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Work Breakdown Structure
What It's for and How to Use It

By Mark Wilfer

Every project is regarded as a unique endeavor. Therefore, when a project is first chartered it is assumed the project team cannot immediately know all details of the work to be done. The Work Breakdown Structure (WBS) is the tool used to determine those details. The WBS is considered an essential part of project planning because it serves as a framework for discovery, exploring the full extent of work to be conducted. Understanding the role of the WBS and how to use it effectively can make a substantial difference in the project team's ability to successfully manage the project.

The WBS is aptly named; it is truly a structural breakdown of work. More specifically, the breakdown is in terms of the project's *deliverables*—that is, the nouns, or things, that need to be produced, compiled, designed, built, created, or otherwise made ready. The WBS is hierarchical in nature, with the very top showing the highest level deliverable: the product, service, or result that serves as the project purpose. The next level of the WBS represents the highest-level component deliverables necessary to complete the overall purpose. These are often identified in, and carried over directly from, the scope statement. Through experience, inquiry, and expert judgment, the Project Manager and project team determine all subsequent deliverables that comprise each of the major deliverables.

The process of *decomposition*—breaking down the higher level deliverables into lower level deliverables—continues until an adequate level of detail is reached. Knowing when to stop can sometimes be a challenge. Too little detail results in deliverables too large to estimate and control effectively. Too much detail creates excessive complexity and unnecessary paperwork. Decomposing deliverables just to the point where details become apparent makes the approach completely scalable and applicable to any size project. The only difference between a complex project and a simple one is the number of levels to the WBS.

Regardless of how many levels deep a particular branch of the WBS may be decomposed to, component deliverables at the lowest level of each branch are always referred to as *work packages*. Since a work package is still a deliverable, it can be thought of as a special type of deliverable where the 'bundle of work' to complete it can be readily identified and managed. Precisely for that reason, rather than being further subdivided into smaller deliverables, work packages are divided into *activities*. This is a crucial point. Activities are the verbs—the actions or tasks

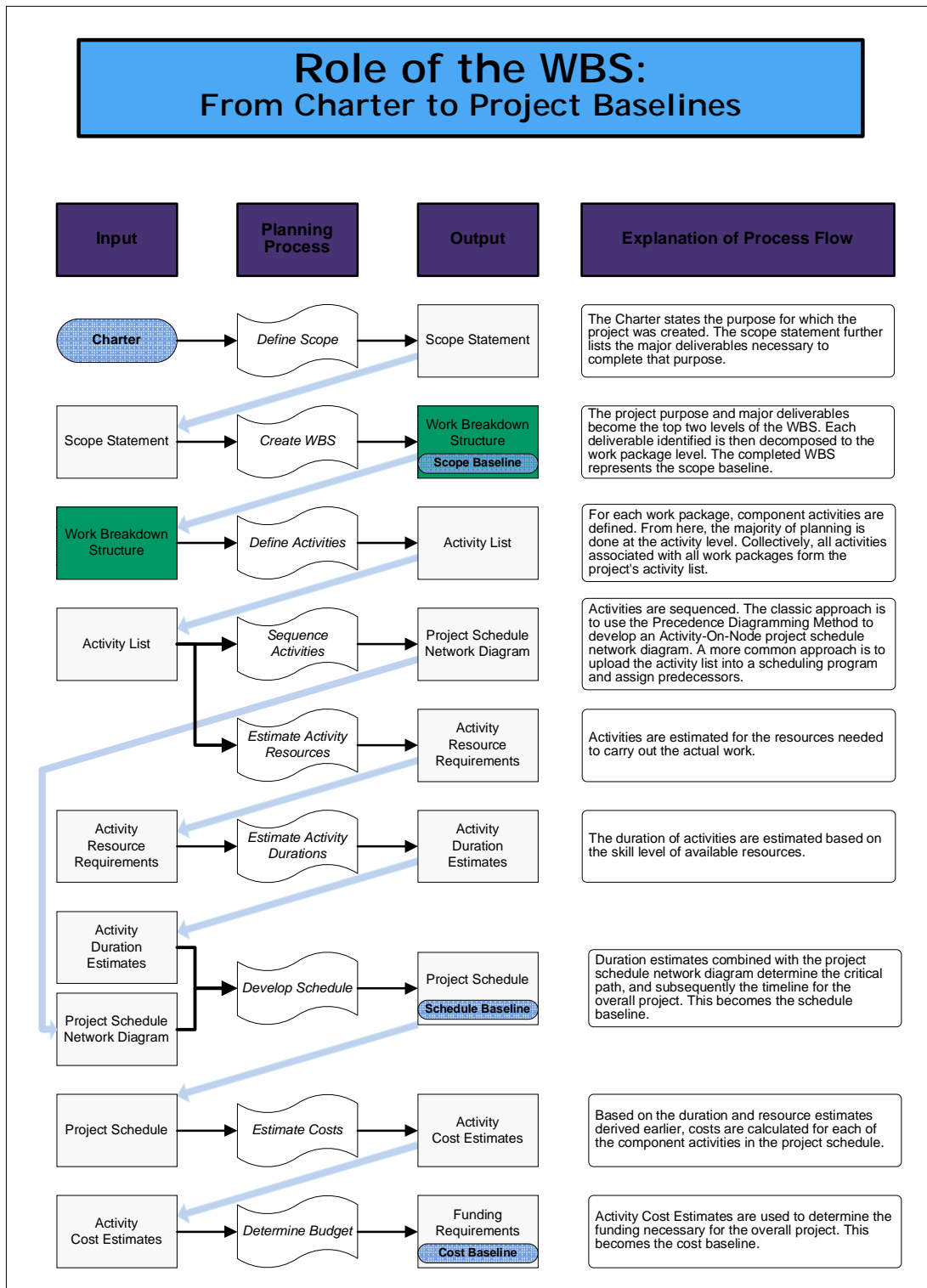
that must be carried out to move the project toward completion. Collectively, the activities associated with a work package must comprise 100% of the work necessary to complete that work package. When all activities have been identified for all work packages, the result is an *activity list*, which represents the work required to complete the entire project.

By definition, each activity must be easily estimated for the resources it requires, the time it will take to finish, and its associated cost. When these details are developed for every activity in the activity list, the overall project timeline and budget become self-evident. These critical details at the activity level not only form the basic elements of project planning, but also serve as the standards against which progress and success are measured.

There is no one right WBS solution for any project. Different project teams may come up with different work breakdown structures based on their individual perspectives, styles, and experience. For instance, a WBS to build a car might show the exhaust system either as part of the engine or as an independent deliverable at the same level as the engine. Either is acceptable and is simply the result of how the project team chooses to define the 'engine' deliverable. The important point is that no matter how different competing drafts of a WBS may look, the final activity list will be essentially the same, because moving or redefining a deliverable doesn't change the scope of work. The WBS simply serves as a framework for capturing the scope at a more detailed level.

The attached figure illustrates how the WBS stands at the heart of planning, taking the project team from charter and scope statement to a detailed scope baseline. This in turn sets the stage for determining the activity list, which ultimately leads to the schedule and cost baselines.

The work breakdown structure is an indispensable tool for project planning. It provides a methodical top-down approach for defining the project boundaries, outlining precisely what work needs to be done by identifying gaps and filling in the details long before work is carried out. With all deliverables clearly identified and decomposed to a manageable level, the WBS paves the way for development of the activity list—and the all-important granular level detail derived from it—to plan, execute, and control the project. Leveraging the value of the WBS, instead of just documenting it for the sake of documentation, leads to a more solid command of what the project entails and establishes a solid foundation upon which to build success.



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