

إدارة المشروعات

# Projects Management



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Lecture 4

Scope Management

WBS

# Scope Management Processes

## 3. Create Work Breakdown Structure (WBS)

- WBS is a tool used to **break projects** down into **manageable pieces**.
- It is the **start** of the **planning process** (usually called the 'foundation' of project planning).
- A WBS is the decomposition or dividing of the major project deliverables (i.e., scope) into smaller and more manageable components.
- The WBS is a deliverable-oriented hierarchical decomposition of the work to be executed by the project team to accomplish the project objectives and create the required deliverables.

There is another tool called a **Product Breakdown Structure (PBS)**, which comes before the WBS and breaks a project down into outputs (**products**) needed to complete the project.



# Scope Management Processes

## 3. Create Work Breakdown Structure (WBS)

### ➤ Why Create a WBS?

1. Provides a solid **foundation** for **planning** and **scheduling**.
2. Breaks down projects into **manageable work packages**.
3. Provides a way to **estimate project costs** accurately.
4. Makes sure **no important** deliverables are **forgotten**.
5. Helps project managers with **resource allocation**.
6. Provides an ideal tool for **team brainstorming** and for promoting team cohesion.



# Scope Management Processes

## 3. Create Work Breakdown Structure (WBS)

➤ **WBS Inputs:** three inputs to the WBS process

1. **Project Scope Statement:** Detailed description of the project's deliverables and work needed to create them.
2. **Statement of Requirements:** Document detailing the business need for the project and what will be delivered in detail.
3. **Organizational Process Assets:** The organization policies, procedures, guidelines, templates, plans etc.





# Scope Management Processes

## 3. Create Work Breakdown Structure (WBS)

### ➤ WBS Outputs

1. Work Breakdown Structure (**WBS**): Deliverables based decomposition of the total project scope.
2. **WBS Dictionary**: Accompanying **document describing** each WBS element.
3. **Glossary of Terms**: provide a glossary of terms as some of the terms are not understood by persons without a project management background.



# Scope Management Processes

## Components of the Work Breakdown Structure

### 1. WBS Element:

- ✓ Each component of the WBS and its attributes comprise a WBS element.

### 2. Work Package:

- ✓ The lowest level WBS component for each branch of the WBS
- ✓ One of the main problems that project managers face while creating a WBS is deciding on the correct size for a work package:
  - A work package that is **too big** would imply loose control on the activities.
  - A work package that is **too small** would consume a lot of effort in managing.
  - **The 8/80** rule commonly followed by project managers, where work package is No smaller than 8 hours, No larger than 80 hours, and Between 1 and 10 days in duration



# Scope Management Processes

## Components of the Work Breakdown Structure

### 3. WBS Code Numbers

- The WBS code number is a **unique identifier** for each element of the WBS
- Its purpose is **designating** the elements **hierarchical location** within the WBS.

### 4. WBS Dictionary:

- The WBS Dictionary contains all the details of the Work Breakdown Structure which are necessary to successfully complete the project.
- **Most importantly** it contains a **definition** of each **Work Package** which can be thought of as a mini scope statement.

# Scope Management Processes

## WBS Dictionary Example

- Most WBS dictionaries contain more information than we show in our sample.
- These things usually include Level of Effort, Cost Control Numbers, Resource Assignments, Responsibility Assignments, etc.

Level	WBS Code	WBS Code	Definition
1	1	Widget Management System	All work to implement a new widget management system.
2	1.1	Initiation	The work to initiate the project.
3	1.1.1	Evaluation & Recommendations	Working group to evaluate solution sets and make recommendations.
3	1.1.2	Develop Project Charter	Project Manager to develop the Project Charter.
3	1.1.3	Deliverable: Submit Project Charter	Project Charter is delivered to the Project Sponsor.
3	1.1.4	Project Sponsor Reviews Project Charter	Project sponsor reviews the Project Charter.
3	1.1.5	Project Charter Signed/Approved	The Project Sponsor signs the Project Charter which authorizes the Project Manager to move to the Planning Process.
2	1.2	Planning	The work for the planning process for the project.
3	1.2.1	Create Preliminary Scope Statement	Project Manager creates a Preliminary Scope Statement.
3	1.2.2	Determine Project Team	The Project Manager determines the project team and requests the resources.
3	1.2.3	Project Team Kickoff Meeting	The planning process is officially started with a project kickoff meeting which includes the Project Manager, Project Team and Project Sponsor (optional).
3	1.2.4	Develop Project Plan	Under the direction of the Project Manager the team develops the project plan.



# Scope Management Processes

## Components of the Work Breakdown Structure

### 5. Glossary of Terms

➤ It's important that you provide a glossary of terms as some of the terms are not understood by persons without a project management background.

- ✓ **Level of Effort:** Level of Effort (LOE) is how much work is required to complete a task.
- ✓ **WBS Code:** A unique identifier assigned to each element in a Work Breakdown Structure for the purpose of designating the elements hierarchical location within the WBS.
- ✓ **Work Package:** A Work Package is a deliverable or work component at the lowest level of its WBS branch.

# Scope Management Processes

## Components of the Work Breakdown Structure

### 6. WBS Levels:

- ✓ All the work to be done on the project is categorized into hierarchical levels
- ✓ The upper levels represent the **major deliverables** for the project
- ✓ The lower levels represent the **granular level activities** needed to be performed towards achieving the deliverable.
- ✓ The number and complexity of the WBS levels is **dependent on the size and nature** of the project.



# Scope Management Processes

## 3. Create Work Breakdown Structure (WBS)

### ➤ WBS Formats

#### 1. The Outline form

- Can be created in a spreadsheet; numbering each level and sub-level (**3-level WBS is shown in figure**)
- the project manager defines the **key objectives** first and then identifies the **tasks** required to reach those goals.
- Indentation is used in outline form with WBS codes

1. Widget Management System
  - 1.1 Initiation
    - 1.1.1 Evaluation & Recommendations
    - 1.1.2 Develop Project Charter
    - 1.1.3 Deliverable: Submit Project Charter
    - 1.1.4 Project Sponsor Reviews Project Charter
    - 1.1.5 Project Charter Signed/Approved
  - 1.2 Planning
    - 1.2.1 Create Preliminary Scope Statement
    - 1.2.2 Determine Project Team
    - 1.2.3 Project Team Kickoff Meeting
    - 1.2.4 Develop Project Plan
    - 1.2.5 Submit Project Plan
    - 1.2.6 Milestone: Project Plan Approval
  - 1.3 Execution
    - 1.3.1 Project Kickoff Meeting
    - 1.3.2 Verify & Validate User Requirements
    - 1.3.3 Design System
    - 1.3.4 Procure Hardware/Software
    - 1.3.5 Install Development System
    - 1.3.6 Testing Phase
    - 1.3.7 Install Live System
    - 1.3.8 User Training
    - 1.3.9 Go Live
  - 1.4 Control
    - 1.4.1 Project Management
    - 1.4.2 Project Status Meetings
    - 1.4.3 Risk Management
    - 1.4.4 Update Project Management Plan
  - 1.5 Closeout
    - 1.5.1 Audit Procurement
    - 1.5.2 Document Lessons Learned
    - 1.5.3 Update Files/Records



# Scope Management Processes

## 3. Create Work Breakdown Structure (WBS)

### ➤ WBS Formats

#### 2. Hierarchical Structure

- is similar to the outline view but without indentation.
- Although this format is more difficult to read, it may be useful where you have many levels and indenting each level would make the table too large to fit into a document.

Level	WBS Code	Element Name
1	1	Widget Management System
2	1.1	Initiation
3	1.1.1	Evaluation & Recommendations
3	1.1.2	Develop Project Charter
3	1.1.3	Deliverable: Submit Project Charter
3	1.1.4	Project Sponsor Reviews Project Charter
3	1.1.5	Project Charter Signed/Approved
2	1.2	Planning
3	1.2.1	Create Preliminary Scope Statement
3	1.2.2	Determine Project Team
3	1.2.3	Project Team Kickoff Meeting
3	1.2.4	Develop Project Plan
3	1.2.5	Submit Project Plan
3	1.2.6	Milestone: Project Plan Approval
2	1.3	Execution
3	1.3.1	Project Kickoff Meeting
3	1.3.2	Verify & Validate User Requirements
3	1.3.3	Design System
3	1.3.4	Procure Hardware/Software
3	1.3.5	Install Development System
3	1.3.6	Testing Phase
3	1.3.7	Install Live System
3	1.3.8	User Training
3	1.3.9	Go Live
2	1.4	Control
3	1.4.1	Project Management
3	1.4.2	Project Status Meetings





# Scope Management Processes

## ➤ WBS Formats

### 3. Tabular Form

- The Tabular View is a nicely organized table view of the WBS.
- It is a good option for organizations which prefer table formats.

Level 1	Level 2	Level 3
1 Widget Management System	1.1 Initiation	1.1.1 Evaluation & Recommendations 1.1.2 Develop Project Charter 1.1.3 Deliverable: Submit Project Charter 1.1.4 Project Sponsor Reviews Project Charter 1.1.5 Project Charter Signed/Approved
	1.2 Planning	1.2.1 Create Preliminary Scope Statement 1.2.2 Determine Project Team 1.2.3 Project Team Kickoff Meeting 1.2.4 Develop Project Plan 1.2.5 Submit Project Plan 1.2.6 Milestone: Project Plan Approval
	1.3 Execution	1.3.1 Project Kickoff Meeting 1.3.2 Verify & Validate User Requirements 1.3.3 Design System 1.3.4 Procure Hardware/Software 1.3.5 Install Development System 1.3.6 Testing Phase 1.3.7 Install Live System 1.3.8 User Training 1.3.9 Go Live
	1.4 Control	1.4.1 Project Management 1.4.2 Project Status Meetings 1.4.3 Risk Management 1.4.4 Update Project Management Plan
	1.5 Closeout	1.5.1 Audit Procurement 1.5.2 Document Lessons Learned 1.5.3 Update Files/Records 1.5.4 Gain Formal Acceptance 1.5.5 Archive Files/Documents

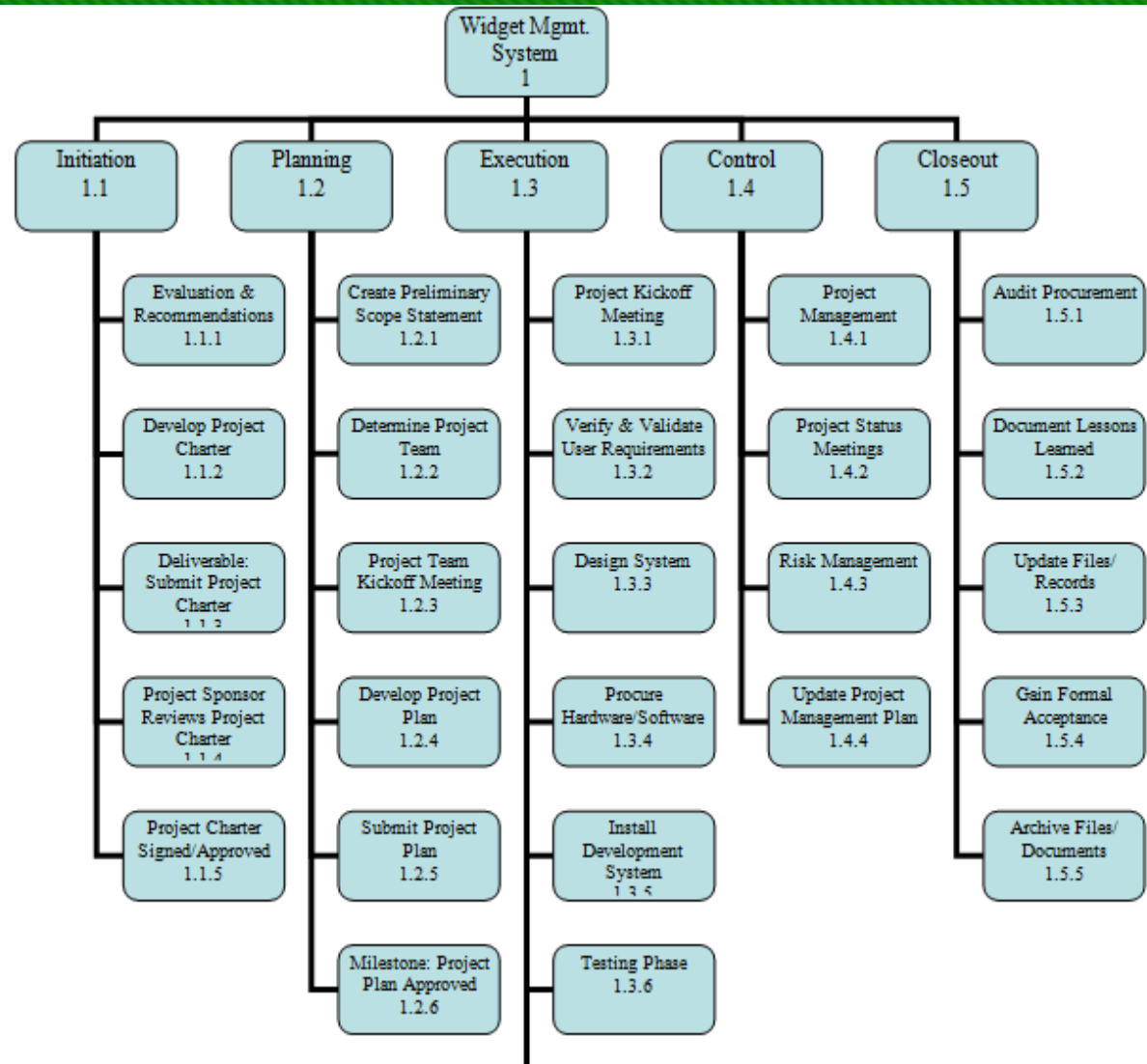


# Scope Management Processes

## ➤ WBS Formats

### 4. The Graphical View (Tree Structure)

- The WBS is depicted using a tree structure with each child element connected to the parent element through a line.
- The parent depicts a higher level which is decomposed into the child element.
- The elements at the bottom of the diagram are **Work Package**



# Scope Creep (Change)

- Small changes to projects are often difficult to detect but may build to large changes that cause project problems
- Can be caused by:

- ✓ Client requirements for additional features,
- ✓ New technology,
- ✓ Poorly defined requirements/design,
- ✓ Unidentified assumptions/risks





**Thank you for  
Listening**