To Prepare A Work Break Down Structure For Construction Of Industrial Complex And To Do It Scheduling With Respect To Labor And Calendar

[1]Virendra Kumar, [2]Imran Khan, [3]Akram Hossain, [4]Harsimranjit Singh

[1, 2, 3] B.Tech, School of Civil Engineering, Lovely Professional University, Punjab

[4]Assistant Professor, School of Civil Engineering, Lovely Professional University, Punjab

Abstract

For a project to be properly managed, there is a need to generate its work-breakdown structure (WBS), and to define work packages so that they can be correctly assigned to organizational units. The WBS may be considered the taxonomy of a project. Several possible patterns of WBS can be generated, despite the fact that all of them describe the same project. However, different WBS patterns call for different organizational structures and management styles during project implementation. Thus, the WBS designer already has a significant impact on the way that a project is to be managed at the very early stage of proposal submission, sometimes without being aware of it. A mismatch between the project WBS, the organizational structure, and the management style of the project manager has a negative impact on the likelihood of the project being completed successfully. Chaos results if the various parties to the project each produce a different WBS. The paper discusses the above issues, and presents an analysis of the different options for a WBS for an example project, and the possible impact of the options on the preferred organizational structure and management style. Well defined software scope eases the process of scope verification and contributes to project success. Furthermore, a deliverable-oriented WBS provides a road map to a well-defined software scope of work. It is on the basis of this that this paper extends the use of deliverable-oriented WBS to that of scope verification process. This paper argues that a deliverable-oriented WBS is a tool for software scope verification.

Keywords

Work-breakdown structure, management style, organizational structure Software project, User requirements, Inspection

Introduction

A Work Breakdown Structure (WBS) is a management tool that helps you to identify the top-level project deliverables and to systematically decompose the deliverables in tasks and activities. This tool helps you to manage and organize all building adaptation project activities. Furthermore, a WBS is often used as a basis on federal projects. The PERT Coordinating Group' defines a WBS as a family-tree subdivision of a program that begins with the end objectives, and subdivides these objectives into successive smaller end-item subdivisions.

The WBS establishes the framework for defining the work to be accomplished, constructing a network plan, summarizing the cost and schedule status of a program for progressively higher levels of management. The smallest element in the WBS is called a 'work package', and it is defined by the PERT Coordinating Group' as the work required to complete a specific job or process, such as a report, design, documentation requirement or portion thereof, piece of hardware, or service. A work package may consist of one or more cost significant activities. Its content may be limited to the work which can be performed by a single operating unit in an organization, or it may require the contributing services of several operating units. The overall responsibility for the work content of a work package should be assigned to a single organization or responsible individual. In other words, the proper planning and execution of a project requires the assignment of each work package to a specific organizational unit. Other definitions of WBS government documents can be to plan, estimate and control a project.

Objective

The work breakdown structure has a number of benefits in addition to defining and organizing the project work. A project budget can be allocated to the top levels of the work breakdown structure, and department budgets can be quickly calculated based on the each project's work breakdown structure. By allocating time and cost estimates to specific sections of the work breakdown structure, a project schedule and budget can be quickly developed. As the project executes, specific sections of the work breakdown structure can be tracked to identify project cost performance and identify issues and problem areas in the project organization. For more information Project work breakdown structures can also be used to identify potential risks in a given project. If a work breakdown structure has a branch that is not well defined then it represents a scope definition risk. These risks should be tracked in a project log and reviewed as the project executes. By integrating the work breakdown structure with an organization breakdown structure, the project manager can also identify communication points and formulate a communication plan across the project organization.

Project work breakdown structures can also be used to identify potential risks in a given project. If a work breakdown structure has a branch that is not well defined then it represents a scope definition risk. These risks should be tracked in a project log and reviewed as the project executes. By integrating the work breakdown structure with an organization breakdown structure, the project manager can also identify communication points and formulate a communication plan across the project organization. When a project is falling behind, referring the work breakdown structure will quickly identify the major deliverables impacted by a failing work package or late sub- deliverable. The work breakdown structure can also be color coded to represent sub- deliverable status. Assigning colors of red for late, yellow for at risk, green for on-target, and blue for completed deliverables is an effective way to produce a heat-map of project progress and draw management's attention to key areas of the work breakdown structure. In this article we are going to look at what many project managers and project management professionals refer to as the "foundation" of the project, or at least the foundation of project planning. The Work Breakdown Structure (WBS) is defined by A Guide to the Project Management Body of Knowledge 3rd Edition (PMBOK Guide) as: 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.
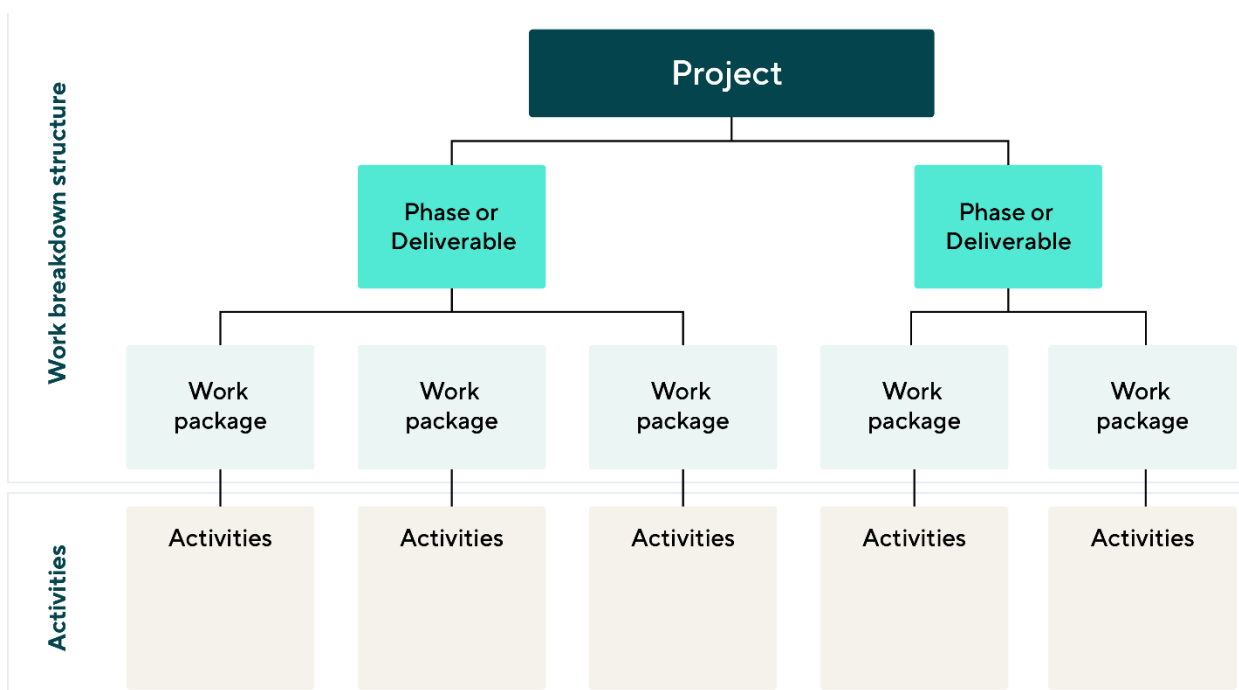
Figure: 1 flow chart of work breakdown structure

Purpose of WBS

Let's take a look at what purpose the WBS serves to our project and our project team. There are two reasons to use a WBS in your projects. The first is that is helps more accurately and specifically define and organize the scope of the total project. The most common way this is done is by using a hierarchical tree structure. Each level of this structure breaks the project deliverables or objectives down to more specific and measurable chunks. The reason for using a WBS in your projects is to help with assigning responsibilities, resource allocation, monitoring the project, and controlling the project. The WBS makes the deliverables more precise and concrete so that the project team knows exactly what has to be accomplished within each deliverable. This also allows for better estimating of cost, risk, and time because you can work from the smaller tasks back up to the level of the entire project. Finally, it allows you double check all the deliverables' specifics with the stakeholders and make sure there is nothing missing or overlapping. The main purpose of Work Breakdown Structure is that firstly, it helps to define and organize the scope of the total project more accurately and specifically. The most common way this is done is by using a hierarchical tree structure. Each level of this structure breaks the project deliverables or objectives down to more specific and measurable chunks.

The second reason for using a Work Breakdown Structure in your projects is to help with assigning responsibilities, resource allocation, monitoring the project, and controlling the project. The WBS makes the deliverables more precise and concrete so that the project team knows exactly what has to be accomplished within each deliverable. This also allows for better estimating of cost, risk, and time because you can work from the smaller tasks back up to the level of the entire project. Finally, it allows you double check all the deliverables' specifics with the stakeholders and make sure there is nothing missing or overlapping. Besides, using the tree structure, you may also use Mind Mapping methodology, if you are familiar with it.

Scheduling with respect to labour and calendar

All	Task name	Duration	Start Date	End Date	Assigned
1	Ideation	3 days	24-03-2022	27-03-2022	
2	Market Research	1 day			Suresh
3	Product requirement	2 days			Ramesh
4	Design	10 days	27-03-2022	06-04-2022	
5	Drawings	4 days			Ram
6	3D Rendering	2 days			Jay
7	3D Prototype	4 days			John
8	Prototyping	11 days	06-04-2022	17-04-2022	
9	CNC past creation	6 days			Roy
10	Product assembly	5 days			Manveer
11	Pre Production	12 days	17-04-2022	29-04-2022	
12	Equipments	3 days			Raj
13	Supply Chain	4 days			Priya
14	Documents	3 days			Priti
15	Production Operation	2 days			Kishore

Conclusions

The work-breakdown structure is the backbone of the proper planning, execution and control of a project, although it is not as well known as CPM or PERT. The three typical items required to drive the project to successful completion, namely scope, schedule and cost, are greatly enhanced by the ability of the project manager and his/her team to define accurately a WBS and all the related aspects. There is not one unique construct of a WBS for a project. Therefore, its final design should be the result of a group effort of professionals from different functions and responsibilities. If a WBS format for a particular project is not accepted as valid by all the parties involved, parties may develop their own WBSs. If the various WBS structures used are not strictly derived from one basic structure, it will obviously bring chaos to the project. Surprisingly, the literature does not attach sufficient importance to the WBS. Several professional publications refer to the activity-network analysis of a project without mentioning that it is almost impossible to generate a proper activity network and estimate the cost, resources and budget of each activity without establishing the WBS of the project. This paper has shed some light on the impact of the WBS. There is, however, a need for additional studies of the impact of various WBSs on project performance in different environments and industries. At the risk of sounding melodramatic, the efficiency of a project's Work Breakdown Structure can determine that project's success. The WBS provides the foundation for project planning, cost estimation, scheduling and resource allocation, not to mention risk management.

Reference

1. Shlomo Globerson
     i. School of Business Administration, Tel Aviv University, Tel Aviv 69978, Israel
2. Robert T. Hans
     i. Software Engineering Department, Tshwane University of Technology, Pretoria, South Africa hansr@tut.ac.za
3. Work breakdown structure for defense material items' STL%881A (25 Avr 1975)
4. Performance m~surement system guidelines' Attachment Department of Energy, USA (1977) pp   1-4
5. PROJECT MANAGEMENT PRACTICES Work Breakdown Structure (Rev E, June 2003)
6. Creating WBS : Copyright © 2000 Artemis Management Systems