



Shoubra faculty
of Engineering

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Projects Management (PM)

إدارة المشروعات

Lecture 4

SCOPE MANAGEMENT

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Project Management Knowledge Areas

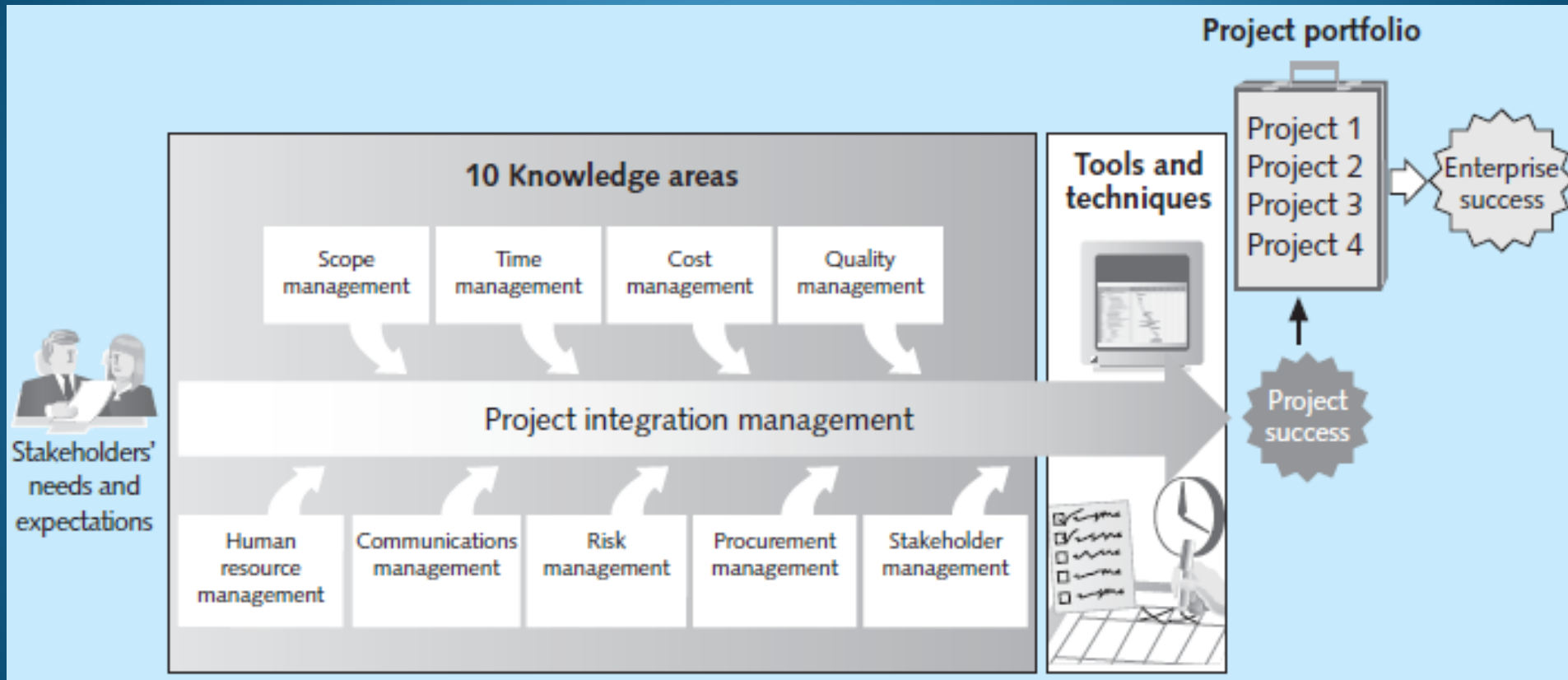


Fig. Project Management Framework clarifying knowledge areas

Scope Management

Scope Management

➤ Project scope management includes the processes involved in defining and controlling what work is or is not included in a project.

6 main processes are involved in scope management:

Mapping between scope management and PM process groups

	Initiating	Planning	Executing	Monitoring and control	Closing
Scope Management		<ol style="list-style-type: none">1) Plan Scope Management2) Collect Requirements3) Define Scope4) Create Work Breakdown Structure(WBS)		<ol style="list-style-type: none">5) Validate Scope6) Control Scope	

1) Planning Scope Management

Planning

- 1) Plan Scope Management
- 2) Collect Requirements
- 3) Define Scope
- 4) Create WBS

- Planning scope management involves how the project's **scope and requirements** will be managed throughout the **life** of the project.
- This plan helps **reduce** the risk of project **scope creep** (i.e., the tendency of scope to be bigger and bigger).

A Project Charter **ميثاق**, can be defined as the **document** issued by the **sponsor/initiator** of the project that formally **authorizes** the existence of the project and provides the Project Manager with the authority to apply **organizational resources** to Project Activities.



Fig. Plan Scope Management: Inputs, Tools & Techniques, and Outputs

1) Planning Scope Management (cont'd)

Input: Project Management Plan

- Approved subsidiary الفرعية plans of the project management plan

Input: Project Charter

- Provides the high-level project description and product characteristics from the project statement of work.

Input: Enterprise Environmental Factors

Can include: Organization's culture, Infrastructure, Marketplace conditions

Input: Organizational Process Assets

Can include: Policies- procedures- historical information- lessons learned knowledge base.

Organizational Process Assets are “The plans, processes, policies, procedures, and knowledge bases specific to and used by the performing organization”

1) Planning Scope Management (cont'd)

Output: Scope management plan

Include

- How to prepare a detailed project scope statement:
 - ✓ templates or guidelines to follow
- How to create a WBS
- How to maintain and approve the WBS:
 - ✓ The initial WBS often changes, and project team members disagree on what should be included. The scope management plan describes guidelines for maintaining the WBS and getting approval for it.
- How to obtain formal acceptance of the completed project deliverables
- How to control requests for changes to the project scope:
 - ✓ guidelines for submitting, evaluating, and approving changes to scope

1) Planning Scope Management (cont'd)

How to Create a WBS? work-breakdown structure

1. Determine and describe the project statement.
2. Highlight all the necessary phases of the project.
3. Create and list the deliverables (as well as how success will be measured)
4. Divide the deliverables into manageable tasks.



Project Name	Task 1	Subtask 1.1	Work Package 1.1.1
			Work Package 1.1.2
		Subtask 1.2	Work Package 1.2.1
			Work Package 1.2.2
	Task 2	Subtask 2.1	Work Package 2.1.1
			Work Package 2.1.2

1) Planning Scope Management (cont'd)

Output: Requirements management plan

- **Requirements:** are conditions or capabilities that must be met by the project or present in the **product**, **service**, or **result** to satisfy an agreement or other formally imposed **specification**.
- **The requirements management plan** documents how project requirements will be **analyzed**, **documented**, **prioritized**, **traced**, and **managed**.

2) Collecting Requirements

Planning

- 1) Plan Scope Management
- 2) **Collect Requirements**
- 3) Define Scope
- 4) Create WBS

- Collecting requirements involves **defining and documenting** the features and functions of the products for the project as well as the processes used for creating them.
- A major consequence of **not defining** requirements well is **very costly changes later**.
- Requirements become the **foundation** of the WBS.
- Cost, schedule, quality planning, and sometimes **procurement** are all based upon these requirements.
- The **project's size**, **complexity**, **importance**, affect how much **effort** is spent on collecting requirements.

2) Collecting Requirements (cont'd)

Methods for collecting requirements

- ✓ **Interviewing** stakeholders one on one (very effective but time consuming)
- ✓ **Workshops, Group creativity and decision making techniques** (Quick)
- ✓ **Questionnaires and surveys**
- ✓ **Observation**
- ✓ **Benchmarking**: generating ideas by comparing projects to other projects inside or outside the organization

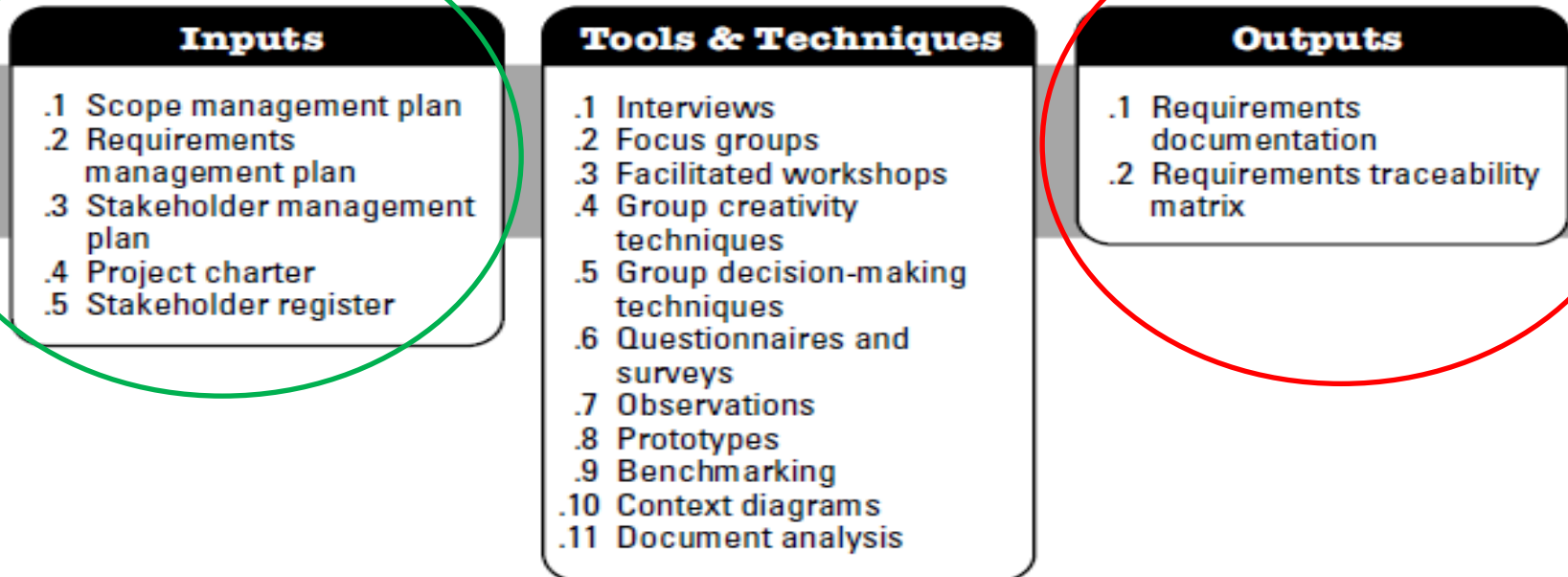


Fig. Collecting requirements: Inputs, Tools & Techniques, and Outputs

2) Collecting Requirements (cont'd)

Input: Scope Management Plan

Input: Requirements Management Plan

Input: Project Charter

Discussed before

stakeholder management plan defines and documents the approach and actions that will increase support and minimize the negative impacts of **stakeholders** throughout the life of the project.

Input: Stakeholders Management Plan

- Used to understand stakeholder communication requirements and the level of stakeholder engagement

Input: Stakeholder Register

A stakeholder register is a project management **document** which contains the **information** about the project's **stakeholders**.

- Used to identify stakeholders who can provide **information** on the **requirements**. It also captures major requirements and main **expectations** stakeholders may have for the project

2) Collecting Requirements (cont'd)

Output: Requirements Documentations

- Requirements **document** may range from a simple document listing all the requirements **categorized** by **stakeholder** and priority, to more elaborate forms containing an **executive summary**, detailed **descriptions**, and **attachments**.
- Requirements are often broken down into categories e.g,
 - ✓ Business requirements
 - ✓ Functional requirements
 - ✓ Stakeholder requirements
 - ✓ Performance requirements
 - ✓ Quality requirements
 - ✓ Training requirements

2) Collecting Requirements (cont'd)

Output: Requirements Traceability Matrix (RTM)

What is Traceability Matrix? (TM)

A Traceability Matrix is a document that co-relates any two-baseline documents that require a many-to-many relationship to check the completeness of the relationship.

It is used to track the requirements and to check the current project requirements are met.

- RTM is a table that lists requirements, their various **attributes**, the **status** of the requirements to ensure that all are addressed. Also RTM **links** product requirements from their **origin** to the **deliverables** that satisfy them.

Requirement No.	Name	Category	Source	Status
R32	Laptop memory	Hardware	Project charter and corporate laptop specifications	Complete. Laptops ordered meet requirement by having 16 GB of memory.

Table: Sample entry in a requirements traceability matrix

3) Defining Scope

Planning

- 1) Plan Scope Management
- 2) Collect Requirements
- 3) Define Scope
- 4) Create WBS

- Provide a **detailed** definition of the **work required** for the project.
- Scope definition is very important to project success because it helps improve the accuracy of **time**, **cost**, and **resource estimates**.
- Describes **project boundaries** by defining **which of the requirements will be included in or excluded from the project scope**.



Fig. Defining Scope: Inputs, Tools & Techniques, and Outputs

3) Defining Scope (cont'd)

Output: Project Scope Statement

- The project scope statement is the description of the project scope, major deliverables, assumptions, and constraints.
- Provides a common understanding of the project scope among project stakeholders.
- Guides the project team-work during execution, and provides the baseline for evaluating whether requests for changes RFC or additional work are contained within or outside the project's boundaries.

3) Defining Scope (cont'd)

Output: Project Scope Statement

Include:

- Product scope description
- Acceptance criteria:
 - set of conditions that is required to be met before deliverables are accepted
- Deliverables
- Project exclusion:
 - Stating what is out of scope for the project helps to manage stakeholders' expectations.
- Constraints:
 - Ex. Predefined **budget** and **schedule** supposed by sponsor/customer
- Assumptions:
 - What you assume to be true but there is a risk that it may not be
 - Ex. You may assume that there are no rocks when digging for a swimming pool.
 - Risk**: you may need special equipment and more time if you strike the rock

3) Defining Scope (cont'd)

- project charter contains high level information
- project scope statement contains a detailed description of the scope.

In details compare between project charter and project scope statement?

Project Charter

Project purpose or justification
Measurable project objectives and related success criteria
High-level requirements
High-level project description
High-level risks
Summary milestone schedule
Summary budget
Stakeholder list
Project approval requirements (what constitutes success, who decides it, who signs off)
Assigned project manager, responsibility, and authority level
Name and authority of the sponsor or other person(s) authorizing the project charter

Project Scope Statement

Project scope description (progressively elaborated)
Acceptance criteria
Project deliverables
Project exclusions
Project constraints
Project assumptions

3) Defining Scope (cont'd)

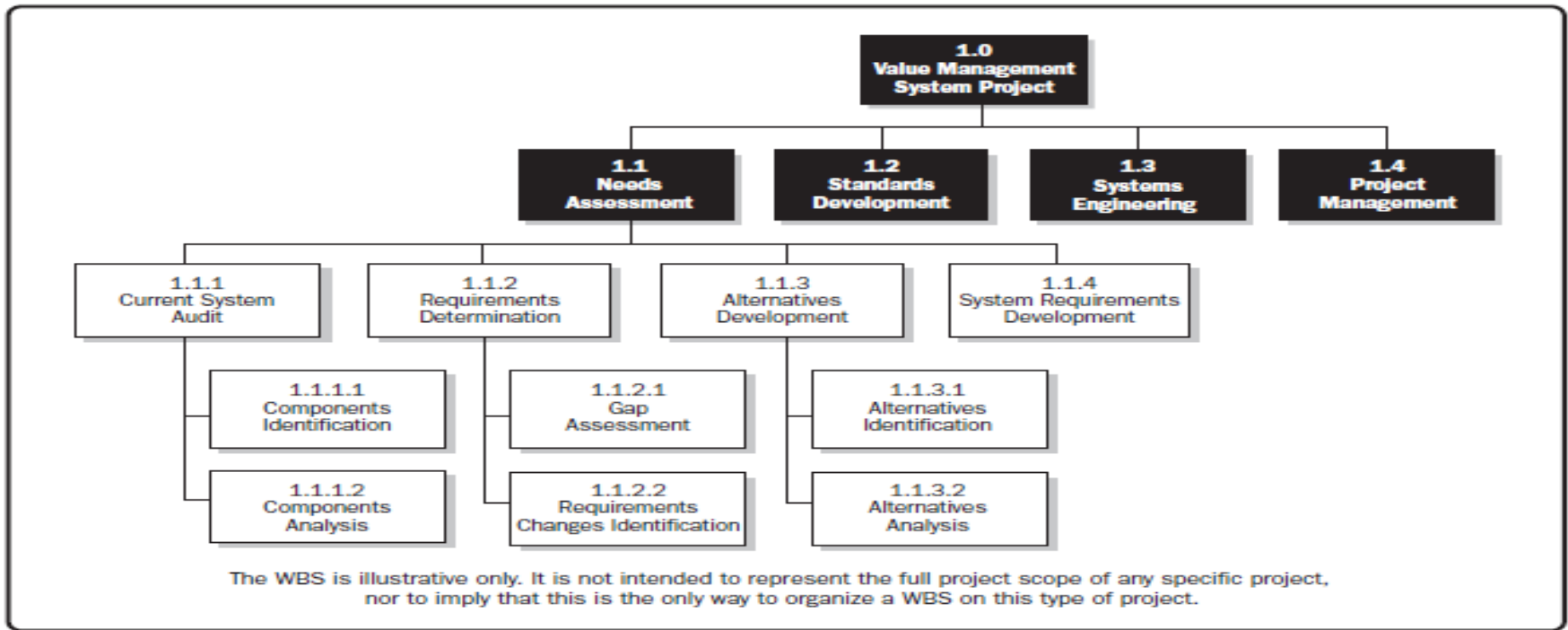
Output: Project documents update

Project documents that may be updated include, but are not limited to:

- ✓ Stakeholder register
- ✓ Requirements documentation
- ✓ Requirements traceability matrix **RTM**

4) Create Work Breakdown Structure WBS

- The process of subdividing project deliverables and project work into smaller, more manageable components.



Next Lecture

Gap: A set of techniques to examine and describe the gap between current performance and desired future goals

Create WBS: Inputs/methods/outputs

Thanks for Attention