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Lane on Professionalism – Work Breakdown Structure
“How to eat an elephant”
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A work breakdown structure is a conceptual approach to subdividing the work in a project into smaller, manageable pieces. The need for a work breakdown structure arises out of an engineering concept: divide and conquer. A large project like designing and launching the Space Shuttle is beyond the comprehension of a single individual. The level of complexity and the amount of time required is beyond the capabilities of a human to hold in their head. So how does the individual charged with running the Space Shuttle program handle all the complexity?

Like the riddle “How do you eat an elephant?” the answer to building the shuttle is: “one bite at a time.” The task is broken down into major systems, and those in turn are further broken down until the work is manageable at the individual level.

A work breakdown structure is an approach to breaking down a monolithic project into its component tasks or bites which are small enough for an individual to hold completely in their mind. This reduces the overwhelming nature of the complete project and enables an individual to focus. Individual focus is a critical success factor in completing projects on-time, within budget, with high quality deliverables.

Some projects, like the shuttle example, lend themselves to being divided across several individuals. So an extension to the riddle answer might be “... and bring lots of hungry friends.” The work breakdown structure facilitates dividing the work among multiple people or teams of people by dividing the work into assignable tasks.

The work breakdown structure in use at Redbank has the following levels:

- Program
 - Project
 - 1.0.0 Phase
 - 1.1.0 Activity
 - 1.1.1 Task

Each of these levels of work breakdown is described below:

Program The program is the largest of the work breakdown levels and corresponds to large strategic initiatives in a business. The program consists of multiple projects that are associated together into an overarching program. Program management then is the discipline of managing multiple projects and allocating capital and other resources among them.

- Project** A project is a stream of work associated with a specific, measurable business outcome sometimes referred to as a key performance indicator or KPI. A project has the following defined attributes:
- Beginning
 - End
 - Effort (expressed in hours)
 - Deliverables
 - Key Performance Indicator (KPI) for success
 - Mission
 - Objectives
 - Duration
- Phase** A subdivision of a project which corresponds to an objective. Each objective supports the project's key performance indicator and taken together, they ensure success. By breaking projects into phases and requiring that no phase be larger than a set maximum, we limit risk and ensure plenty of opportunities for mid-course corrections between phases. A phase has the following attributes:
- Objective
 - Duration (two to ten weeks)
 - Effort (expressed in hours)
- Objective** An objective of the project supports the overall Key Performance Indicator and can be tested for completion by asking the question; **"have we achieved this objective?"**
- Activity** A subdivision of a phase which is the lowest level of detail used in developing a "high level" estimate for use in clarifying complex deliverables. A high level estimate is used in contracting and expectation setting. It is less cumbersome than a detailed estimate. An activity has the following attributes:
- Deliverable
 - Duration
 - Effort (40 + hours)
 - Resources
- Deliverable** A deliverable is made up of one or more work products which are defined below. Each deliverable is a separate document or knowledge object. A deliverable's completion status can be determined by simply summing the status its work products and dividing by the total. A deliverable made up of 10 work products is 40% complete when 4 work products are complete. This definition and completion measurement approach is simpler than most. It focuses discussion on completion status of work products which can easily be ascertained rather than the more complex percent complete at the work product level. This reduces the possibility of gaming the measurements and places emphasis on the true nature of the work.
- Task** A task is the lowest subdivision of work for which effort and duration are tracked or estimated. A task has a one-to-one

correspondence with a work product. A task has the following attributes:

- Work product
- Duration
- Effort (4-40 hours)
- Resources

Work Product A work product is the output of a task. It has the attributes:

- Completion criteria: objective standard for the acceptable completion of the work product
- Description: a brief prose narrative about the work product, and its purpose
- Template: a generic version of the work product which can be used as a starting point to begin work¹
- Sample: a specific, completed version of the work product in context for reference in completing the work product²
- Work steps: step by step instructions for completing the work product
- Its completion status can be determined at any time with a simple yes or no question; **“Is it complete?”** An affirmative answer can be confirmed by producing a copy of the work product for review.

¹ This is ideally a context sensitive example that would pull items like the client name and the current logo from the environment.

² This is a part of a series of work product samples that when taken together document a fictitious project so that work products and deliverables can be viewed together in the context of a client situation.

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