Resource Scheduling

Objective

- Discuss the structured approaches, work breakdown structure (WBS), and resource breakdown structure (RBS) to resource allocation and management

Introduction

Effective resource scheduling is a cornerstone of successful project management. It ensures that the right resources–whether human, equipment, material, or financial–are available at the right time to achieve project objectives. Without a robust scheduling mechanism, delays, cost overruns, and inefficiencies are inevitable. For functional managers who oversee specific departments or teams, a well-defined resource calendar is crucial. They often resist assigning resources for the entire project duration or for long, undefined periods, emphasizing the need for precise scheduling tools and timelines. To address these challenges, project managers must adopt structured approaches to resource allocation and management, utilizing tools such as the **work breakdown structure (WBS)** and the **resource breakdown structure (RBS)**.

Work breakdown structure (WBS)

The WBS is a hierarchical decomposition of the total scope of work to accomplish the project objectives. It organizes the project into manageable work packages, each with a clear deliverable, making it easier to plan, assign, and track progress. Each work package is assigned a distinct Code of Account Identifier.

Resource breakdown structure (RBS)

The RBS complements the WBS by categorizing the resources (for example, labor, materials, and equipment) needed for each work package. It provides a detailed inventory of the required resources, making it easier to manage availability, costs, and dependencies.

Combining WBS and RBS for resource scheduling

Integrating the WBS and RBS ensures effective resource scheduling. The WBS defines what needs to be done, while the RBS details who or what is needed to do it. When combined, they allow for:

- Precise mapping of resources to specific work packages.
- Identification of resource shortages or overlaps.
- Accurate scheduling of resource start and end dates.

- Clear cost estimation tied to resource utilization.

RBS table for resource scheduling

An RBS table integrates information from both the WBS and RBS to enable effective scheduling. Below is an example structure:

WBS Code of Account Identifier	Work package description	Resources required	Start date	End date	Direct costs
1.1	Market Analysis	Analyst, Tools	20XX-12-10	20XX-12-20	$5,000
1.2	Design Prototype	Designer, Software	20XX-12-15	20XX-01-10	$8,000
1.3	Develop App	Developer, Tester	20XX-01-15	20XX-03-30	$20,000
1.4	Launch	Marketing Team	20XX-04-05	20XX-04-15	$10,000

This table clearly visualizes which resources are needed, when, and at what cost, enabling smooth coordination between project managers and functional managers.

Summary

Resource scheduling is a critical process that ensures resources are allocated effectively to meet project objectives while adhering to time and cost constraints. By integrating the work breakdown structure (WBS) and resource breakdown structure (RBS), project managers can create a robust resource schedule that aligns with the expectations of functional managers and other stakeholders. The use of tools like the RBS table facilitates clear communication, resource optimization, and improved project outcomes.