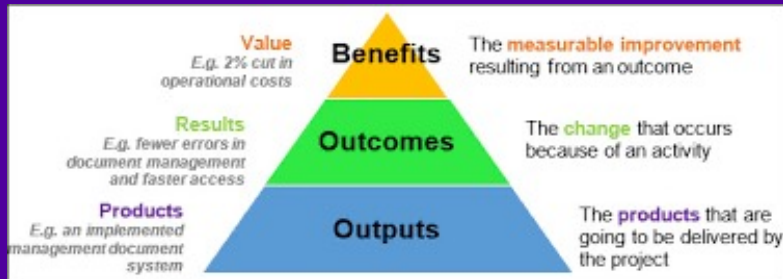
- Any Organizational process assets can be updated during this process, such as lessons learned, etc.

Project Integration Management

Direct and Manage Project

Execute Project to Deliver Business Value

Projects are commissioned to deliver value within the time constraint because customers want to see and consume the value. These value can be Financial, First to the market, Social or technological, etc. Business value* The net quantifiable benefit derived from a business endeavor. The benefit may be tangible, intangible, or both.



- ❑ **INCREMENTAL DELIVERY:** Early and regular incremental releases
 - Enables the customers to receive parts or elements of the product prior to the full product delivery.
 - Allows users and the business to consume the targeted value and provide feedback to the project team

- ❑ **PRODUCT ROADMAP** Serves as a high-level visual summary of the product or products of the project.

- ❑ **MINIMUM VIABLE PRODUCT** is the smallest collection of features that can be included in a product for customers to consider it functional. In Lean methodologies, it can be referred to as "bare bones" or "no-frills" functionality.

Project Integration Management

Direct and Manage Project

Create Project Artifacts

Project Artifact

- Any document related to the management of a project. The project team will create and maintain many artifacts during the life of the project, to allow reconstruction of the history of the project and to benefit other projects.
- Project Management Plan & project Documents are called Artifacts

Artifacts unique to agile projects

- Product Backlog, Product Increment, Product Roadmap, Product Vision Statement, Release Plan, Sprint Backlog are examples.

Configuration management

- A tool used to manage changes to a product or service being produced as well as changes to any project documents



Project Integration Management

Direct and Manage Project Execution

Manage Project Changes

A good Project Manager is an effective manager of change. They should be able to anticipate, respond to, and deal with the changes that will inevitably arise on any project.

Causes of Project Changes

- Inaccurate initial estimates, Specification changes, Missed requirements, etc

Change Control Systems

- A set of procedures that describes how modifications to the project deliverables and documentation are managed and controlled. This is documented in the **Change Management Plan**, a component of the Project Management Plan.

Change Control Board (CCB)

- A formally chartered group responsible for reviewing, evaluating, approving, delaying, or rejecting changes to the project, and for recording and communicating such decisions.

Approved Change Request

- Requests that have been received and approved in accordance with the integrated change control plan and are ready to be scheduled for implementation

Project Integration Management

Manage Project Knowledge

Manage Project Knowledge is a process that creates new knowledge from the existing project information to achieve the project objectives and contribute to learning within the performing organization.

This process is performed through out the project to capture lessons that can be applied to ongoing work, and also contribute to knowledge repository of the organization.

Knowledge management in the context of the performing organization is about making sure the skills, experience and expertise of the project team and other stakeholders are used before, during and after the project.



Project Integration Management

Manage Project Knowledge

Inputs

- .1 Project management plan
 - All components
- .2 Project documents
 - Lessons learned register
 - Project team assignments
 - Resource breakdown structure
 - Stakeholder register
- .3 Deliverables
- .4 Enterprise environmental factors
- .5 Organizational process assets

Tools & Techniques

- .1 Expert judgment
- .2 Knowledge management
- .3 Information management
- .4 Interpersonal and team skills
 - Active listening
 - Facilitation
 - Leadership
 - Networking
 - Political awareness

Outputs

- .1 Lessons learned register
- .2 Project management plan updates
 - Any component
- .3 Organizational process assets updates





Project Integration Management

Manage Project Knowledge

INPUTS

Project Management Plan & Document (Artifact)

- The project management plan contains subsidiary management plans concerning all aspects of the project such as (scope, requirements, schedule, cost, stakeholder, etc). Project document required as input during this process can include Lessons learned register, Project team assignment, Stakeholders register, etc.

Enterprise Environmental Factors (EEF) & Organizational Process Assets (OPA)

- The EEF that can influence this process are: Organizational, Customers culture, Legal and regulatory requirements / constraints, etc. While the OPA are organizational processes, procedure, policies, formal knowledge and information sharing procedures

Deliverables

- Information and knowledge on the verifiable product, service or result (deliverable) will be required as input during this process.

Project Integration Management

Manage Project Knowledge

1. Expert Judgment

The expert judgment or expertise from individuals or groups in the areas of knowledge and information management, organizational learning, etc should be sought before, during and after the project.



2. Knowledge Management

The tools and techniques required to manage knowledge by connecting people to work together depend on the kind of project. They include Networking, communities of practice, work shadowing, story telling, knowledge fairs and café's, training that involves interactions with learners, etc.





Project Integration Management

Manage Project Knowledge

OUTPUTS

Lesson Learned Register

- This is a repository of lessons that can be used during the project, that are sought from previous projects. They are updated during the course of the project to capture lessons.

Project Management Plan (Artifact) Update

- The plans from the individual processes that make up the project management plans would be updated whenever there are approved change requests.

Organizational Process Assets Updates

- All projects create new knowledge, and any Organizational process assets can be updated during this process, such as lessons learned repository.



Project Integration Management

Manage Project Knowledge

Ensure Knowledge Transfer for Project Continuity

It is important for project team members to obtain the right knowledge during project execution.

Types of Knowledge

- **Explicit knowledge** are Knowledge that can be codified using symbols such as words, numbers, and pictures.
- **Tacit knowledge** are Personal knowledge that can be difficult to articulate and share such as beliefs, experience, and insights.

Knowledge Management

1. Individual Level. 2. Project Level. 3. Organization Level

Lessons Learned

- Knowledge gained during a project can be useful to subsequent phases of a project and to other projects. They should be stored in the **Lesson-Learned Register (Project Document)**

Knowledge Transfer Approach

- Knowledge transfer consists of connecting individuals, in person or virtually, to share tacit knowledge and collaborate together. Techniques used can include: Networking, Meetings, Seminars, Trainings, Work shadowing & Reverse shadowing, etc

Project Integration Management

Monitor and Control Project Work

Monitor and Control Project Work is the process of tracking, reviewing, and regulating the project progress to meet the performance objectives that was defined in the project management plan.

The processes in the Monitoring and Controlling process group concentrate on monitoring and measuring project performance to identify variances from the project plan, and if any, then you get it back on track. Monitoring & Controlling simply means measuring against the Project Management Plans.

Monitoring is performed through out in project management, and it involves the collection, measuring and distribution of performance information.

Project Integration Management

Monitor and Control Project Work

Inputs

- .1 Project management plan
 - Any component
- .2 Project documents
 - Assumption log
 - Basis of estimates
 - Cost forecasts
 - Issue log
 - Lessons learned register
 - Milestone list
 - Quality reports
 - Risk register
 - Risk report
 - Schedule forecasts
- .3 Work performance information
- .4 Agreements
- .5 Enterprise environmental factors
- .6 Organizational process assets

Tools & Techniques

- .1 Expert judgment
- .2 Data analysis
 - Alternatives analysis
 - Cost-benefit analysis
 - Earned value analysis
 - Root cause analysis
 - Trend analysis
 - Variance analysis
- .3 Decision making
 - Voting
- .4 Meetings

Outputs

- .1 Work performance reports
- .2 Change requests
- .3 Project management plan updates
 - Any component
- .4 Project documents updates
 - Cost forecasts
 - Issue log
 - Lessons learned register
 - Risk register
 - Schedule forecasts





Project Integration Management

Monitor and Control Project Work

INPUTS

Project Management Plan & Document (Artifact)

- This Process involves looking at all aspect of the project. subsidiary management plans concerning all aspects of the project such as (scope, requirements, schedule, cost, stakeholder, etc). While Project documents are Assumption log, Issue log, Lesson learned register, Risk register, Cost and schedule forecasts, etc

Enterprise Environmental Factors (EEF) & Organizational Process Assets (OPA)

- The EEF that can influence this process are: Government or industry standards, PMIS, stakeholders risk thresholds, etc. While the OPA are Organizational standard policies, processes, procedures, Financial control procedures, Organizational knowledge base, etc

Agreements

- During monitoring and control, especially when overseeing contractors work, the project manager must refer to the terms and conditions in the agreements, to confirm what has been done.

Project Integration Management

Monitor and Control Project Work

1. Expert Judgment

Expert judgment is used by the project team to interpret the information provided by this process. And the project manager with support from the other team members determine the next course of action to ensure that project performance meets expectation



2. Data Analysis

During Project Monitoring and Control, any variation in the project requirements or environmental variables needs to be analyzed to proffer solutions or forecast possible outcomes. Depending on the kind of project, the followings are examples of analytical techniques:

- Root Cause Analysis
- Trend Analysis
- Variance Analysis
- Earned Value Analysis
- Alternative Analysis

Project Integration Management

Monitor and Control Project Work

3. Decision Making

Decision making techniques used during this process include voting, etc

Decision Making



A decision is one when there are different things you can do and you pick one of them. You make lots of decisions everyday!

4. Meetings

Meetings are used to discuss and address project topics and issues, either face-to-face or virtual. Meetings could be to:

- Exchange project information
- Make decisions
- Brainstorm on project issues





Project Integration Management

Monitor and Control Project Work

OUTPUTS

Change Request

- During this process, there will be comparison of planned result to actual results. In some cases there would be changes that would in turn warrant issuing a change request to back up the decision, either for corrective or preventive actions, defect repairs, etc.

Work Performance Reports

- These are the physical or electronic representation of work performance information generated during monitoring and control. Work performance report when communicated can sometimes generate decisions, actions or awareness about the project..

Project Management Plan & Document (Artifact) Updated

- Change request can cause other components- (subsidiary management plans) of this documents to be updated. Including Lesson learned register, issue log etc.



Project Integration Management

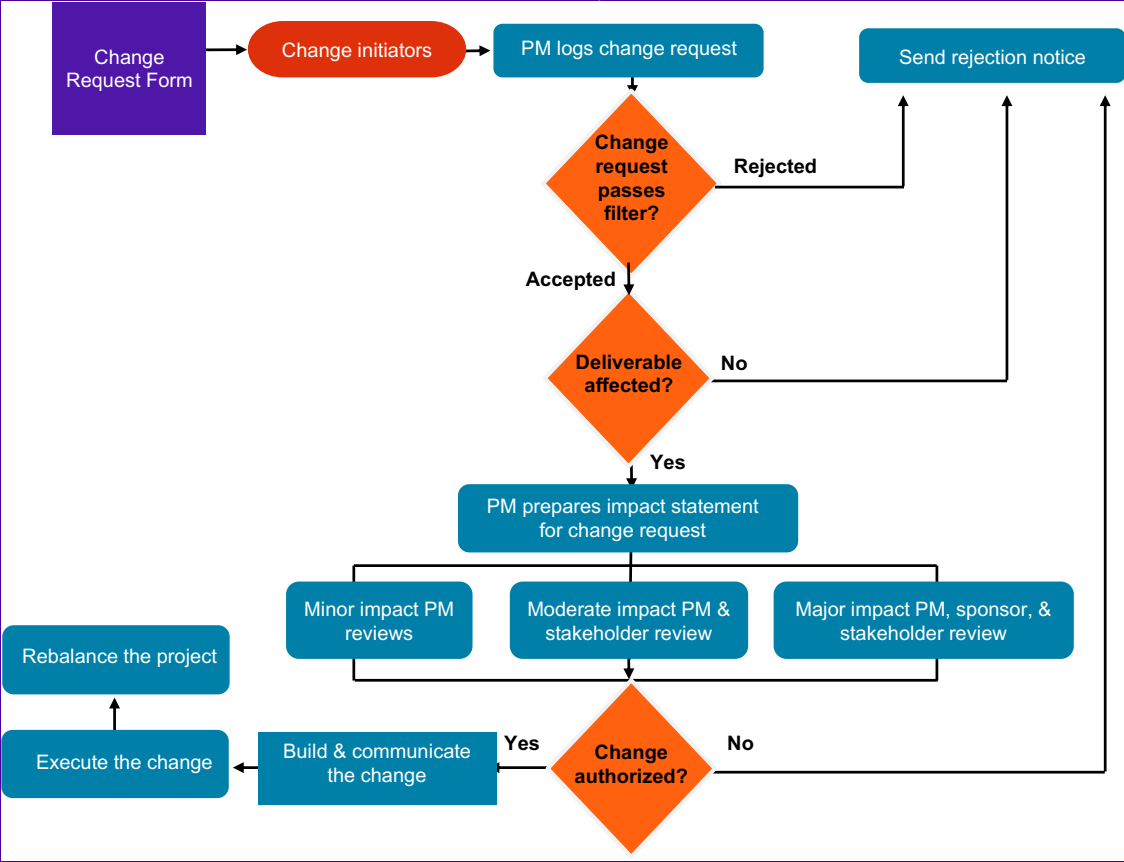
Perform Integrated Change Control

Integrated Change Control process is performed from project inception through completion. Change control is necessary because projects seldom run exactly according to the project management plan. Perform Integrated Change Control is the process of reviewing all change request, approving changes and managing changes to the deliverables, project management plan, project documents, organizational process assets, etc.

Integrated Change Control is responsible for managing and controlling changes to the project. In practice, the Perform Integrated Change Control process will usually include a change control board (CCB) that oversees the acceptance or the rejection of change requests.

Project Integration Management

Perform Integrated Change Control



Project Integration Management

Perform Integrated Change Control

Inputs

- .1 Project management plan
 - Change management plan
 - Configuration management plan
 - Scope baseline
 - Schedule baseline
 - Cost baseline
- .2 Project documents
 - Basis of estimates
 - Requirements traceability matrix
 - Risk report
- .3 Work performance reports
- .4 Change requests
- .5 Enterprise environmental factors
- .6 Organizational process assets

Tools & Techniques

- .1 Expert judgement
- .2 Change control tools
- .3 Decision making
- .4 Meeting

Outputs

- .1 Approved change requests
- .2 Project management plan updates
 - Any component
- .3 Project documents updates
 - Change log



Project Integration Management

Perform Integrated Change Control

INPUTS

Project Management Plan & Document (Artifact)

- This key documents will be needed during this process, are the Change Management Plan, Configuration Management Plan, etc that gives guidance for this process will be needed from this document.

Enterprise Environmental Factors (EEF) & Organizational Process Assets (OPA)

- Government or industry standards, organizational governance frameworks, Legal restrictions, etc are some of the EEF that influence this process. While the Change control procedures, configuration management knowledgebase, Procedures for approving and issuing change authorizations are the OPA.

Change Request

- When engaging the monitoring and control processes and the executing processes, change requests could be generated as outputs, and these Change requests can include CORRECTIVE ACTION, PREVENTIVE ACTION, and DEFECT REPAIRS. However, under the Perform Integrated Change Control Process, the Change Request raised is provided for analysis by the CCB.

Project Integration Management

Perform Integrated Change Control

1. Expert Judgment

In addition to the expert ability of the Project Management Team, stakeholders with similar capability can be asked to be part of the CHANGE CONTROL BOARD (CCB). Their expert abilities are applied to any technical and management details during this process.



2. Change Control Tools

During change control meetings, to facilitate any change management, manual or automated tools are used to manage the change request and assist the CCB in their work.



Project Integration Management

Perform Integrated Change Control

3. Decision Making

The techniques that can be used to make decision during this process include voting, Autocratic decision making



4. Meetings

The Change control board (CCB) will usually meet to deliberate on any change request that is received. Any their decisions are communicated to the stakeholders for information or / and follow-up actions.





Project Integration Management

Perform Integrated Change Control

OUTPUTS

Approved Change Request

- Change requests are processed according to the change control system by the project manager or by an assigned team member. Approved change requests will be implemented by the Direct and Manage Project Execution process. The status of all changes, approved or not, will be updated in the change request log as part of the project document updates.

Project Management Plan & Documents (Artifact) Updated

- Change request can cause subsidiary management plans of this documents to be updated. Other documents are the change log, etc



Project Integration Management

Close Project or Phase

All projects must come to an end. During the Closing Process, you'll need to document the acceptance of the **product** of the project with a formal sign-off and file it with the project records for future reference. The formal sign-off is the way stakeholders indicate that the goals have been met and that the project meets or exceeds their expectations so that the project ends.

Close Project or Phase is the process of finalizing all activities across all of the Project Management Process Groups to formally complete the project or phase.

Project Endings

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.***



Project Integration Management

Close Project or Phase

Project Endings

There are four formal types of project endings that you need to know:

- **Addition**

Projects that evolve into ongoing operations are considered projects that end because of *addition*; in other words, they become their own ongoing business unit.

- **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 are left with an unfinished project on your hands.

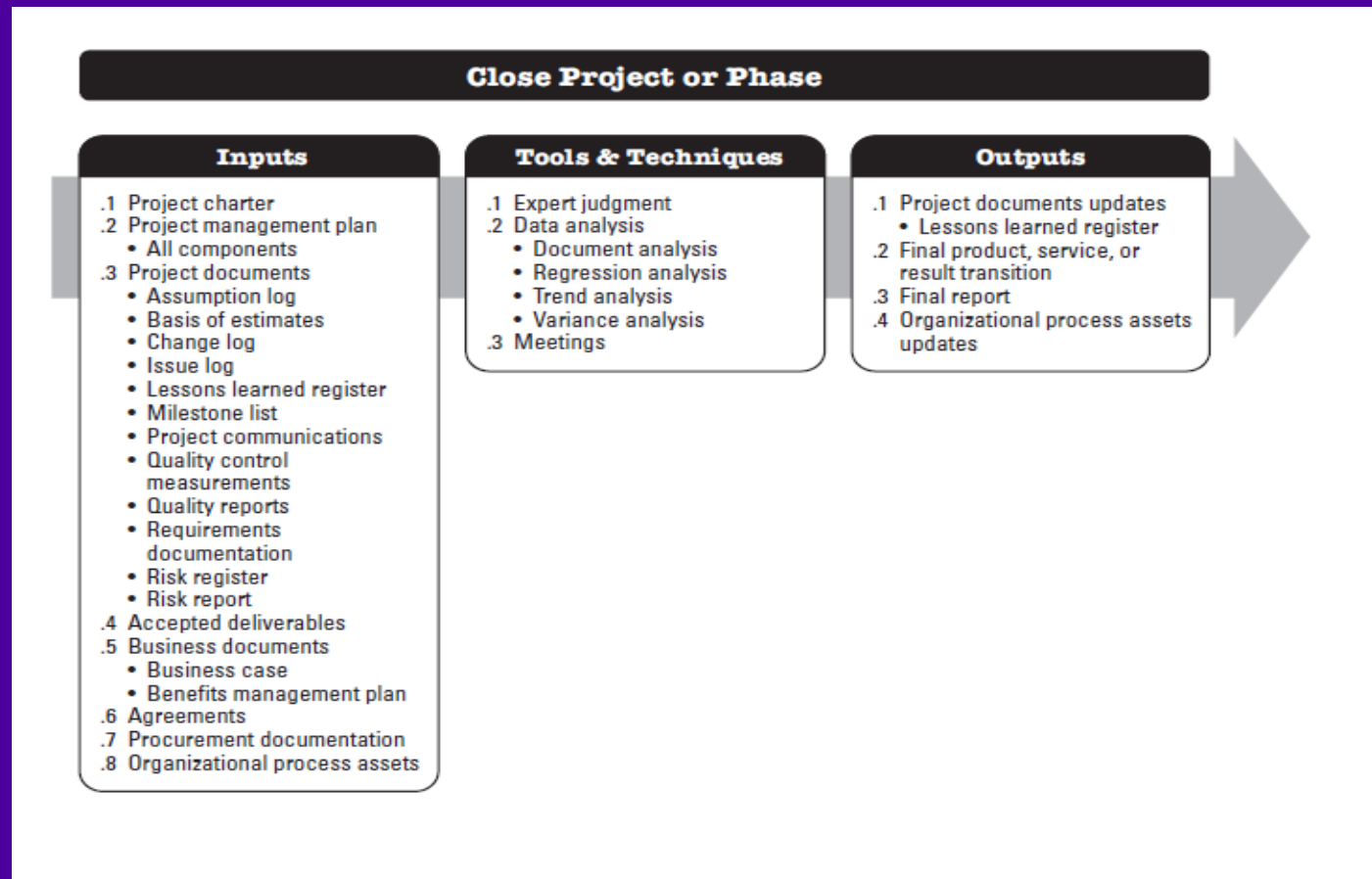
- **Integration**

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.

- **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.

Project Integration Management





Project Integration Management

Close Project or Phase

INPUTS

Project Charter

- This document provides the success criteria that is used to evaluate the project.

Project Management Plan & Documents (Artifacts)

- This project management plan that was signed-off by the sponsor serves as agreement between them and the PM. When closing, it will be needed as it defines what constitute project completion. Other project documents are Assumption log, Project communications, Change log, Lessons learned register, etc

Accepted Deliverables

- Accepted deliverables may include approved product specifications, delivery receipts, partial or interim deliverables, etc.

Organizational Process Assets (OPA)

- Project closure guidelines, historical information, lesson learned are part of the OPA that influence this process.

Project Integration Management

Close Project or Phase

1. Expert Judgment

Expert judgment is used when performing administrative closure activities. These experts ensure that the project or phase closure is performed to the appropriate standards.



2. Data Analysis

Data analysis techniques can be used for project closure, such as the followings techniques:

- Regression Analysis
- Trend Analysis
- Document Analysis



Project Integration Management

Close Project or Phase

3. Meetings

Meetings to close project or phase may be face-to-face, virtual, formal or informal. And it will involve the project team members and other stakeholders that are involved in the project.





Project Integration Management

Close Project

OUTPUTS

Project Documents Updates

All project documents may be updated and marked as final version as the project close. The lesson learned register for example will be updated with closure information.

Final (Product, Service, or Result) Transition

- This output refers to the transition or the Formal acceptance and handover of the final DELIVERABLE (product, service, or result) that the project was authorized to produce (or in the case of Phase closure, the intermediate deliverable of that phase). The acceptance includes receipt of a formal statement (Completion Certificate) that the terms of the contract have been met

Final Report

This report provides a summary of the project performance. Information such as summary of validation information for the final deliverable, etc

Organizational Process Assets Updates

- The organizational process assets that are updated as a result of the Close Project or Phase process include, but are not limited to: Project documents, Project or Phase Closure Documents, Lessons learned repository, **(Artifacts)** etc..



Project Integration Management

END