Planning the Project & Work Breakdown

Overview

Project Planning

- Building a Project Plan
  - Related to overall unit plan
- The first steps in building the plan

- Work Breakdown Structure (WBS)
  - What is a WBS, types of WBS
  - Application of WBS is project planning

- Assignment 1
  - Section choices to be finalised
  - Work on goals and WBS

Discussion

- Why is Project Planning important?
- What is involved in Project Planning? What would be the outputs?

- Discuss with person next to you
- Share after 3 minutes

How are projects managed?

- planning
- organising
- leading
- controlling

Project Planning

- Decide in advance:
  - what the project aims to achieve – and **why!** (***purpose*** *and goals*)
  - what to do to achieve the goals (*work breakdown*)
  - with what to do it (*resources required*)
  - how much effort is required (*effort estimation*)
  - when to do it (*schedule*)

Project Planning Steps

- Define the project
  - includes defining scope / limitations
  - Normally done in Project Charter, expanded/refined in planning
- Do a work breakdown
- Estimate the effort required, prepare budgets, and allocate resources to the activities
- Schedule the activities and the use of resources
- Document the project plan *
  - project definition, chosen course of action, policy decisions, work breakdown, budget, schedule, monitoring plans, communication plans, contingency plans

Importance of Documentation (recap)

- Provides clear reference point
  - Ideally should be unambiguous
- Don't depend on human memory / perceptions
  - Avoids *"He said.., she said.."* situations
  - Even if personnel change, documents will remain
- Aim is to get all stakeholders on the same page
- Key documents should also have relevant stakeholder sign-off
- Provides traceability
  - what has been done, who has done it, and when it has been done
- Avoids conflict and misunderstanding down the track

Building a Project Plan

- Validate project definition
- Determine what needs to be done
  - Deliverables, WBS
- Determine acceptance criteria (for each deliverable)
- Determine resource needs
  - People, facilities, tools
- Acquire resources
- Estimate the work
- Develop the schedule
- Determine project costs and budget
- Determine the project control system
  - How performance will be measured, how often and how it will be reported

Building a Project Plan *(cont.)*

- Update roles and responsibilities
  - Project role responsibility chart
  - Responsibility matrix
- Plan for change
- Plan for project information
- Plan for issues
- Plan for risks
- Plan for quality
- Plan for communications
- Plan for team management
- Plan for procurements

Key Project Planning Principles

- **Purpose** is to develop a plan that allows the project to be executed and controlled
- Multiple passes required – it is an ***iterative process***
- Project Plan has many elements to it
  - Not just a timeline or WBS or MS-Project file
- Effective planning enables a proactive project management approach
- Project planning is the time for questions, facilitation, interaction and feedback
  - Should not be a 'top-of-the-mountain' / ivory tower approach

Building a Project Plan

- **Validate project definition**
- Determine what needs to be done *(more later today)*
  - Deliverables, WBS
- **Determine acceptance criteria (for each deliverable)**
- Determine resource needs
  - People, facilities, tools
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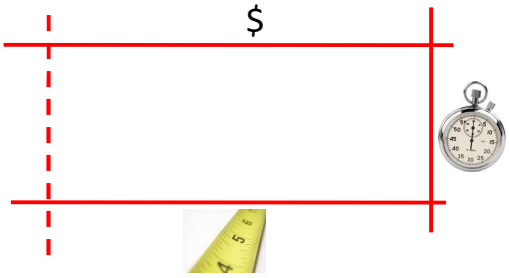
Defining the Project

- Requirements / scope of work / goals
  - includes how to measure
  - performance targets

- Also define boundaries and limitations
  - Results
  - Time frames
  - Resources
    - Personnel
    - $$$
    - Equipment
    - Space



Defining Goals / Acceptance Criteria

- Be clear about in defining goals and acceptance criteria
  - "The project needs to be finished as soon as possible" X *Vague*
  - "The project needs to be completed by 5pm on 30th June 2018" ✓ *Specific*

Setting Goals – SMART goals - recap

- S — **Specific:** State exactly what you want to accomplish (Who, What, Where, Why)
- M — **Measurable:** How will you demonstrate and evaluate the extent to which the goal has been met?
- A — **Achievable:** stretch and challenging goals within ability to achieve outcome. What is the action-oriented verb?
- R — **Relevant:** How does the goal tie into your key responsibilities? How is it aligned to objectives?
- T — **Time-bound:** Set 1 or more target dates, the "by when" to guide your goal to successful and timely completion (include deadlines, dates and frequency)

Building a Project Plan

- Validate project definition
- Determine what needs to be done *(more later today)*
  - Deliverables, WBS
- Determine acceptance criteria (for each deliverable)
- **Determine resource needs**
  - People, facilities, tools
- Acquire resources
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Determining Resource Needs

- Determine the type and quantity of resources needed
  - People (roles)
  - Facilities
  - Tools / equipment
- Based on tasks and activities that need to be performed
- Timing (when needed) should be noted
- For people
  - Role description
  - Prerequisite skills
  - Skill levels
  - Experience

Role	Team Member	Training Needs	Projected Start Date	Projected Roll-off Date	Percent Allocation
Technical Leader	B Gates	• Advanced Enterprise Web Development	6/1/2007	10/30/2007	80%
Business Process Leader	S Jones	• Process Modeling • Power PowerPoint User	6/1/2007	10/30/2007	100%
Lead Developer	L Gregory	• Advanced Enterprise Web Development	6/15/2007	10/30/2007	100%
Lead Analyst	E Michael	• Rational Test Studio	6/1/2007	10/30/2007	100%
Test Manager	Q Victoria	• Advanced Load Testing	6/15/2007	10/30/2007	100%
Developer	R Alexander	• Accelerated OO Development	7/15/2007	9/30/2007	100%

Figure 5.2 Basic resource management plan (Horine, 2017)

Responsibility Chart

Project Role	Project Responsibilities	Assigned Team Member
Project Sponsor	• Responsible for championing the project and communicating all aspects of the project to other senior management stakeholders. • Has ultimate authority over and is responsible for the project and/or the program. • Approve changes to the scope and provide the applicable funds for those changes.	T. Terrific
Project Manager	• Provide direction and oversight to the initiative • Work with stakeholders to ensure that expectations are met • Develop and manage project plan • Design and execution of a project communications plan • Measure, evaluate, and report progress against the project plan • Provide project status reports • Coordinate and manage activities of project personnel • Resolve project issues • Conduct scheduled project status meetings • Establish documentation and procedural standards for the project • Perform quality review of deliverable documents • Maintain project communication with the Client Project Manager • Review and administer Project Change Control Procedures.	M. Yost
Technical Leader	• Provide technical leadership on the design of application architecture • Lead resolution of any application development issues • Facilitate technical design sessions • Provide quality assurance to technical deliverables	B. Gates
Quality Assurance Manager	• Provide quality assurance to the overall project processes, procedures, and deliverables. • Work with Project Leadership to ensure project expectations are met	N. Reed
Business Process Leaders	• Provide business competence to the project team • Participate in information gathering sessions • Provide pertinent strategic business documentation and information • Assist in the identification of business critical processes • Validate viability of recommendations • Serve as primary user acceptance testers	S. Jones G. Griffey

Figure 5.4 A partial role responsibility chart for a software project (Horine, 2017)

Responsibility Matrix

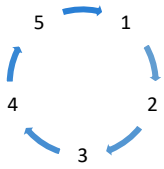
- For each significant work package listed in the WBS
  - WBS covered later today
- Maps responsibility level each role has for that item
- RASIC responsibility matrix
  - R = responsible
  - A = approve
  - S = support
  - C = consulted
  - I = informed

Role	Team Member	Approved Budget	Current State Process Flow	Requirements Document	Change Impact Analysis	Configuration Mgmt Plan	Disaster Recovery Strategy	Deployment Plan	Project Plan	QA Plan	Risk Response Plan	Future State Process Flow	Test Cases	Test Plan	Training Plan	System Design Document
Project Sponsor	T Terrific	A	I		A			A	A	A	A	A	I	I	A	I
Project Manager	M Yost	R	C		R	R		S	R	A	R	C	C	A	C	A
Technical Leader	B Gates	S	C	A	C	I	R	S	A	A	A	C	C	C	C	A
Business Process Leader	S Jones	C	A		A	C		A	A	A	A	A	A	A	R	A
Lead Developer	L Gregory		C	C		S			C	C	C	I	C		I	R
Lead Analyst	E Michael		R	R	C	I		R	A	C	C	R	S	S	S	S
QA Manager	N Reed	I	I	I	C	I		C	A	R	C	I	A	A	A	I
Test Manager	Q Victoria		I	I		I		R	A	C	C	R	R	R	C	C
Developer	R Alexander		I	I		S		I	C	I	C	I	C		C	S

Legend: R=Responsible; A=Approve; S=Support; C=Consulted; I=Informed

Iterative Process

- Project planning is not a 'straight line process'
- Will need to go through a number of iterations



- There will be lots of interdependencies
- Each pass will refine and improve clarity and detail

Teams

- Teams were formed last week
- All students to sit with their teams

- Those not in a team need to see instructor now to be assigned a team

Assignment selection

- Each person needs to give sub-project choice
  - Site & Décor
  - Wedding ceremony
  - Catering
  - Entertainment
  - *Invitations and other pre-ceremony tasks*
  - *Accommodation and transport for 10 out-of-town guests*
- To be recorded
- Changes need to be approved by project sponsor *(lecturer)*

Questions on Assignment

- Any clarifications required?

What is a Work Breakdown Structure (WBS)?

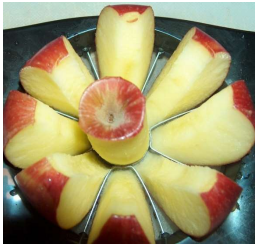
- Deliverable-oriented hierarchical decomposition of the work to be executed by the project team to accomplish the project objectives and create the required deliverables. It organises and defines the total scope of the project."

PMBOK Guide

  - *Deliverables*: what will be provided at the end of the project (goods or services)
  - *Hierarchical*: arranged in order of 'rank'
  - *Decomposition*: logical breakdown
  - *Scope*: the work required to output a project's deliverable(s)

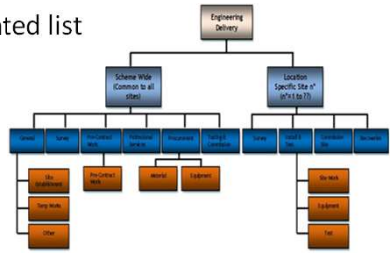
Why do you need a Work Breakdown Structure?

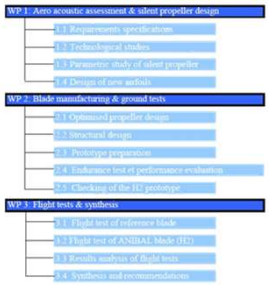
- Never try to plan a major project all at once
  - Too daunting and difficult
  - Choke!
- Need to break it down to more manageable parts



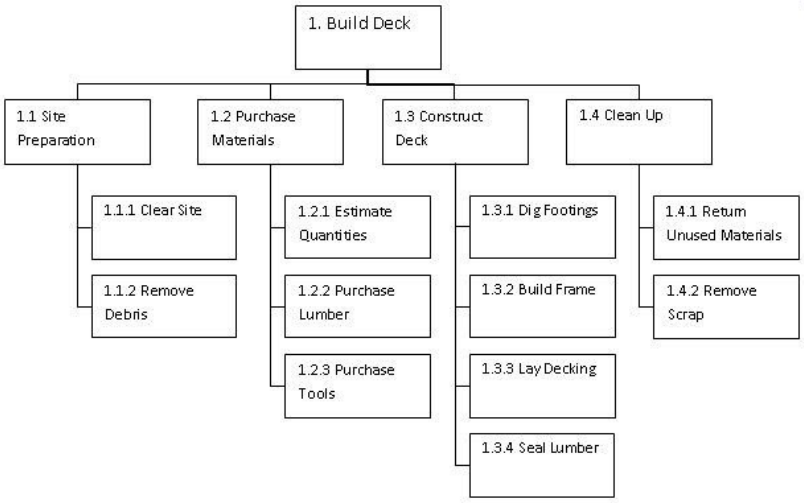
Work Breakdown

- WBS is a key project deliverable that organizes the team's work into manageable sections
  - to ensure various aspects of project are considered from the start
- Two main methods of representing a WBS
  - Tree-structured graph
  - Outline / Indented list





Example of a simple WBS



Types of WBS

Process WBS

- picture of **activities** for project

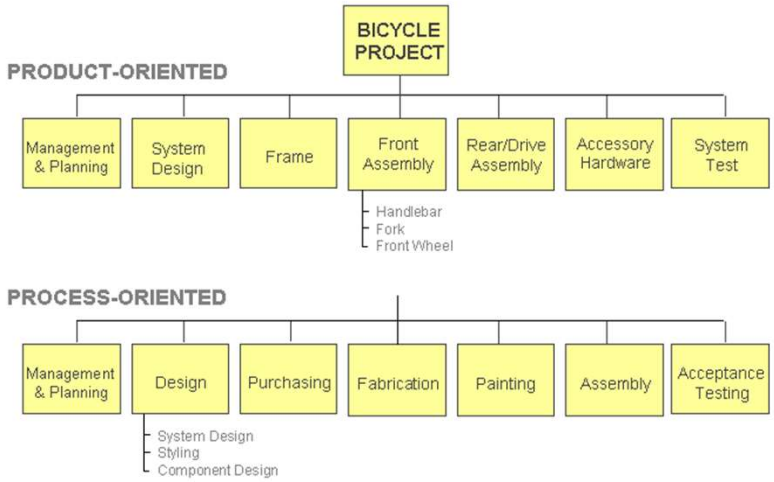
Product WBS

- picture of the **components and interfaces** of product

Hybrid WBS

- includes both process and product elements

Product vs Process WBS



Hybrid WBS

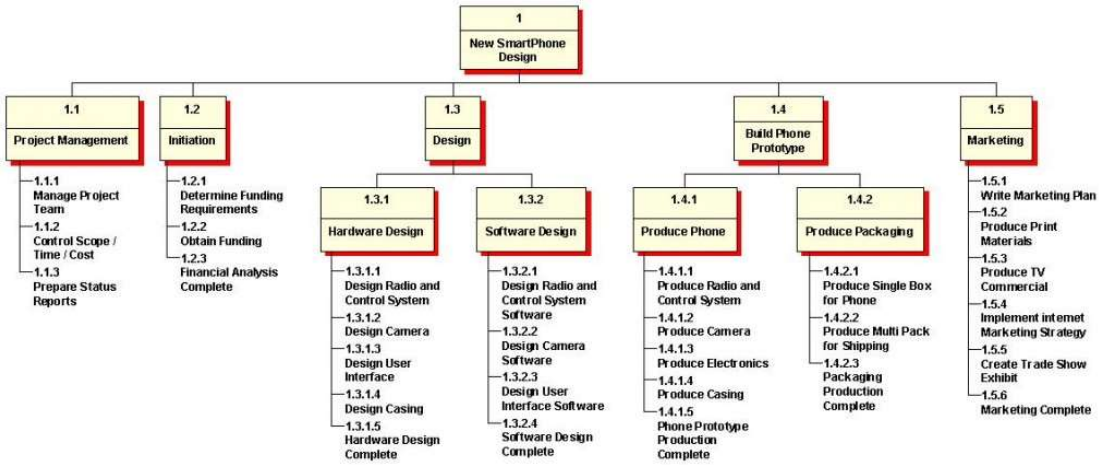


Image courtesy ePM Training

Purpose of WBS

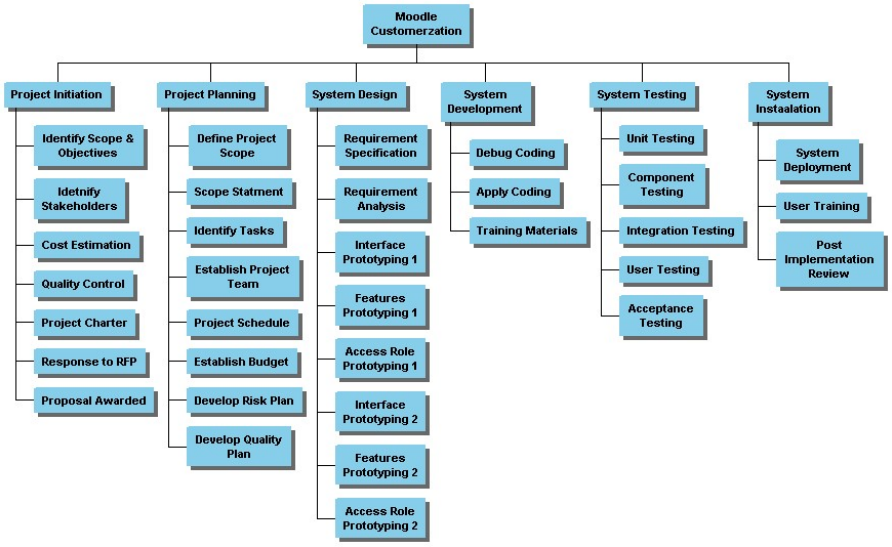
Guidelines for effective WBS

- *All* the work of the project is included in the WBS
- The WBS should be deliverable focused
- All deliverables are explicit in the WBS
- Should be developed with the team
- Is refined as the project progresses
- Lowest level is the work package or activity level
  - level where effort and cost can be reliably estimated
- Each element has only one parent
- Child elements added together completely cover the parent *(100% rule)*
- Unique identifiers are assigned to each item in WBS for better reporting
- Should include project management tasks and activities

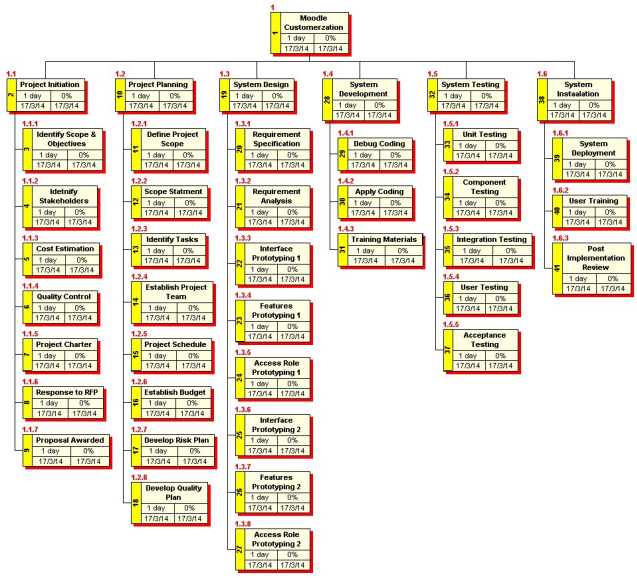
When to keep breaking down

- Further decomposition required if:
  - More then one individual or group is responsible
  - More than one deliverable is included
  - More than one work process is included
  - There is time gap involved
  - Resource requirements for the work element are not consistent
  - There are specific risks associated with a smaller portion of the work element

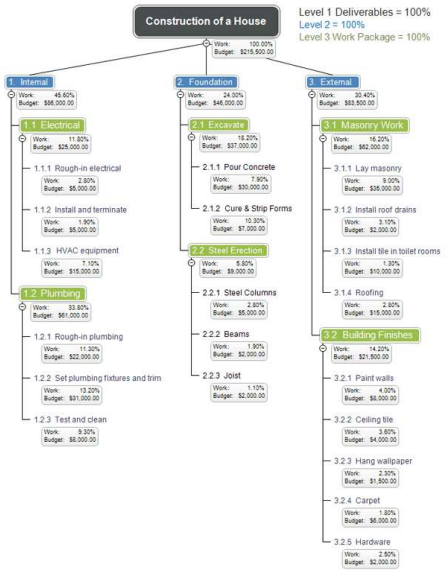
Example WBS



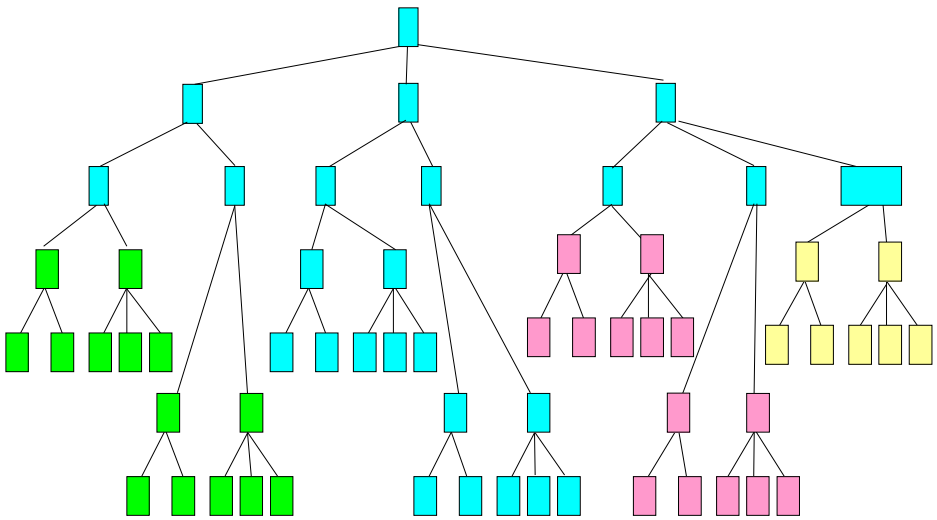
Example WBS with ID and time added



Example WBS with effort and budget



WBS – Rolling Wave Method



Video: How to Baseline a Project Scope

- www.youtube.com/watch?v=64bHiW6K77c

Questions?