Crosswind Learning

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Project Management Professional (PMP)® Exam

Crosswind Success Series: PMP® Exam Bootcamp Manual

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Version 6.1 aligned with the Project Management Institute, *A Guide to the Project Management Body of Knowledge, (PMBOK® Guide)* - Sixth Edition, Project Management Institute Inc., 2017

Define Scope (Continued)		
Key Outputs (Cont.)	Assumption Log	The assumption log is a document that lists the assumptions and constraints identified during the creation of the project charter. An assumption is an idea or statement taken to be true. An example of an assumption is the statement "there will be a robust market for the product created as a result of this project once it is available to the public." Examples of constraints are the project completion deadline, the budget threshold, or the limit on the number of employees that can be dedicated to the project. It's important to identify assumptions and constraints as early as possible and to update them as the project evolves.

Situational Question and Real World Application
Failure to effectively perform the Define Scope process can result in a discovery of requirements not determined during planning, which can lead to a variance in scope, schedule, or budget.

10.3.1. Project Scope Statement

Know the importance and characteristics of a project scope statement.

The project scope statement is a document that develops and helps attain buy-in on a common interpretation of the project scope. It can describe **what is, as well as what is not, included in the project**.

It typically includes the following:

- Product scope description (progressively elaborated)
- Product acceptance criteria
- Project deliverables
- Project exclusions
- Project constraints & assumptions

The source for the above text is the Project Management Institute, *A Guide to the Project Management Body of Knowledge*, (*PMBOK® Guide*) – Sixth Edition, Project Management Institute Inc., 2017, Pages 150-155

10.4. Create WBS (Planning Process Group)

Know the Key Inputs, Tools & Techniques, and Outputs for Create WBS.

During Create WBS, the major deliverables are divided into smaller components that can be easily estimated (schedule and cost), managed, and controlled. These components are ultimately rolled into the work breakdown structure (WBS).

Rolling wave planning can be used when information about the project is sparse, thereby resulting in a failure to appropriately decompose for a deliverable or subproject until future project information is known later in the project.

The lowest level of the WBS is the work package. Any subsequent decomposition generally results in the creation of activity lists.

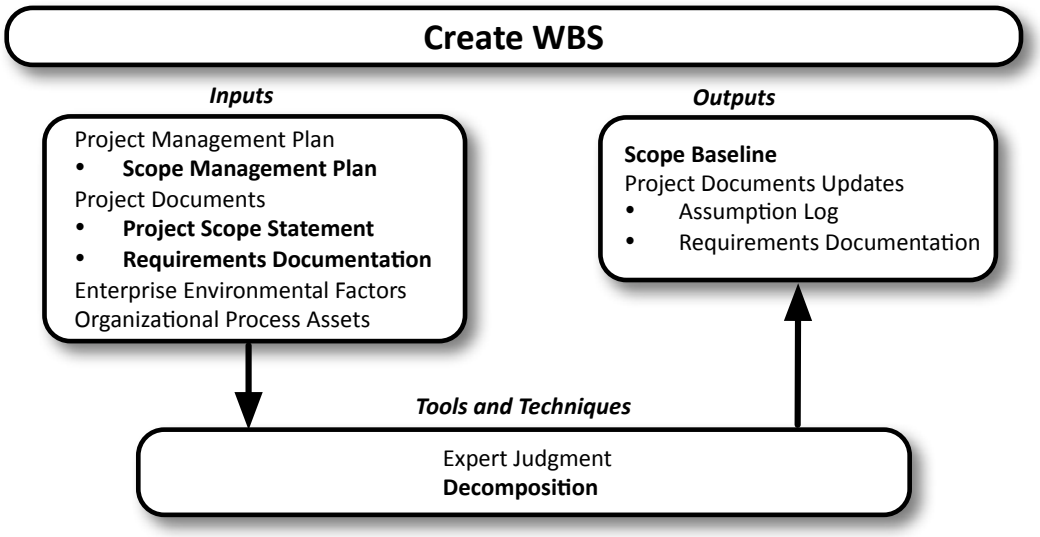

Figure 10-6: Create WBS Data Flow Diagram

The source for the above figure is the Project Management Institute, *A Guide to the Project Management Body of Knowledge*, (*PMBOK® Guide*) – Sixth Edition, Project Management Institute Inc., 2017, Figure 5-10, Page 156

Create WBS (Planning)		
Key Inputs	Scope Management Plan	The scope management plan is a component of the project management plan that details the delineation, evolution, monitoring, controlling, and validation of scope. It includes the methods for creating the project scope statement, authorizing and maintaining the WBS, authorizing formal acceptance of deliverables, and controlling change requests related to the scope statement. Note that the plan also delineates the manner in which the WBS will be created from the project scope statement.
	Project Scope Statement	The project scope statement defines the project by describing its scope, detailed deliverables and the process to create those deliverables, product acceptance criteria, exclusions, assumptions, and constraints. The statement provides all stakeholders with a common understanding of the scope of the project and enables the project team to effectively engage in detailed planning, guides the team's work during execution, and defines if change requests or additional work is within the scope of the project. The detailed scope statement includes a product scope description, a description of all deliverables, acceptance criteria for the deliverables, and exclusions. The scope statement differs from the project charter in that the charter is high-level and the scope statement is detailed.

Create WBS (Continued)		
Key Inputs (Cont.)	Requirements Documentation	Requirements documentation delineates the requirements that will be included in the scope and the manner in which the particular requirements meet the business needs of the project.
Key Tools and Techniques	Decomposition	Decomposition breaks down the project scope and deliverables into manageable components. The work breakdown structure decomposes the work into work packages, the smallest components that can be managed and estimated in terms of schedule and budget. Decomposition generally involves determining and evaluating the deliverables and related work, constructing and organizing the WBS, decomposing upper-level components by subdividing the work for each deliverable into its most basic components, creating and assigning identification codes to WBS components, and verifying that the decomposition of deliverables has been done appropriately.
Key Outputs	Scope Baseline	The scope baseline is the authorized version of the **scope statement**, **WBS** (to the level of work package with individual identification codes), and **WBS dictionary**. The scope baseline is subject to change control. Note that each work package is a part of a control account, a management control item where scope, budget, and schedule are combined and compared to measure performance.

Situational Question and Real World Application

Failure to effectively perform the Create WBS process can result in the discovery of required items that were not considered during initial planning, therefore not addressed in the work breakdown structure (WBS). This can result in scope, schedule, or cost variance.

10.4.1. Work Breakdown Structure (WBS)

Know the principles, characteristics, and importance of a work breakdown structure (WBS) in graphical format.

The work breakdown structure (WBS) is one of the most important documents created during the project planning process. The main output of the Create WBS process is decomposition of the project scope statement and the project scope. Generally **created by the project manager and the team** doing the work, the WBS describes the work breakdown and restricts its content to listing **only the project work**. It also helps the team's buy-in to the project by allowing its input.

To create the WBS, the main pieces of the project work must be defined and then decomposed to an appropriate level of detail so that each activity is definable, trackable, and manageable. When completed, the **WBS should encompass all of the work of the project**.

Generally, a heuristic (rule of thumb) is used to determine how the **work is broken down and the level of decomposition required for the work packages**. Work packages can be loosely considered deliverables because their completion should result in project completion.

Once the WBS is created, a number of key items can be started including the activity list, the schedule, the budget, any resources to be assigned, and risk planning. If time and attention is not properly allocated to the WBS, the project may have challenges or even fail.

Figure 10-7: WBS Process Components illustrates the components of the WBS: **control accounts, planning packages, and work packages (the lowest level of the WBS)**. Dashed lines define the boundary of WBS decomposition from the most detailed output through the least detailed output. Note that the milestones and activities lists, which align with the WBS, are created during the Define Activities process in the Project Schedule Management chapter.

Control accounts are specific points in the work breakdown structure (WBS) where the project scope, budget, actual cost, and schedule are combined and then compared to measure performance metrics. This allows tracking progress at appropriate levels of detail throughout the work breakdown structure (WBS). Reference the Project Schedule Management chapter for details.

In some situations, the work of a project cannot be fully decomposed since it is not fully defined. Such situations occur in **Agile or adaptive** environments where the **rolling wave** planning approach is used.

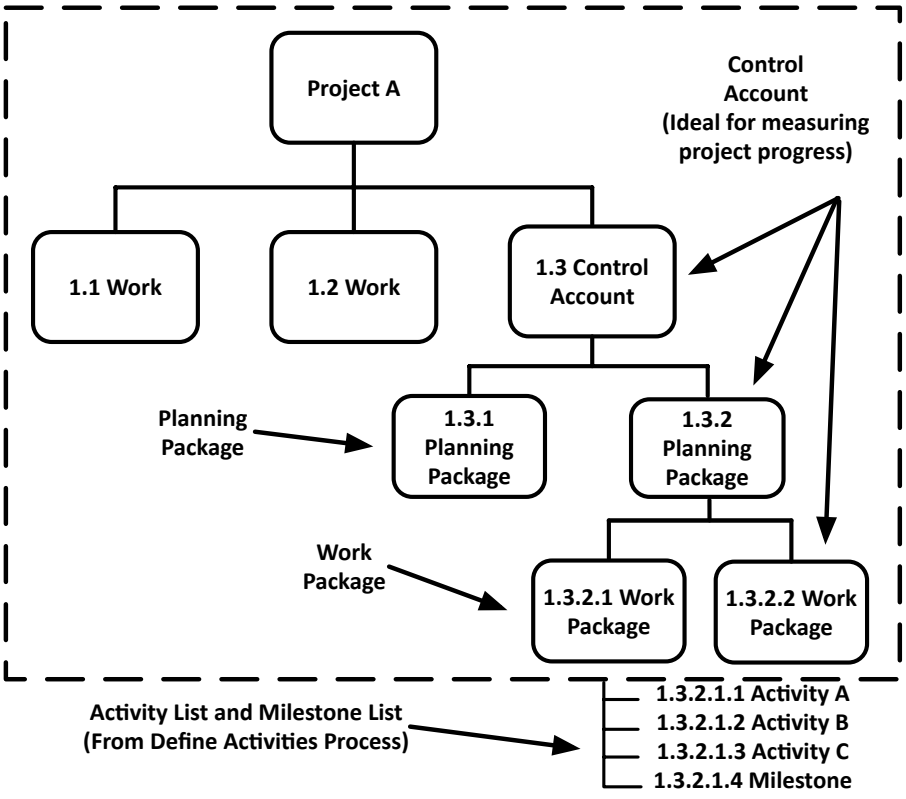

Figure 10-7: WBS Process Components

10.4.2. 100% Rule

The 100% rule states that 100% of the work of a project (or program) needs to be represented in the WBS. For example, if there are testing activities and/or administrative work associated with the project, the 100% rule would require **inclusion** of all testing and administrative work in the WBS. Failure to consider this will undoubtedly result in incorrect schedule, budget, and resource estimates, which will ultimately impact the budget and schedule.

10.4.3. WBS Numbering

Work breakdown structure numbering is applied to indicate where work fits in the project. The numbering system is often similar to that used in this manual. The high level control account is assigned a number comparable to a chapter number (e.g. 10.0), a control account at the planning package level is assigned a number comparable to a major element of the chapter (e.g. 10.1), and a control account at the work package level is assigned a number comparable to a subordinate element (e.g. 10.1.1).

10.4.4. WBS Dictionary

The WBS dictionary provides supporting detail that is typically not practical to apply to the graphical format of the WBS (work breakdown structure). It can include the following items:

WBS Dictionary Components		
Code of account identifier	Description of work	Responsible organization
List of scheduled milestones	Associated schedule activities	Resources required
Cost estimates	Quality requirements	Acceptance criteria
Technical references	Contract information	

It's not unexpected that some additional schedule, cost, and resource related planning processes (other than Create WBS) are started before the WBS dictionary can be completed.

10.4.5. Various Breakdown Structures

Know the project management breakdown structures.

There are numerous breakdown structures in project management. It's important that you know the differences.

The breakdown structures are:

- **Organizational breakdown structure (OBS)** - The OBS, also known as an organizational chart, shows how the project organization is structured to accomplish project activities (reference the Project Resource Management chapter)
- **Risk breakdown structure (RBS)** – The RBS depicts the risks that can potentially occur during the project, broken down by risk category (reference the Project Risk Management chapter)
- **Resource breakdown structure (RBS)** – The RBS depicts the type of resources used during the project (reference the Project Schedule Management chapter)
- **Bill of materials (BOM)** – The BOM includes the components, sub-assemblies, and assemblies used to build a product or service

The source for the above text is the Project Management Institute, *A Guide to the Project Management Body of Knowledge*, (*PMBOK® Guide*) – Sixth Edition, Project Management Institute Inc., 2017, Pages 156-162