

Software Project Management

Unit 2 : Lecture 1
10-08-2020

Dr.M.Paul Arokiadass Jerald

Unit II – Syllabus Overview

- Project Planning -Integration Management - Introduction - Project plan development – Plan Execution - Scope Management - Introduction - methods for selecting projects - project charter - scope statement – work breakdown structure - Stepwise Project Planning - overview - Main steps in project planning.
- Project Scheduling-Time Management- Importance of project schedules- Schedules and activities - Sequencing and scheduling activity - Project Network Diagrams -Network planning models- Duration Estimating and schedule development- Critical path analysis- Program evaluation and review Techniques

Project Planning - Definition

- Project planning is often used to organize different areas of a project, including project plans, work loads and the management of teams and individuals
 - **Step 1:** Project scope is defined and the appropriate methods for completing the project are determined.
 - **Step 2:** Durations for the various tasks necessary to complete the work are listed and grouped into a work breakdown structure.

Purpose of the project planning

- Establish business requirements
- Establish cost, schedule, list of deliverables, and delivery dates
- Establish resources plans
- Obtain management approval and proceed to the next phase

Processes in project planning - 1

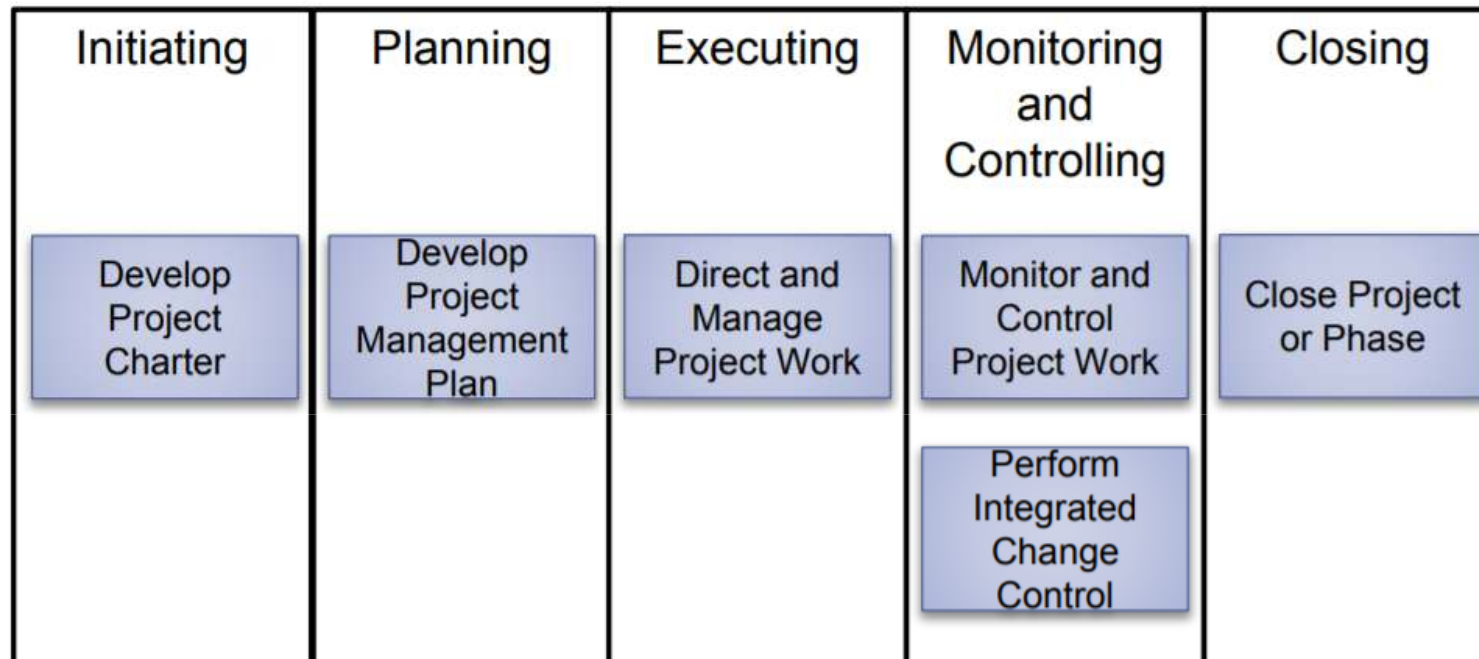
- **Scope planning** – specifying the in-scope requirements for the project to create the work breakdown structure
- **Preparation of work breakdown structure** – breakdown of the project into tasks and sub-tasks
- **Project schedule development** – listing the entire schedule of the activities and detailing sequence of implementation
- **Resource planning** – specifying who will do what work, at which time, and special skills needed to accomplish the project tasks

Processes in project planning - 2

- **Budget planning** – specifying the budget/cost to be incurred at the completion of the project
- **Procurement planning** – focusing on vendors and subcontracting
- **Risk management** – planning for possible risks and considering optional contingency plans and mitigation strategies
- **Quality planning** – assessing quality criteria used for the project
- **Communication planning** – designing the communication strategy with all project stakeholders

Project Integration Management

- Project Integration management is concerned with the processes required to **ensure that the various activities of the project are co-ordinated properly.**
- Project Integration Management process comprise of activities like **identifying, defining, combining,** and **coordinating** various processes related to project.



Integration Management – balancing all knowledge areas with each other

Project Integration Management

Comprises of:

- Project plan development : Integrating and coordinating all project plans to create coherent document
- Project plan execution : Carrying out the project plan, according to the strategy, plan and activities



Project Integration Management

- Integrated change control : Coordinating changes across the project
- Project plan development :
 - **Inputs** Tools and techniques
 - **Outputs** Other planning inputs
 - **Project planning methodology** : Project plan Historical information Stakeholder skills and knowledge Supporting details Organizational policies.

Activities of Project Integration Mgmt

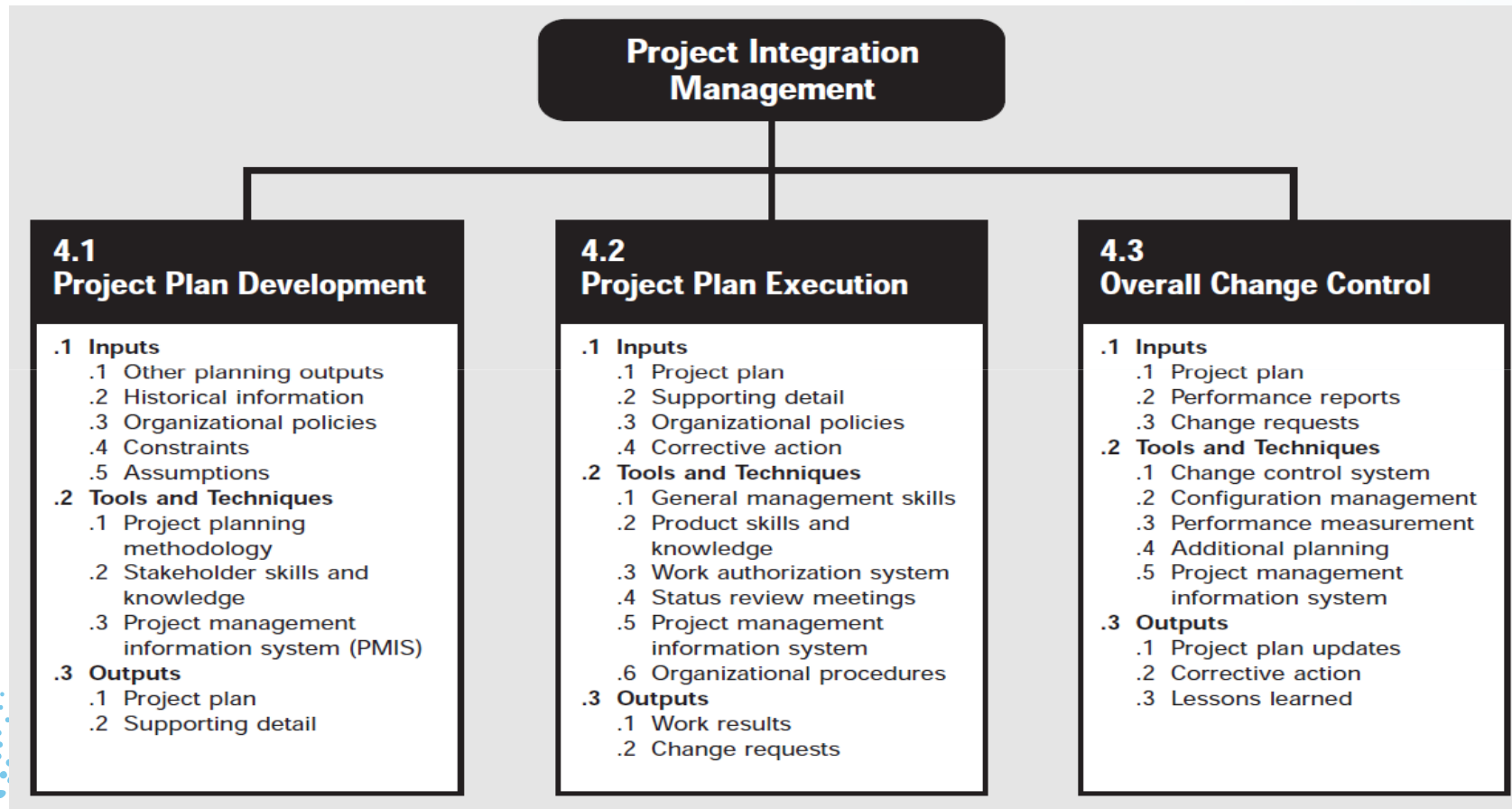
Process	Project Stage Key	Deliverables
Develop project charter	Initiating	Project Charter
Develop Project Management Plan	Planning Project	Management Plan
Direct and Manage Project Work	Execution	Deliverables
Monitor and Control Project Work	Monitoring and Control	Change Requests
Perform Integrated Change Control	Monitoring and Control	Change request status updates
Close Project or Phase	Project closure	Final product

Software Project Management

Unit 2 : Lecture 2
12-08-2020

Dr.M.Paul Arokiadass Jerald

PROJECT INTEGRATION MANAGEMENT



Activities of Project Integration Mgmt

Process	Project Stage Key	Deliverables
Develop project charter	Initiating	Project Charter
Develop Project Management Plan	Planning Project	Management Plan
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Project Charter

- Project Charter refers to a statement of objectives in a project.
- This statement sets out detailed project goals, roles and responsibilities, identifies the main stakeholders, and the level of authority of a project manager.
- It includes name, description, and deliverables of the project, usually **written by a higher authority than a project manager**.

Project Charter

- **Input** : Project statement of work, Contract Enterprise environmental factors, Organizational process assets
- **Process** : Expert Judgement Project Charter
- **Output** : Project Charter

Activities of Project Integration Mgmt

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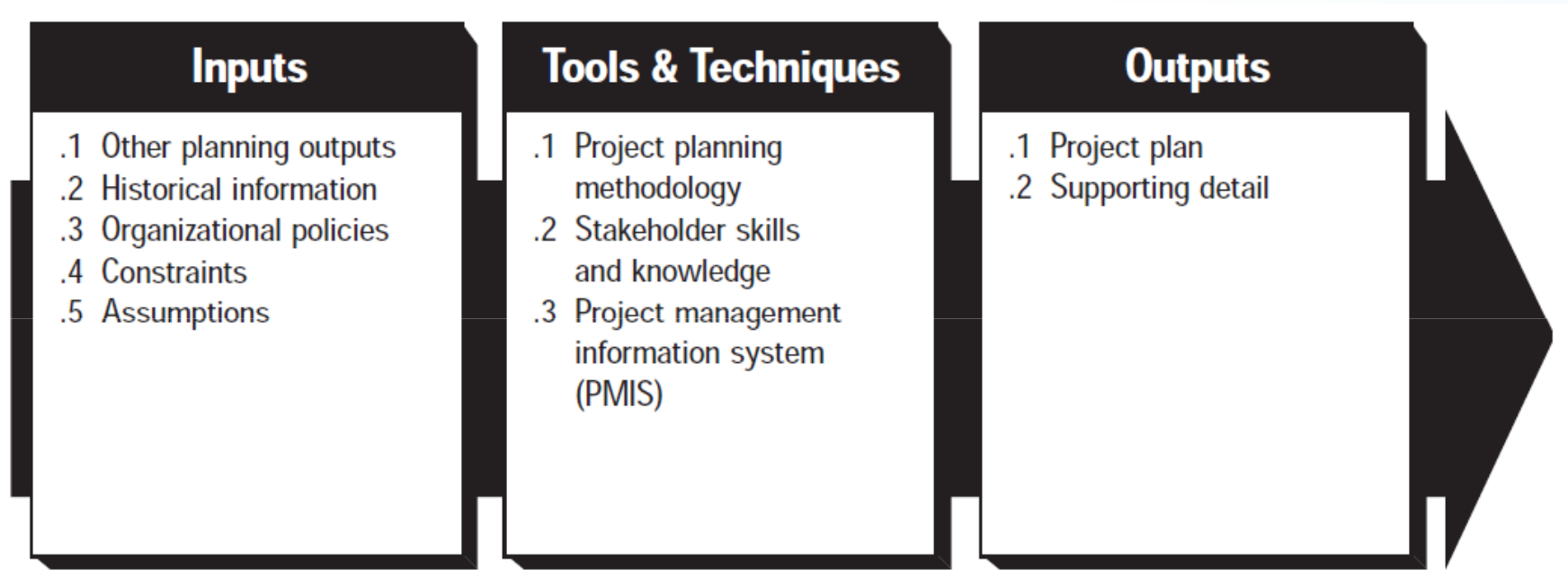
Project Management Plan

- Project plan development : produce a consistent, logical document that is used to guide project control and execution.
- used to direct project execution, communicating among stakeholders, for better project control, etc.
- **Input** :Project charter, Output from planning process, Enterprise environmental factors, Organizational process assets
- **Process** :Expert Judgement
- **Output** : Project Management Plan

Project plan development:

- **Project plan development is one of the most critical activities within the project management lifecycle.**
- The project manager takes the ultimate responsibility for creating a plan, which is a formal document showing the basis upon which to assess performance of the project and measure its results..

Project Development Plan



Activities of Project Integration Mgmt

Process	Project Stage Key	Deliverables
Develop project charter	Initiating	Project Charter
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Direct and Manage Project Work

- It is a process where the work will be executed as defined in the project management plan and implementing changes with respect to project requirement.
- **Input** : Project Management Plan, Enterprise environmental facts, Organisational process assets
- **Process** : Expert judgement, Project Management Information System
- **Output** : Deliverables, Work performance, Change requests, Project plan updates, Project document updates.

Activities of Project Integration Mgmt

Process	Project Stage Key	Deliverables
Develop project charter	Initiating	Project Charter
Develop Project Management Plan	Planning Project	Management Plan
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Monitor and Control Project Work

- includes tracking, reviewing and reporting the progress of the project in order to meet the performance objectives defined in the project management plan.
- **Input** : Project Management Plan, Performance reports
- **Process** : Expert Judgement
- **Output** : Change Requests, Project management plans Updates, Project document updates

Activities of Project Integration Mgmt

Process	Project Stage Key	Deliverables
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Close Project or Phase	Project closure	Final product

Integrated Change Control

- The impact of any change is assessed against the project. It requires to be assessed across the whole of the project.
- **Input** : Project management plan, Work performance information, Change requests
- **Process** : Expert Judgement, Change control meetings
- **Output** : Change requests status updates, Project management plan updates, Project document updates

Activities of Project Integration Mgmt

Process	Project Stage Key	Deliverables
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Close Project or Phase	Project closure	Final product

Close project or Phase

- Phase of formal completion of the project related activities.
- **Input** : Project management plan, Accepted deliverables
- **Process** : Expert Judgement
- **Output** : Final product, service or result transition, Organizational process assets updates

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Unit 2 : Lecture 3
12-08-2020

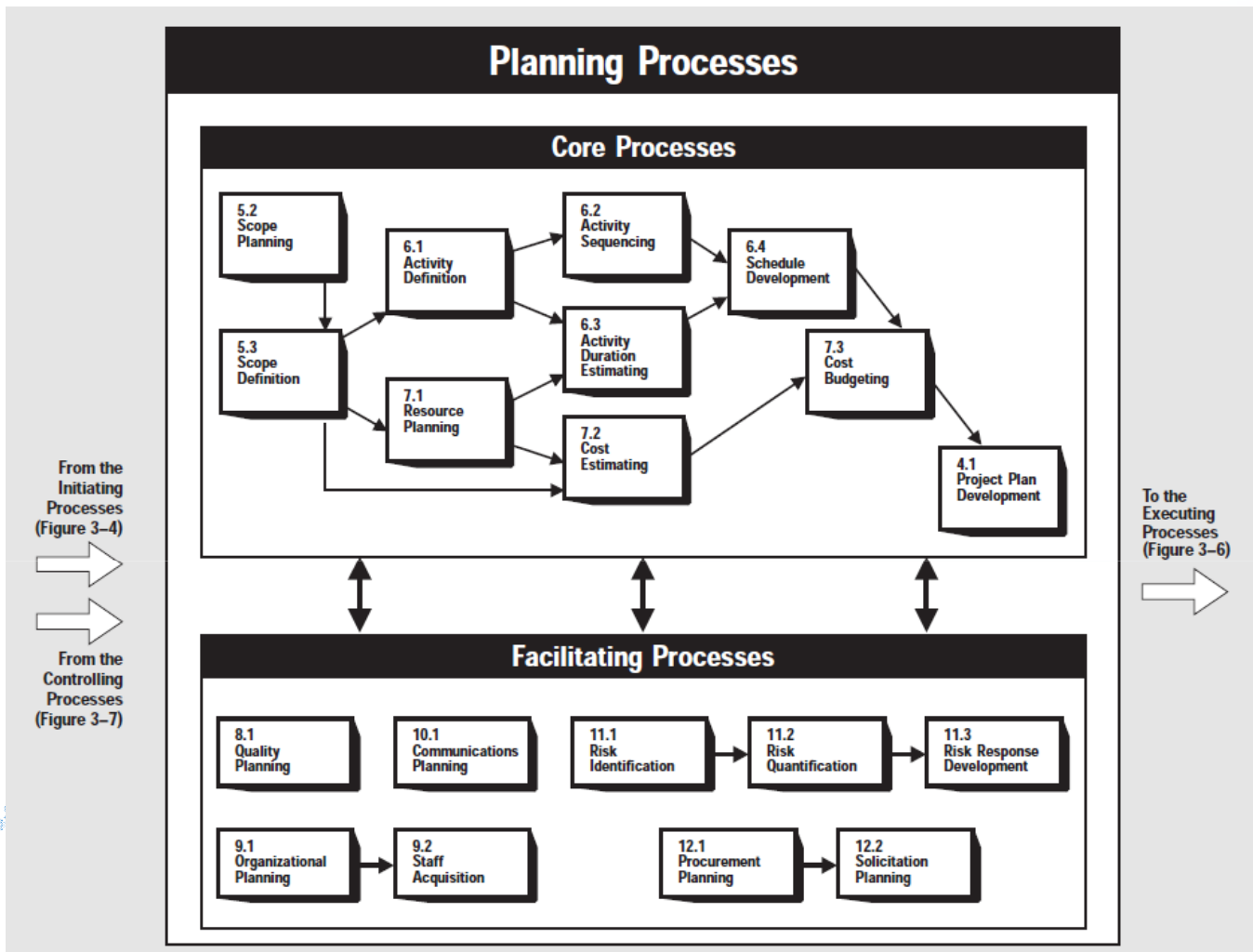
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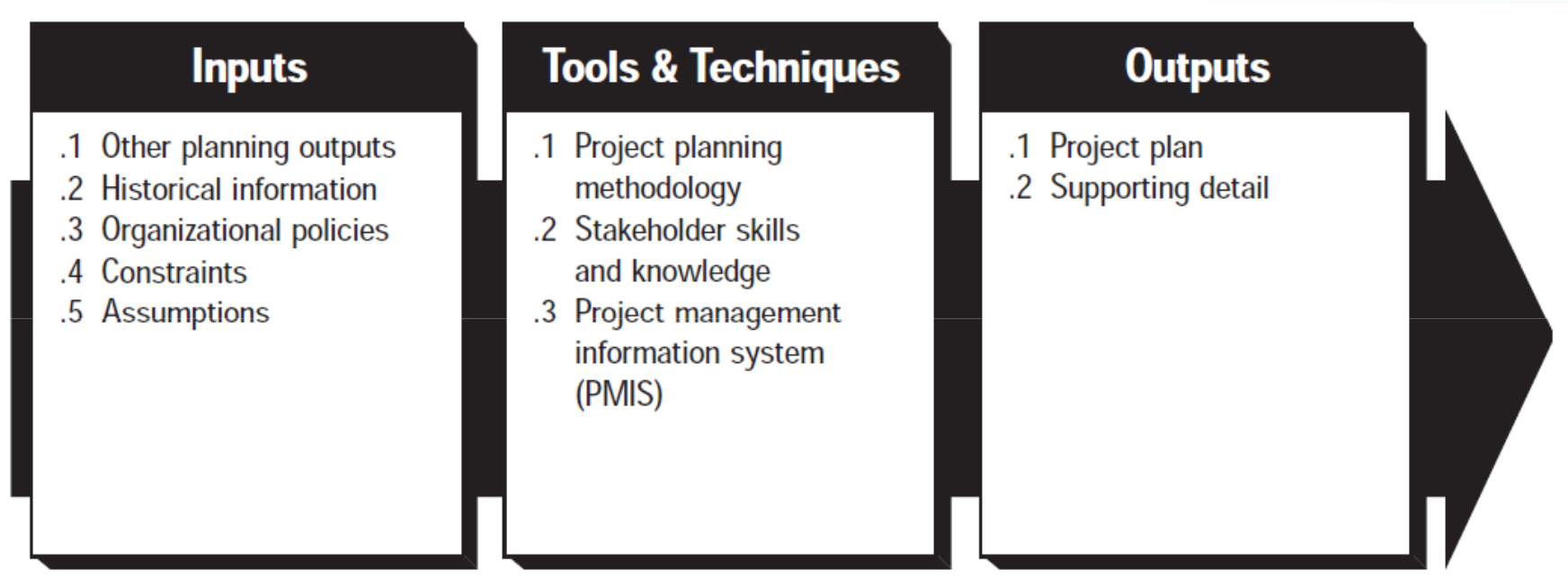
2.2 Project Management Plan

- Project plan development : produce a consistent, logical document that is used to guide project control and execution.
- used to direct project execution, communicating among stakeholders, for better project control, etc.
- **Input** :Project charter, Output from planning process, Enterprise environmental factors, Organizational process assets
- **Process** :Expert Judgement
- **Output** : Project Management Plan



Reference : A Guide to the Project management Body of Knowledge, PMI Standards Committee

Project Development Plan



Project plan development:

- **Project plan development is one of the most critical activities within the project management lifecycle.**
- The project manager takes the ultimate responsibility for creating a plan, which is a formal document showing the basis upon which to assess performance of the project and measure its results..

Steps in Project Development Plan : Step 1

- **Step1:** Decompose And Structure Work

- Decompose the overall amount of project work into smaller, more manageable pieces.
 - For example, develop the *Work Breakdown Structure*
- The WBS is a detailed list of all phases, activities and jobs required for successful project completion.
- The WBS becomes a foundation allows to design simple to-do lists and task lists and then assign them to members of your team.

- WBS also depicts dependencies and relationships between work items (procedures, tasks).
- Identify how each WBS element is associated with other elements and what dependencies can be established.
- Project plan development requires setting clear milestones and time checkpoints, so be sure you have added milestones to your WBS.

Project Plan Development : Step 2

- **Step#2:** Define Resources Required and identify types of resources.
- Once the tasks and activities are defined and structured, next step in creating a project plan is to define the resources required to do each task and activity.
- In WBS, in project scope add a section that describes which resources are required and in which quantities and measures.

Project Plan Development : Step 2

- Resources required in the project:
 - Full-time and part-time employees
 - Equipment and materials
 - Technology and knowledge
- Goal is to calculate how many human resources and materials are acquired to do the project
- Define suppliers who will provide equipment and materials.
- Specify the above information in WBS.

Project Plan Development : Step 3

- Step#3: Design Schedule
- After Work Breakdown Structure is completely outlined : next step in creating a project plan is to schedule tasks and define durations for resources-dependent activities listed in the WBS.
- Create a ***schedule that shows execution sequence and sets due dates per activity within your project.***

Project Plan Development : Step 3

- Information is necessary to build a project schedule :
 - Identified tasks and activities and their dependencies (both internal and external)
 - Assignments made to team members(who will do which task)
 - Risk mitigation strategies and a contingency plan
 - Critical milestones
 - Allocated resources required for the project
- During the two previous development steps this information has been identified, so you can design a project schedule.

Fun Part

Exam Planning



Plan A : Full Syllabus

Plan B : Important Chapters

Plan C : Important Questions

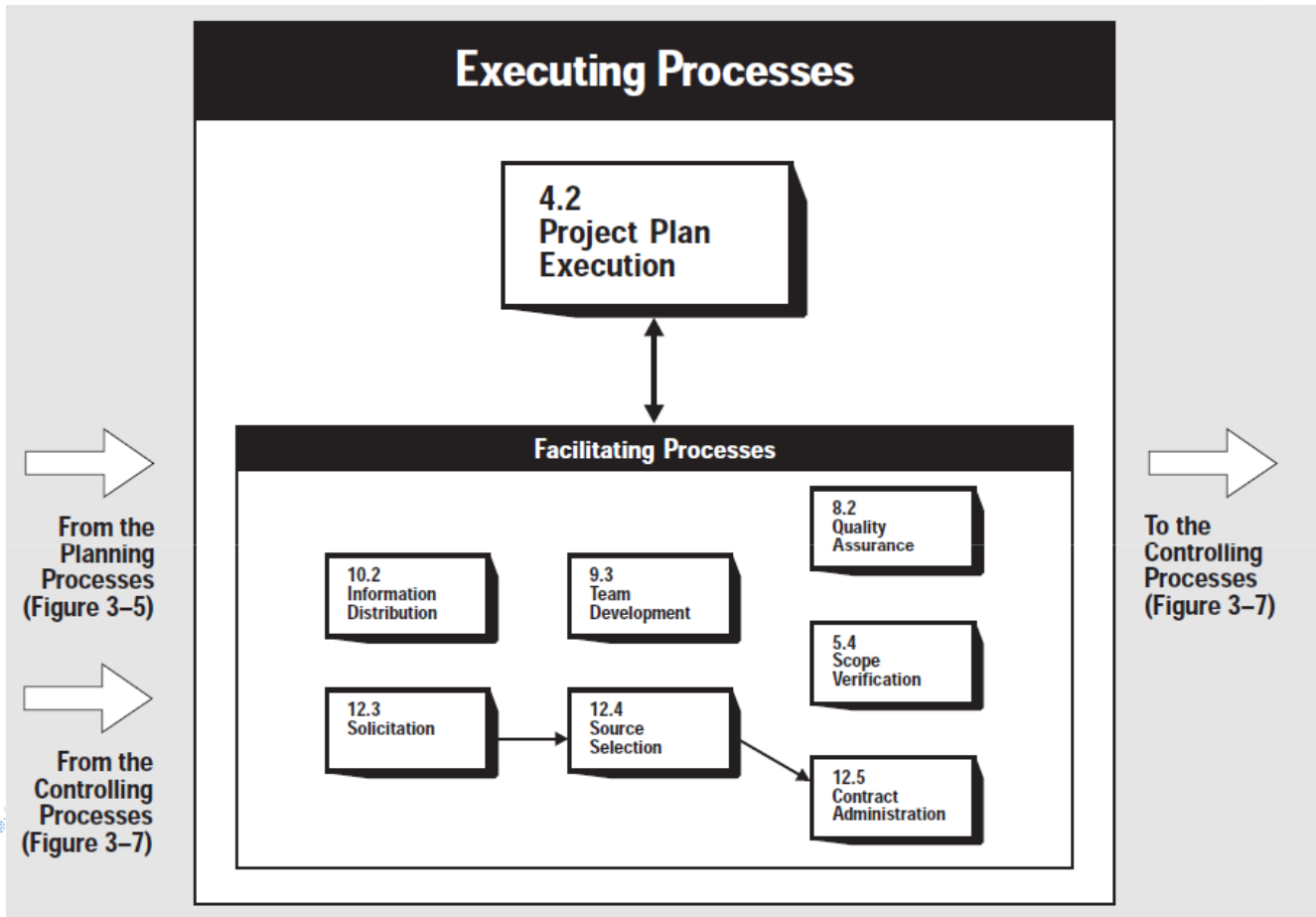
Plan D : Pray

Courtesy : <https://in.pinterest.com/pin/749145719243223962/>

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2.3 Plan Execution

- The execution plan is the “how-to” for your venture. It is a necessary input to your **financial plan**, slide **pitch deck and business plan**.
- **should also be a tool that is used with team on a regular basis to** manage the business, to communicate your critical goals and timing of deliverables, and to celebrate your successes.



Reference : A Guide to the Project management Body of Knowledge, PMI Standards Committee

Elements of an execution plan

- A good execution plan covers milestones and tasks for the business to achieve as well as what resources will be required to make them happen.
- **Milestones** : Milestones are the goals critical to the success of any new venture.
 - complete design specifications
 - finish a prototype
 - false capital
 - ship a testable version to customers
 - ship the final version to customers
 - achieve break-even

Tasks for Execution Plan

- Task lists might include:
 - incorporating the business
 - renting office space
 - finding and engaging key vendors
 - setting up accounting and payroll systems
 - securing employment agreements with key personnel
 - filing legal and taxation documents
 - purchasing insurance policies
 - setting up your website

Software Project Management



Unit 2 : Lecture 4
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Dr.M.Paul Arokiadass Jerald

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2.4 Definition : Scope Management

- In project management, scope is the defined features and functions of a product, or the scope of work needed to finish a project.
- Project Scope Management includes the processes required to ensure that the project **includes all the work required**, and **only the work required**, to complete the project successfully.
- Managing the project scope is primarily concerned with defining and controlling **what is and is not** included in the project.

Project Scope Statement

- Project Scope Statement defines the following:
 - Purpose and Justification of the Project
 - Scope Description
 - High Level Project Requirements
 - Project Boundaries
 - Project Strategy
 - Project Deliverables
 - Acceptance Criteria
 - Project Constraints
 - Project Assumptions
 - Cost Estimates
 - Cost Benefit Analysis

Project Scope Vs Product Scope

- **Project scope**

- is oriented towards the work required and methods needed
- Project Scope is more **work-oriented (the hows)**

- **Product Scope**

- is more oriented toward functional requirements.
- Product Scope is more oriented toward **functional requirements (the whats).**

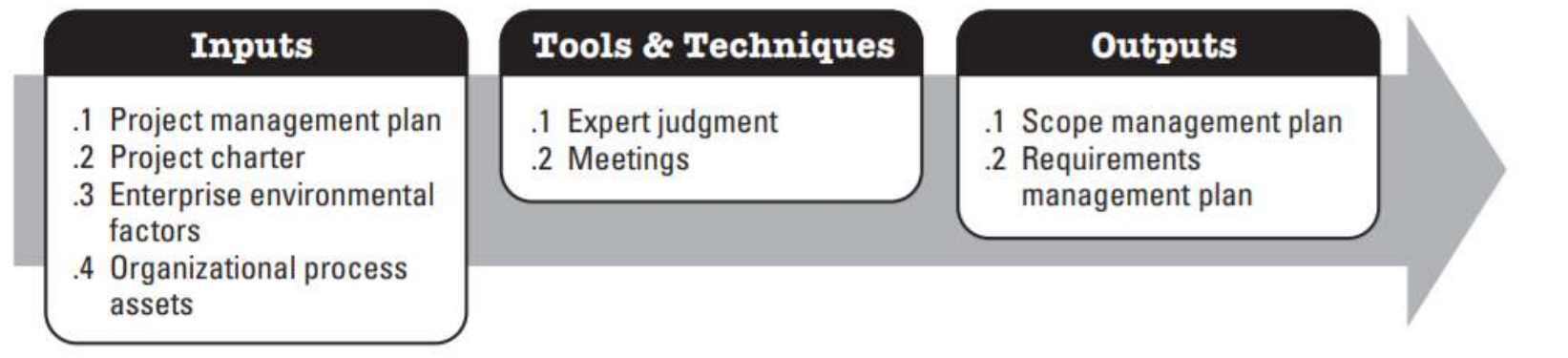
- If requirements aren't completely defined and described and if there is no effective change control in a project, scope or requirement creep may ensue.

2.5 Project Scope Management processes

1. Plan Scope Management -The process of creating a scope management plan
2. Collect Requirements
3. Define Scope -detailed description of the project and product.
4. Create WBS
5. Validate Scope - process of formalizing acceptance
6. Control Scope - The process of monitoring the status of the project and product scope

2.5.1 Plan Scope Management

- Plan Scope Management is the process of creating a scope management plan that documents how the project scope will be defined, validated, and controlled.
- Benefit of this process is that it provides guidance and direction on how scope will be managed throughout the project.



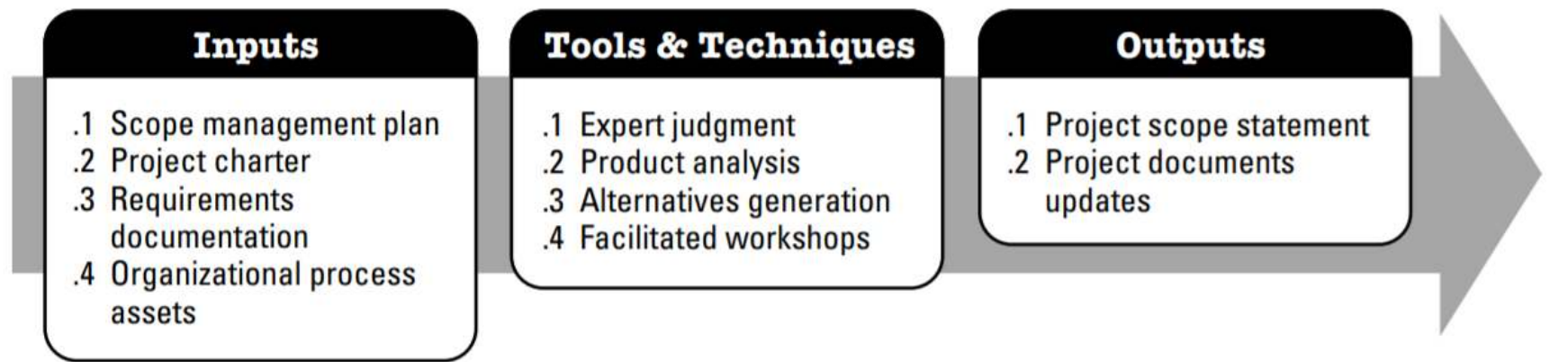
2.5.2 Collect Requirements

- Collect Requirements is the process of determining, documenting, and managing stakeholder requirements to meet project objectives.
- Benefit of this process is that it provides the basis for defining and managing the project scope including product scope.



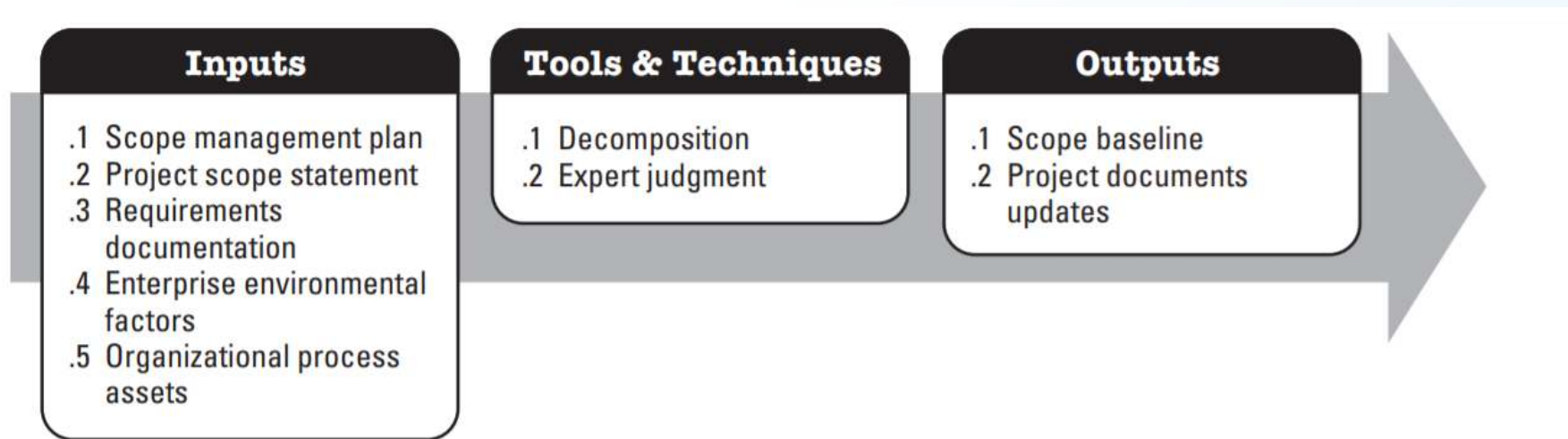
2.5.3 Define Scope

- Define Scope is the process of developing a detailed description of the project and product.
- Benefit of this process is that it describes the project, service, or result boundaries by defining which of the requirements collected will be included or excluded from the project scope.



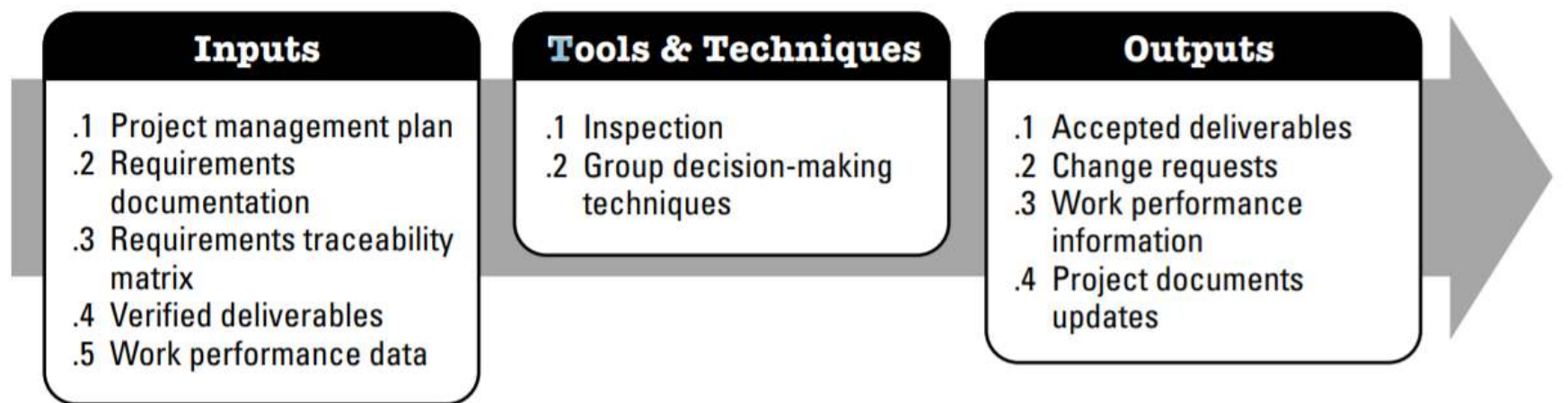
2.5.4 Create WBS

- Create WBS is the process of subdividing project deliverables and project work into smaller, more manageable components.
- Benefit of this process is that it provides a structured vision of what has to be delivered.



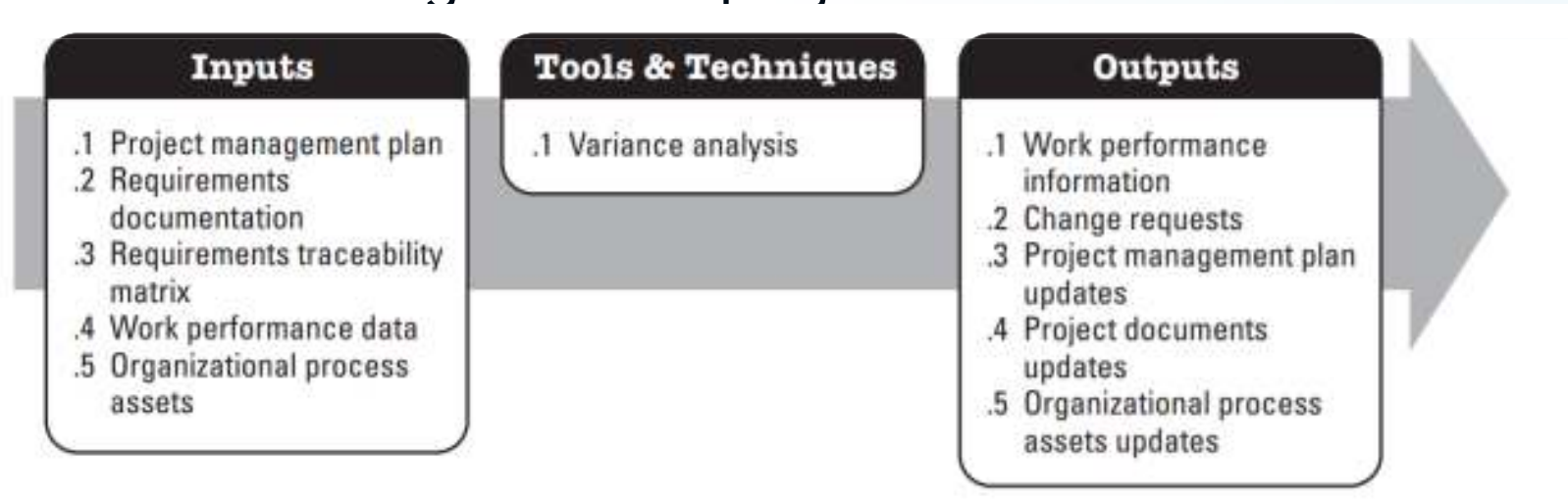
2.5.5 Validate Scope

- Validate Scope is the process of formalizing acceptance of the completed project deliverables.
- Benefit of this process is that it brings objectivity to the acceptance process and increases the chance of final product, service, or result acceptance by validating each deliverable.



2.5.6 Control Scope

- Control Scope is the process of monitoring the status of the project and product scope and managing changes.
- Benefit of this process is that it **allows the scope baseline to be maintained** throughout the project.



References

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