Time Management

Part 2 – Work Breakdown Structure (WBS) Review

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WBS Planning Process

- PMBOK – “WBS is deliverable-oriented grouping of components that organizes and defines the total scope of the project.”

Level 1 – Project
   Level 2 – Major Deliverables (Project Life Cycle)
      Level 3 – Major Components
         Level 4 – Subcomponents
            Level 5 – Work Packages

- Proceed until detailed activities are so well understood that there is no reason to continue the WBS
- Each element should include a description (dictionary)
Parent – Child & WBS 100% Rule

The "100% rule" is the most important criterion in developing a WBS and in evaluating the decomposition logic.

The next level decomposition of a WBS element (child level) must represent 100% of the work applicable to the next higher (parent) element.

Source: https://acc.dau.mil/CommunityBrowser.aspx?id=37520
Guidelines for Creating WBS

- Deliverable oriented
- Utilizes input from team
- Complete 1st level before further decomposition (project life cycle)
- Some levels decomposed further than others
- Work not in WBS is not in project
Graphical WBS e.g. #1

Level 1

Build Walgreens

Level 2

1.0 Mobilization
2.0 Site Layout
3.0 Foundations

Level 3

1.1 Site Utilities
1.2. Fence Site

Level 4

1.1.1 Mark Utilities
1.2.1 Install Temp Electricity

Best to do initial WBS planning with sticky notes!
Graphical WBS e.g. #2

Army Curriculum Project

WBS Level

1

2

3

4

5

PMBP Curriculum Project

Phase 1
Current Courses

Phase 2
Future Courses

Intro and Course 1
Why PMBP

Course 2
Teams & Me

Course 3
Public Service & Me

Course 4
The Organization, Teams & Me

Course 5
Quality & the Project Delivery Team

Course 6
Working in the PDT

Course 7
Success, the PDT, & Me

Course 8
Your Call to Action

Course 9
BRP2 Training

Design

Development

Delivery

Draft Design Document
Review Comments
Revised Design Document
Acceptance Document

Draft Scripts & Content
Review Comments
Revised Draft Scripts & Content
Acceptance Document

Delivered CD-ROM/Promoted Web Modules

Delivered CD-ROM/Promoted Web Modules
Review Comments
Revised Video & Web Modules
Acceptance Document
Graphical WBS e.g. #3

- Mountain Bike
  - Wheel Systems
    - Hubs
    - Rims & Spokes
  - Gearing Systems
    - Gears & Chains
    - Derailleurs & Shifters
  - Frame Systems
    - Fork System
    - Bearing Systems
    - Tubing Structure
  - Seat Systems
    - Frame Structure
    - Joining Systems
    - Tubing
  - Brake Systems
    - Cover & Padding
    - Seat Structure
    - Calipers
    - Levers & Cables
Value of Graphical WBS

- Clear understanding of project activities
- Allows team to walk through project
- Helps visualize work
- Enables team and stakeholder buy-in
- Displays hierarchy
Outline WBS Format

1. Build Wal-Mart
   1.1. Mobilization
      1.1.1. Install Site Utilities
         1.1.1.1. Call JULIE & Mark Existing Utilities
         1.1.1.2. Erect Power Pole
         1.1.1.3. Install Temp Electricity
      1.1.2. Fence Site
   1.2. Site Layout
   1.3. Foundation

*Not recommended by PMBOK*
Work Package

- Lowest level of WBS
- Develop detail w/ team member doing the work
- Rule of thumb – 8 to 80 hours
- Description to include:
  - Agreed upon time commitment
  - Work and duration estimates
  - Input and output deliverables
  - Required documentation
  - Risk assessment
WBS Task Description (Dictionary)

- Project Name ________  Task No. _______
- Person Assigned ________  Date Issued _______

- Task Description - What work has been authorized?
- What are the measurable objectives? - What will be measured?

- Product/Service Description - What is the end result of the work packet or activity?
- Acceptance Criteria - How can the team check their work?
- Deliverables - What are the finished products?
- Assumptions

- Resources Required

- Task/Activity Duration

- Allocated Cost

- Completion Date

- Predecessor Task No._________  Successor Task No. ____________

- Approved by:
- Project Manager ___________________  Date: ____________________

*Adapted from Rita Mulcahy PMP Exam Prep (2002)*
Methods of Developing WBS

- **Top-Down Approach**
  - Begins at goal level
  - Successively decomposes work to lowest definable levels

- **Bottom-Up Approach**
  - Begins at activity level
  - Brainstorm tasks under each activity
  - More risky!
Creating a Top Down WBS

1. Identify the project
2. Determine high-level milestones (deliverables/products/hardware)
3. Decompose milestones to detailed tasks
4. Order task under each milestone
5. Repeat/review/revise until appropriate level of detail reached
6. Create task descriptions for each work package
Creating a Bottom Up WBS

1. Especially useful if deliverable is a service.
2. Brainstorm all project activities
3. Grouped into logical work packages or lower level WBS elements.
4. Summarize into higher level elements.
5. Asked at each level if sum of child elements equal 100% of effort summarized in each parent
6. Several iterations typically need for sound WBS
Benefits of WBS

- Breaks project into manageable parts for estimating time and cost
- Demonstrates basis for staffing, time & cost
- Prevent work slipping thru cracks
- Facilitates communication among stakeholders
- Minimizes change
- When developed by team, creates buy-in
- Helps team members understand their roles
The WBS can BEST be thought of as an effective aid for ____________ communication.

a. Team  

b. Project Manager  

c. Customer  

d. Stakeholder
The WBS can BEST be thought of as an effective aid for ___________ communication.

a. Team
b. Project Manager
c. Customer
d. Stakeholder

D: Stakeholder encompasses all the other choices.
Activity, Task, Event

- **Activity** -- Task or set of tasks carried out in order to create a deliverable.
- **Task** should be thought of as a subset of an activity.
- **Event** doesn’t consume resources
  - e.g. Project Milestone
Activity List & Updates (PMBOK)

- Include all activities preformed on project
- Organized as extension of WBS
- Should include description of each activity so team members understand scope
- As planning & scheduling progresses, may divide/refine activities to correct logic
- WBS may also need update/refinement
Assumption Checklist

- **Resources**
  - Key staff resources available as needed.
  - Computer resources available as needed.
  - Key client resource available as needed.

- **Delivery**
  - Equipment order lead times are known and fit project timelines.

- **Environmental**
  - Operating environment is familiar to project staff.
Constraint Checklist

- **Resource Constraints**
  - Key staff resources only available part-time.
  - Computer resource availability limited.
  - Key client resource availability restricted.

- **Delivery Constraints**
  - Equipment order lead times cannot be specified with accuracy.

- **Environmental Constraints**
  - Operating environment is new and no project staff understand it.
Assumptions vs Constraints

- **Resource Assumptions**
  - Key staff resources available as needed.
  - Computer resources available as needed.
  - Key client resource available as needed.

- **Resource Constraints**
  - Key staff resources only available part-time.
  - Computer resource availability limited.
  - Key client resource availability restricted.

What do you do with this information?
Quiz #2: WBS Review

1. How does the 100% rule apply to the child –parent?
2. What is the difference between an activity, task, and event?
3. Name at least 5 benefits of the WBS?
4. Which is better, a graphical or outline WBS format?
5. The lowest level of the WBS is called a ________.
6. What is the value of a WBS Task Description (Dictionary)?
End WBS

Questions/Notes