

Project Quality Management

Prepared by Dr. Ehab Mahmoud



Project Quality Management

Lecture 8

PMG354

Planning the project

Prepared by

Dr. Ehab Mahmoud

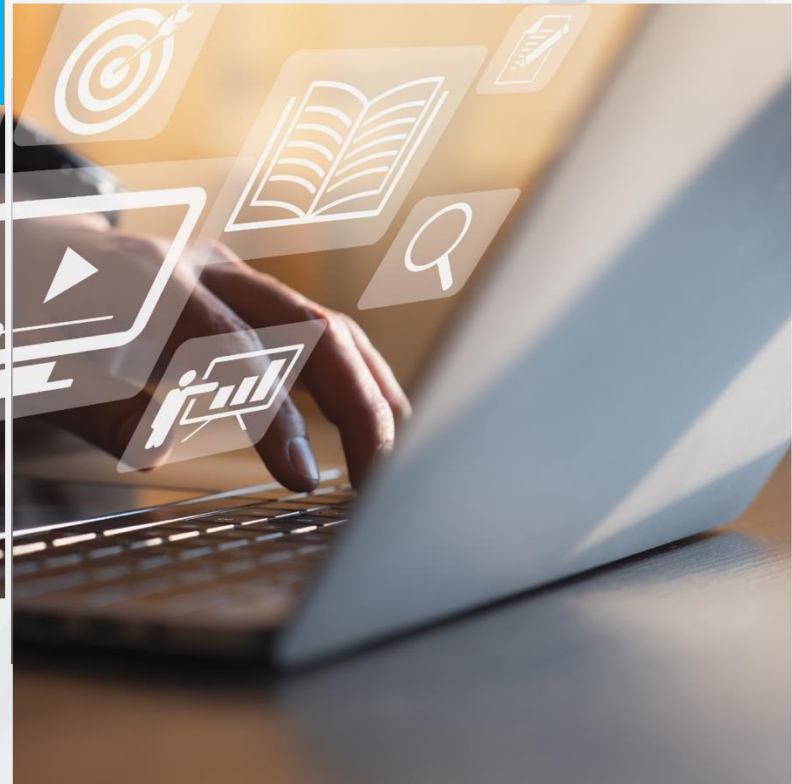
Lecture

08

Objectives



At the end of this lecture, we expect to acquire a knowledge about the project planning phase and all related activities that have been carried out to be able to execute for the project.



Lecture
08

Contents

- Project planning
- Develop a Project Management Plan
- Subsidiary Management Plans
- Baselines
- Plan Scope Management
- Collect Project Requirements
- Requirements Traceability Matrix
- Define Project Scope
- Define Scope Tools and Techniques
- Define Scope Outputs
- Create a Work Breakdown Structure (WBS)
- Work Packages / Activities

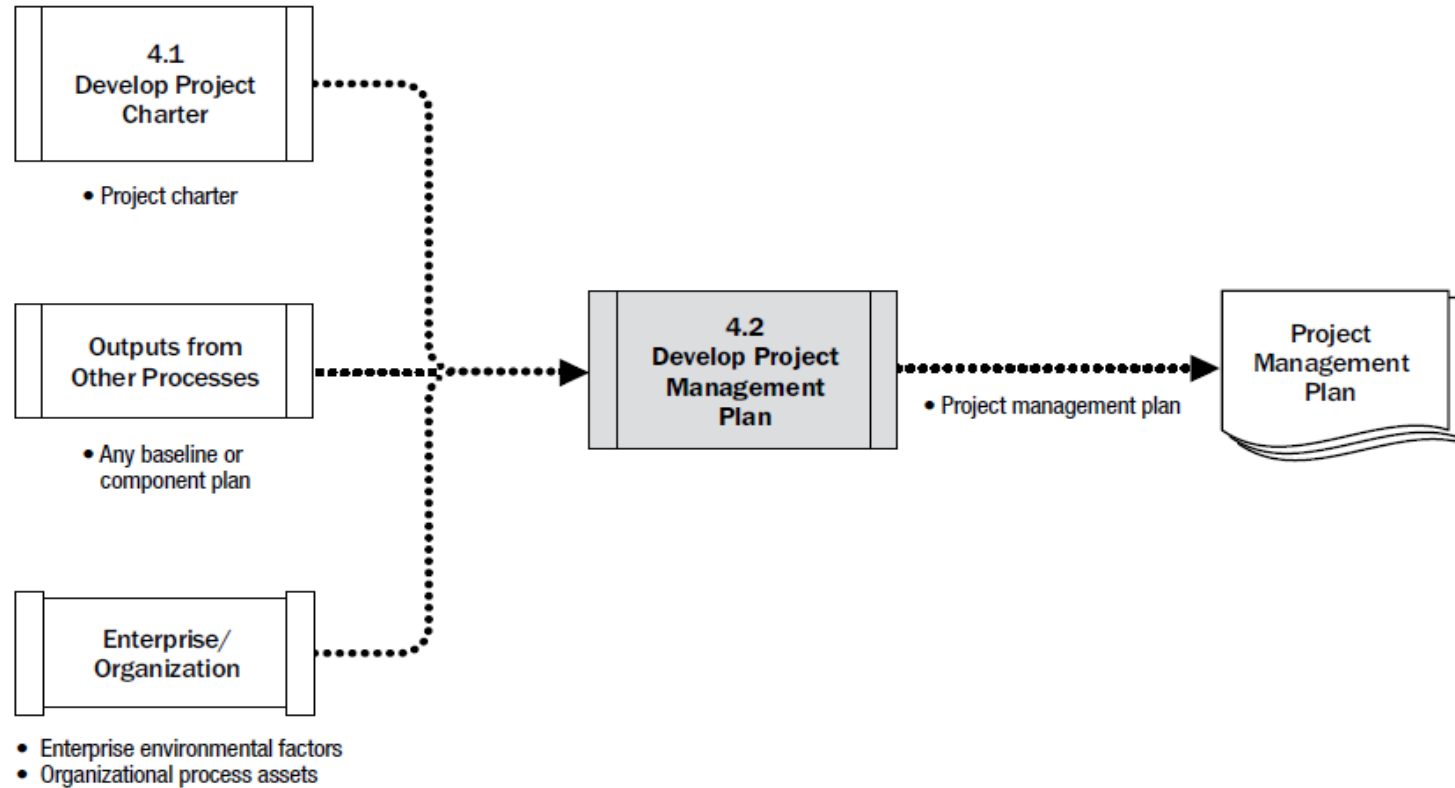
Project planning



Planning a Project

- Develop a Project Management Plan
- Plan Scope Management
- Collect Requirements
- Define Scope
- Create a WBS

Develop a Project Management Plan



The Project Management Plan

- The project management plan defines how the project is executed, monitored and controlled, and closed.
- The project management plan's content varies depending on the project location and complexity of the project.

The Project Management Plan

- The project management plan should be baselined; that is, it is necessary to define at least the project references for scope, time, and cost, so that the project execution can be measured and compared to those references and performance can be managed. Before the baselines are defined, the project management plan may be updated as many times as necessary.

The Project Management Plan

- No formal process is required at that time. But, once it is baselined, it may only be changed through the Perform Integrated Change Control process. Consequently, change requests will be generated and decided upon whenever a change is requested. This results in a project management plan that is progressively elaborated by controlled and approved updates extending through project closure

Project Management Plan

- Till now; your project defined at a high level and formally authorized by the sponsor, you're ready to begin planning your project.
- Project planning is the second of five project management process groups.
- Project Management Plan : is a formal document (approved by stakeholders) that defines how the project will be executed, monitored, and controlled to achieve its objectives.

Project Management Plan Components

- Subsidiary plans
- Baselines
- Additional components.
 - Change management plan.
 - Configuration management plan.
 - Performance measurement baseline
 - Project life cycle.
 - Development approach.
 - Management reviews.

Subsidiary Management Plans

Subsidiary Plan	Description
Scope Management Plan	Provides guidance on the <u>project scope</u> .
Requirements Management Plan	Specifies the planning for <u>requirements</u> of the project.
Schedule Management Plan	Describes the plan to <u>control</u> the <u>project schedule</u> .
Cost Management Plan	Describes the plan to <u>control</u> <u>project costs</u> .
Quality Management Plan	Describes the implementation of the performing organization's <u>quality policy</u> through out the project.
Resource Management Plan	Provides guidance on how project resources should be categorized, allocated, managed, and released.
Communications Management Plan	Documents the <u>approach to communicate efficiently and effectively with the stakeholders</u> .
Risk Management Plan	Describes how <u>risk management</u> is structured and performed on the project.
Procurement Management Plan	Describes how the <u>procurement processes</u> will be managed
Stakeholders Management Plan	Establishes how stakeholders will be engaged in project decisions and execution, according to their needs, interests, And impact

Baselines

- Scope baseline: The approved version of a scope statement, work breakdown structure (WBS), and its associated WBS dictionary, which is used as a basis for comparison.
- Schedule baseline: The approved version of the schedule model that is used as a basis for comparison to the actual results.
- Cost baseline: The approved version of the time-phased project budget that is used as a basis for comparison to the actual results.

Performance Measurement Baselines

Scope baseline

- The project scope statement
- work breakdown structure (WBS)
- WBS dictionary

Schedule baseline

- The agreed-upon schedule, including the start and finish dates for each activity

Cost baseline

- The time-phased cost budget

Develop a Project Management Plan

Inputs

- .1 Project charter
- .2 Outputs from other processes
- .3 Enterprise environmental factors
- .4 Organizational process assets

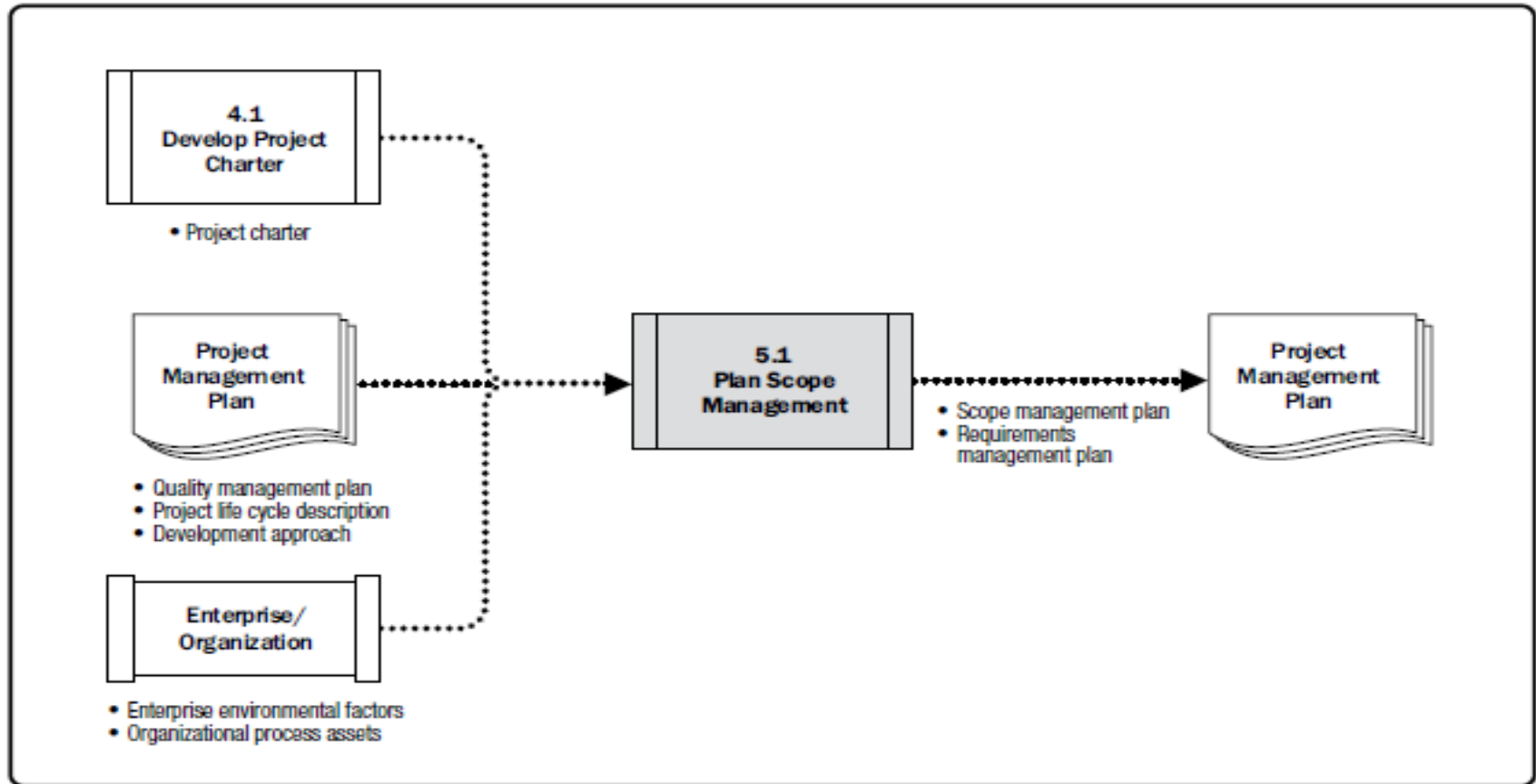
Tools & Techniques

- .1 Expert judgment
- .2 Data gathering
 - Brainstorming
 - Checklists
 - Focus groups
 - Interviews
- .3 Interpersonal and team skills
 - Conflict management
 - Facilitation
 - Meeting management
- .4 Meetings

Outputs

- .1 Project management plan

Plan Scope Management



Plan Scope Management Outputs

• Scope Management Plan:

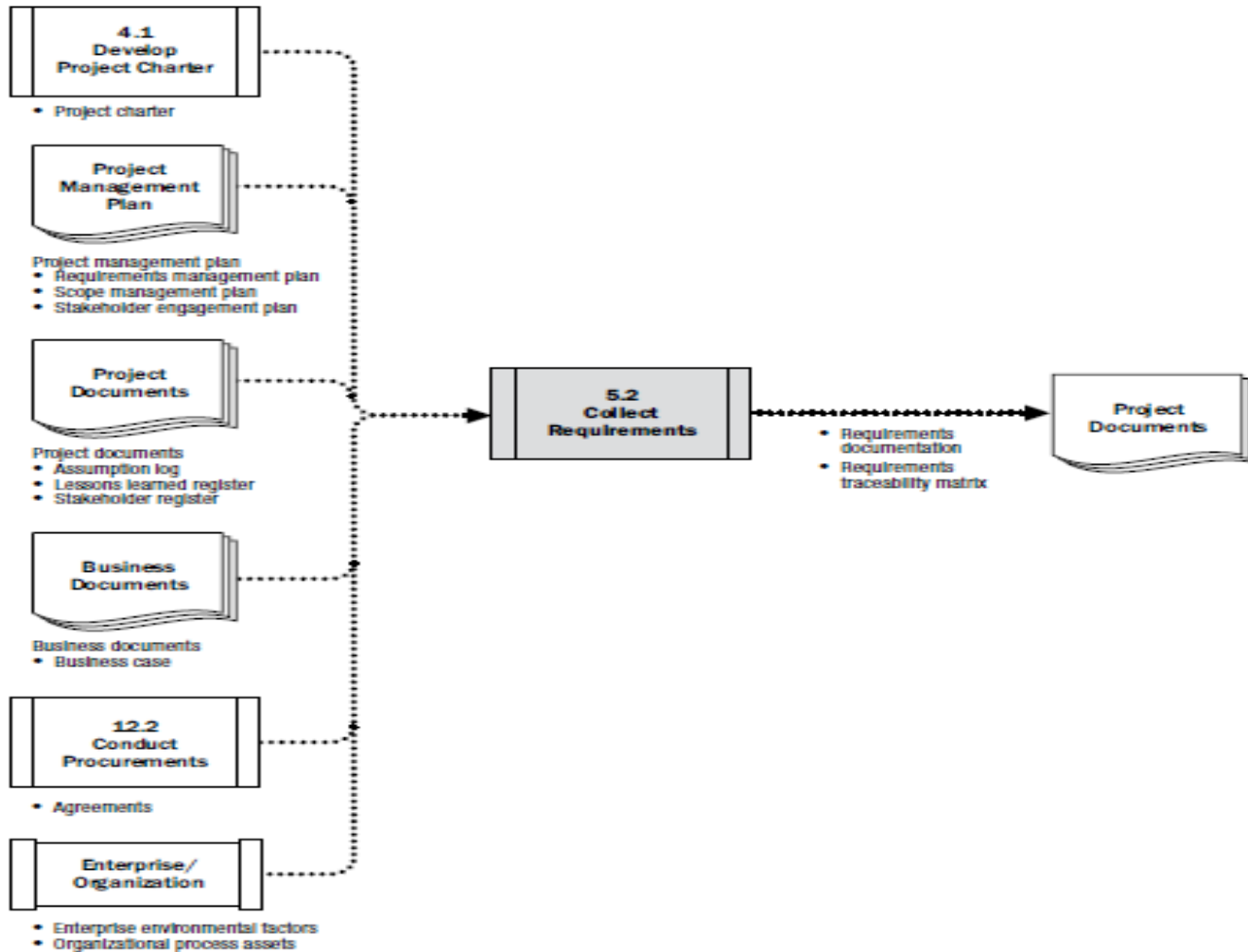
1) The scope management plan is a component of the project management plan that describes how the scope will be defined, developed, monitored, controlled, and validated. The components of a scope management plan include:

- Process for preparing a project scope statement;
 - Process that enables the creation of the WBS from the detailed project scope statement;
 - Process that establishes how the scope baseline will be approved and maintained; and
 - Process that specifies how formal acceptance of the completed project deliverables will be obtained.
- The scope management plan can be formal or informal, broadly framed or highly detailed, based on the needs of the project.

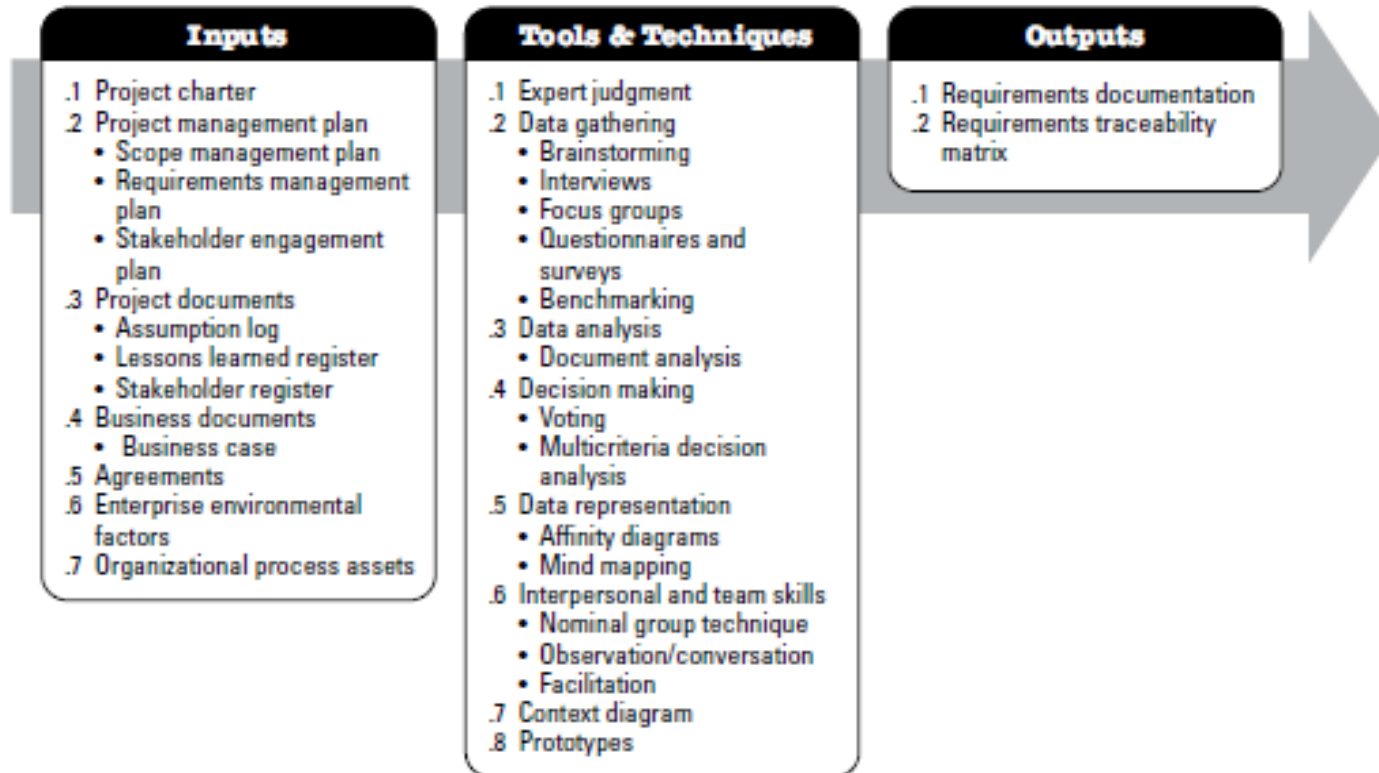
Guidelines to Develop a Scope Management Plan

- Review the project management plan and subsidiary plans.
- Review the enterprise environmental factors.
- Review the organizational process assets.
- Use tools and techniques such as expert judgment.
- Hold meetings to develop the scope management plan.
- Document the scope management plan and the requirements management plan.

Collect Project Requirements



Collect Requirements



Project Requirements

- You need to be aware of the project stakeholder requirements and document them to avoid missing critical information.
- Conditions or capabilities that must be accomplished by project outcomes
- Outcomes and expectations of customer, sponsor, and stakeholders
- Foundation for building the WBS

Requirements Documentation

- Business requirements
- Stakeholder requirements
- Solution requirements
- Project requirements
- Transition requirements
- Requirements assumptions, dependencies, and constraints

Requirements Traceability Matrix

- The implementation of a requirements traceability matrix helps ensure that each requirement adds business value by linking it to the business and project objectives.
- It provides a means to track requirements throughout the project life cycle, helping to ensure that requirements approved in the requirements documentation are delivered at the end of the project.
- Finally, it provides a structure for managing changes to the product scope

Requirements Traceability Matrix

Requirements Traceability Matrix								
Project Name:								
Cost Center:								
Project Description:								
ID	Associate ID	Requirements Description	Business Needs, Opportunities, Goals, Objectives	Project Objectives	WBS Deliverables	Product Design	Product Development	Test Cases
001	1.0							
	1.1							
	1.2							
	1.2.1							
002	2.0							
	2.1							
	2.1.1							
003	3.0							
	3.1							
	3.2							
004	4.0							
005	5.0							

Guidelines to Collect Project Requirements

- Review the scope management plan.
- Review the requirements management plan.
- Review the stakeholder management plan.
- Review the project charter.
- Review the stakeholder register.
- Use tools and techniques such as interviews, focus groups, facilitated workshops, group creativity techniques, and so on.
- Document the requirements and the requirements traceability matrix.

Define Scope

Inputs

- .1 Project charter
- .2 Project management plan
 - Scope management plan
- .3 Project documents
 - Assumption log
 - Requirements documentation
 - Risk register
- .4 Enterprise environmental factors
- .5 Organizational process assets

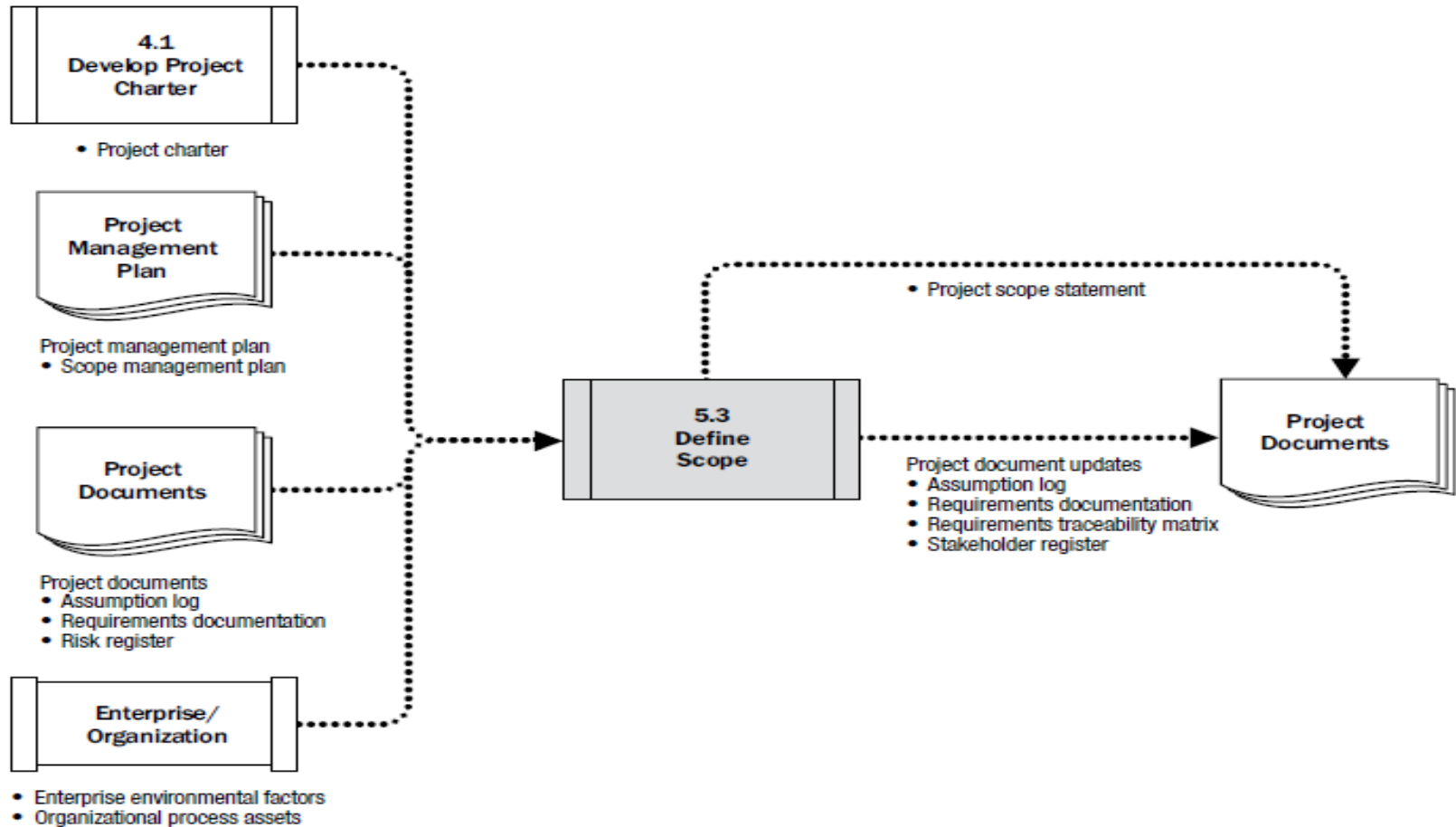
Tools & Techniques

- .1 Expert judgment
- .2 Data analysis
 - Alternatives analysis
- .3 Decision making
 - Multicriteria decision analysis
- .4 Interpersonal and team skills
 - Facilitation
- .5 Product analysis

Outputs

- .1 Project scope statement
- .2 Project documents updates
 - Assumption log
 - Requirements documentation
 - Requirements traceability matrix
 - Stakeholder register

Define Project Scope



Define Scope Tools and Techniques

- **Product Analysis:** the process of translating project objectives into tangible solid deliverables and requirements.

Technique	Description
Functional Analysis	Analyzing all of the things that a product does, including primary and related functions to identify unnecessary functions that might drive up cost on a product.
Value Engineering And Value Analysis	Identifying and developing the cost versus benefits ratio for each function of a product.
Quality Function Deployment	Identifying what the customer's needs are, and translating those needs into technical requirements.
Systems Engineering	Analyzing products holistically, integrating factors such as users, usage environment, and related hardware or software with which the product must function.

Define Scope Tools and Techniques

- **Alternatives Identification Techniques:** are methods for generating as many alternative solutions and plans as possible during planning to achieve project goals

Technique	Description
Lateral Thinking	A creative approach to problem solving in which the team attempts to think about a problem in new ways and generate a fresh solution.
Brainstorming	A general creativity technique for generating possible alternatives. The goal is to generate as many ideas as possible from as many team members as possible (ex: mind map)
Delphi Technique	A group technique that extracts and summarizes anonymous group input to choose among various alternatives.

Define Scope Outputs

- Project Scope Statement

Content	Description
Project Objectives	The measurable success criteria for the project.
Product Description	The characteristics of the product, service, or result of the project undertaken.
Project Requirements	The conditions or capabilities the deliverables of the project must be met.
Project Deliverables	Any tangible, measurable result or outcome required to complete a project or portion of a project.
Project Boundaries	The parameters of what is and what is not included within a project.
Product Acceptance Criteria	The process and criteria for accepting finished products or services resulting from a project.
Project Constraints	Factors that limit the way that the project can be approached
Project Assumptions	Statements that must be taken to be true in order for the planning to begin.

The Scope Statement

- A Scope Statement: defines the project and what it does and does not need to be accomplished (what is included and what is not included) (what is in scope and what is out of scope).
- The project scope statement is created at an early stage in the project to reflect the stakeholders' common understanding of major activities to be performed in the project.

The Scope Statement

- The project scope statement typically includes :
 - Project objectives, deliverables, and requirements
 - Project constraints and assumptions
 - Product acceptance criteria
- It may also include initial project organization, defined risks, schedule milestones, initial work breakdown structure, and approval requirements.

The Scope Statement

Project Scope Statement

Project Name: |
Department:
Project Manager:
Date:

Prepared By

Document Owner(s)	Project/Organization Role

Version History

Version	Date	Author	Change Description

Project Description

Project Justification

Project Product

Project Deliverables

Project Objective

Assumptions/Limitations

Overall Project Priority:

☐ High ☐ Medium ☐ Low

Comments:

Approved By:

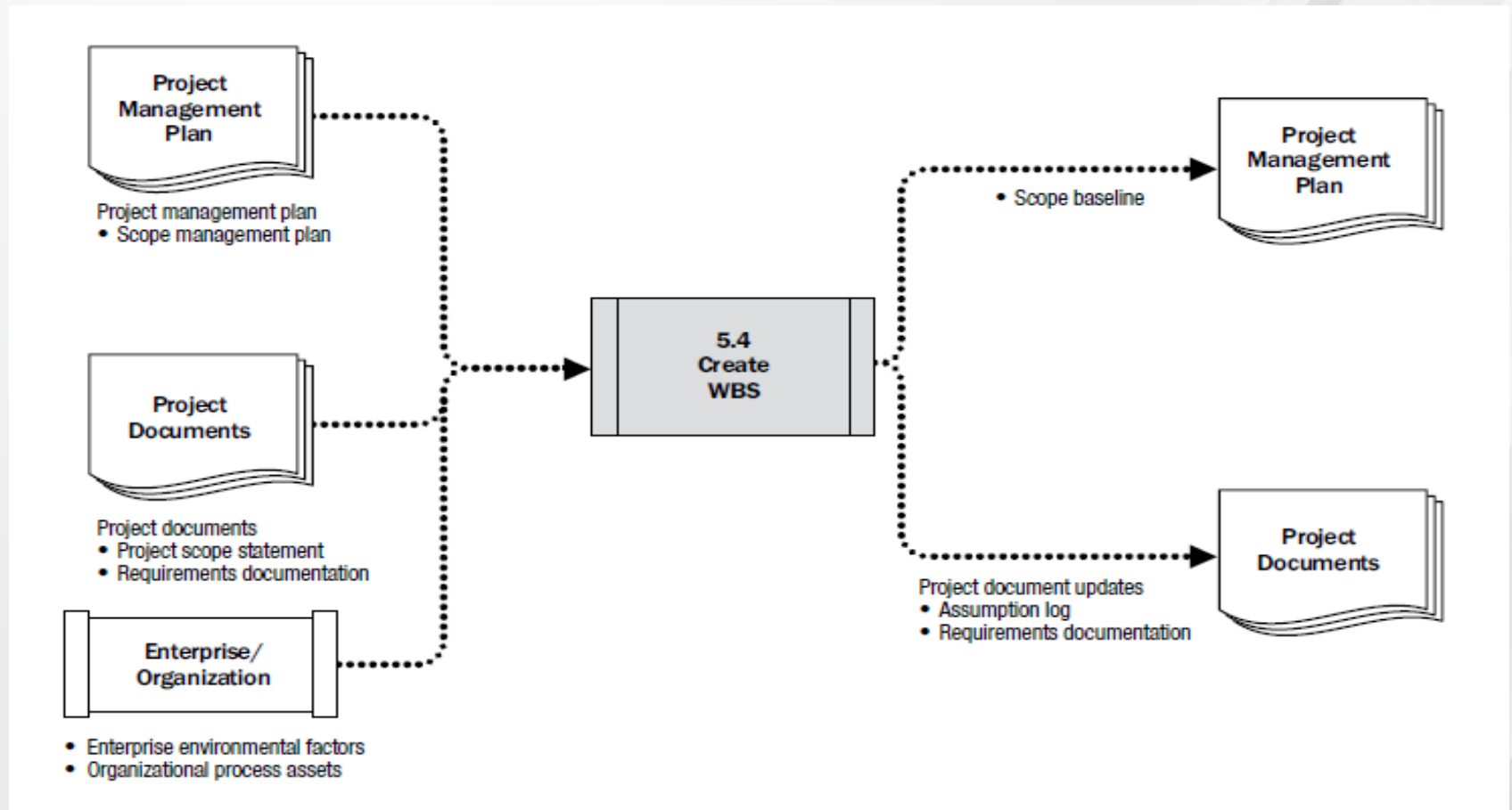
Project Manager:

Date:

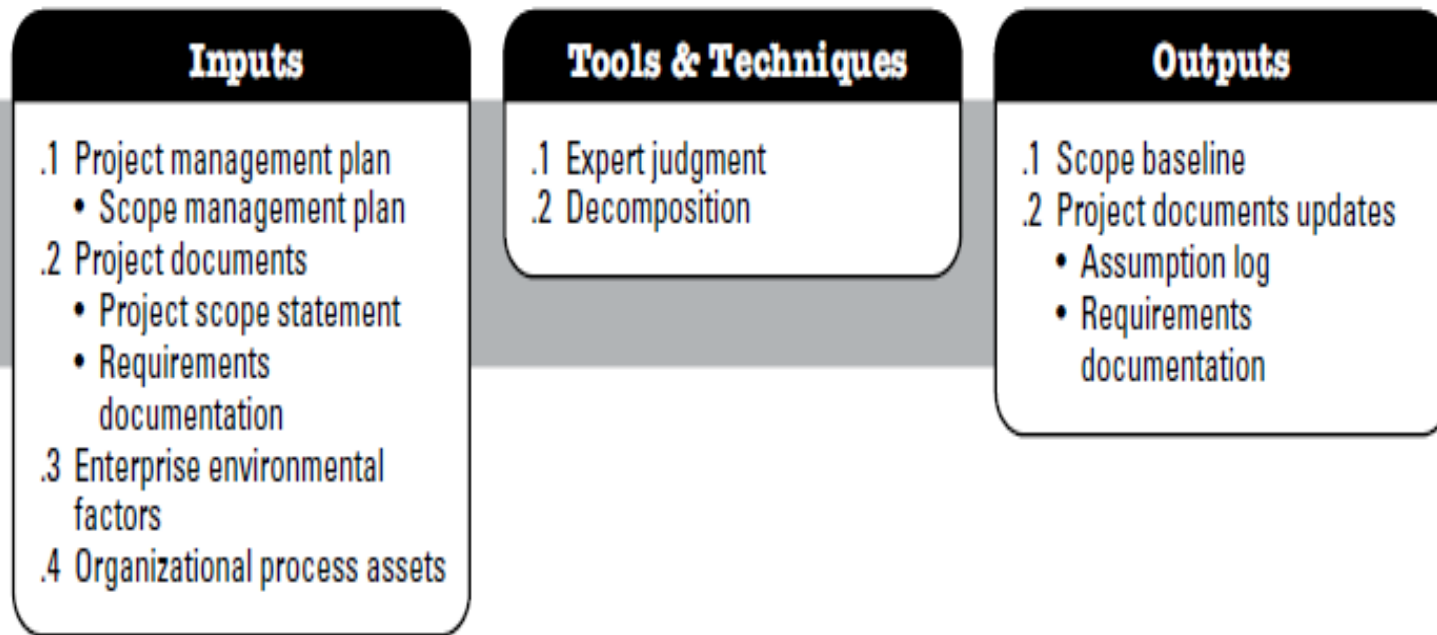
Guidelines to Develop a Project Scope Statement

- Review the scope management plan for the activities for developing, monitoring, and controlling the project scope.
- Review the project charter for the high-level project description and product characteristic and project approval requirements.
- Review the requirements documentation.
- Review the organizational process assets.
- Use tools and techniques such as expert judgment, product analysis, alternatives generation, and facilitated workshops to define the project scope.
- Document the project scope statement and update any project documents, as needed.

Create a Work Breakdown Structure (WBS)



Create a Work Breakdown Structure (WBS)



Work Breakdown Structure

- You created a project scope statement and identified the skills required for the project team; the next logical step will be to identify the smaller tasks in the project that can be assigned to the individual team members.
- The Work Breakdown Structure (WBS): is a hierarchical structure that subdivides project work into smaller, more manageable pieces of work named work packages which will be broken down to activities.

Work Breakdown Structure

- A WBS defines the total scope of work required to complete the project; the deliverables and their component sub-deliverables are represented on the WBS in levels of descending order.
- The smallest, most granular deliverable that cannot be further subdivided is called a work package.

Work Packages / Activities

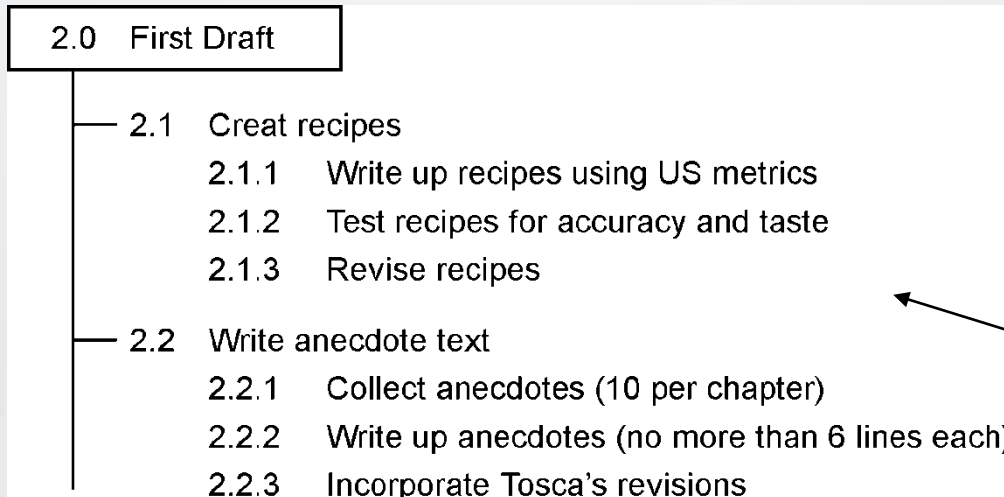
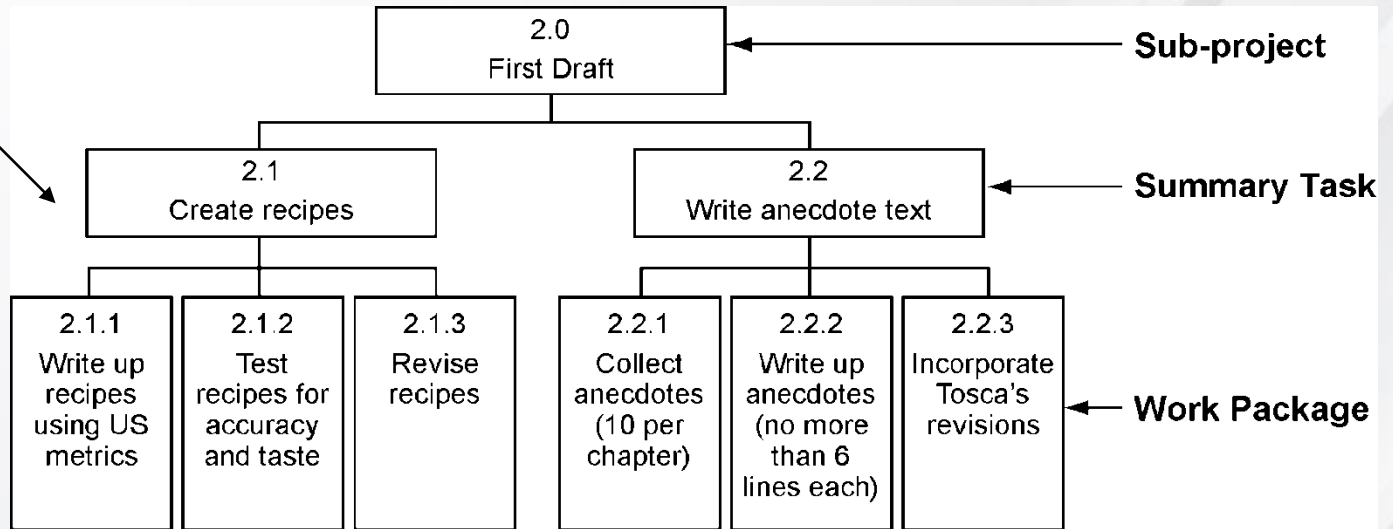
- **Work Package:** refers to the planned work or the deliverables that are contained in the lowest-level component of the work breakdown structure (WBS).
- Work packages can be broken down or subdivided into smaller, even more manageable components, called activities.
- **Activity:** is a unit of project work that must be performed to complete a project deliverable; every activity has a duration, cost and consumes resources.

Create WBS Tools and Techniques

- Decomposition: “drill - down”: separating deliverables and their required work into manageable, measurable, assignable, and more specific work packages.

WBS (Hierarchy and Tree Format)

Hierarchy Format



Tree Format

Work Package Example

❖ Work Packages are used in estimating the scheduling, and staffing the project.

Work Package WBS#: 1.1.3.1		Title: Initial Web site Design	
Work package assigned to: Amy Phillips Description: Approved color online comps of home page and at least one other page of company Web site. Design should include interface elements and proposed functionality.			
WBS#	Activity	Responsible Party	Estimated Duration (Hours)
1.1.3.1.1	Research requirements		
1.1.3.1.2	Produce paper comps of 3 designs		
1.1.3.1.3	Review comps & select design		
1.1.3.1.4	Produce online comps of selected design		
1.1.3.1.5	Review and approve online comps		

Guidelines to Create a WBS

- Review the scope management plan
- Review the project scope statement
- Review the requirements documentation
- Review the enterprise environmental factors
- Review organizational process assets
- Use tools and techniques
- Use expert judgment
- Document the scope baseline.
- Validate your WBS using a bottom-up approach to ensure the lower-level components are necessary and sufficient for the completion of each decomposed item.
- Using your organization's or project's code of accounts, assign a unique numeric cost code for each element indicating its branch and level on the WBS for cost tracking and reporting.



Thank You

