

Introduction to the WBS

The Work Planning process is divided into three phases, viz. Work Breakdown Structure (WBS) Development, Time and Cost estimation, and Schedule development.

The Work Breakdown Structure (WBS) is a hierarchical description of all the work that must be done to meet the needs of the customer. While the three activities, viz. WBS development, time and cost estimation, and schedule development are listed in a certain order in the framework, a Project Manager who has gained some experience in the process may actually perform the three activities in a different order.

No particular software or tool is recommended for a project work plan. The Project Manager could use MS Project, MS Excel, or even a whiteboard (reserved for the project through the project life cycle).

Work Plan- Work Breakdown Structure—Activity Definition

Purpose:

The objective of this activity is to identify and organize the project into activities, sub-tasks, and work packages needed to achieve goals. This establishes the base for the Project Manager to estimate the duration of the project, determine the required resources and schedule the work. The Work Breakdown Structure (WBS) is a hierarchical description of all the work that must be done to meet the needs of the customer.

Participants:

The Project Manager develops the Work Breakdown Structure in consultation with the core project team.

Inputs:

Project Request Approval Form [1], Project Overview Statement [1], Quality Strategy [1], Project Approach [2], Business Case [4]

Process:

1. Two approaches can be used to identify project activities.
2. The first is the top-down approach.
 - a. Be clear about the goal in the Project Overview Statement.
 - b. Break down the goal into deliverables.
 - c. Identify activities that must be performed from the beginning to the completion of the project.
 - d. Break down the deliverables into activities.
 - e. Successively decompose work into smaller, more manageable components until you are satisfied that the work is defined at a sufficient level of detail to allow you to estimate time, cost and resource requirements. The purpose is to provide better management control.
3. Another approach to identify project activities is the bottom-up approach.
 - a. The entire planning team agrees to the first-level breakdown.
 - b. The team is divided into as many groups as there are first-level activities.
 - c. Each group then makes a list of the activities that need to be completed in order to complete the first-level activities.
 - d. Someone in the group identifies an activity and tells it to the group. If the group agrees, then the activity is written on a slip of paper and put in the middle of the table. The process repeats itself until no new ideas are forthcoming.
 - e. The group then sorts the slips into activities that seem to be related to one another. This helps the planning team add missing activities or remove redundant ones.
 - f. Once the team is satisfied it has completed the activity list for the first-level breakdown, the members are finished. Each group then reports to the entire planning team the results of its work. Final critiques are given, missing activities added, redundant activities removed.

4. Define for each task how the work will actually be organized and accomplished.
5. Check that all deliverables have been accounted for.
6. Account for reviewing tasks and documentation.
7. Verify to see if the lower-level items are both necessary and sufficient for completion of the decomposed items.
8. Verify to see if each item is clearly and completely defined.

Outputs:

Work Breakdown Structure

Work Plan—Work Breakdown Structure—Guidelines

1. The Work Breakdown Structure (WBS) is used to develop and confirm a common understanding of the scope of the project.
2. Each descending level represents an increasingly detailed description of the project deliverables.
3. Breaking down work into a hierarchy of activities, tasks, sub-tasks, and work packages is called *decomposition*. Decomposition involves subdividing the major project deliverables or sub-deliverables into smaller, more manageable components until the deliverables are defined in sufficient detail to support development of project activities.
4. The items at the lowest level of a branch may be referred to as work packages.
5. The top-down approach begins at the goal level and successively partitions work down to lower levels of definition until the participants are satisfied that the work has been sufficiently defined.
6. The bottom-up approach is more like a brainstorming session than an organized approach to building the WBS.
7. Check to see that all deliverables have been accounted for.
8. Ensure that testing and training is accounted for.
9. Ensure that documentation and review activities are planned. Ensure that product/service launch and implementation activities are planned. Ensure that delivery approval cycles are accounted for.
10. Include Project Management deliverables on the project as well e.g. delivery of the specifications document or preparation of test cases. Include any deliverables that must be met or delivered by the customer. Review the Communications document and the Project Approach for any deliverables that need to be included in the WBS.
11. A top-down approach or a bottom-up approach can be used in order to develop a Work Breakdown Structure. The top-down approach is recommended though.
12. The six criteria to test for completeness are:
 - a. Status/completion is measurable. If someone asks about the status of the task, and the task is defined properly, the question should be easily answered.
 - b. Start/end events are clearly defined. Once the start event has occurred, work can begin on the task and the deliverable is most likely the end event.
 - c. The activity has a deliverable. The deliverable is a visible sign that the task is complete.
 - d. Time/cost is easily estimated. This allows you to aggregate to higher levels and estimate the total project cost and the completion date.
 - e. Activity duration is within acceptable limits. There is no fixed rule for the duration of an activity.
 - f. Work assignments are independent. Once work has begun on the task, it can continue without interruption and without the need of additional input

or information until the task is complete. You can however choose to schedule it in parts because of resource availability.

13. The WBS activities at the lowest levels of granularity must always be expressed in verb form.
14. There are 3 general structures to the WBS:
 - a. Deliverables-based structures: The components of the WBS are the deliverables.
 - b. Task-based structures: This defines the deliverables in terms of the actions that must be done to produce the deliverable.
 - c. Organizational structures: This defines the deliverable of the project work in terms of the organizational units that will work on the project.
15. WBS templates of similar projects can be used effectively.