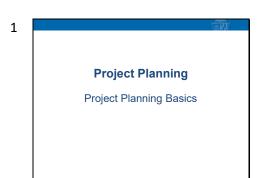**1**

Project Planning

Project Planning Basics

In this lecture we'll discuss some project planning basics.

2

Project Planning Process

Inputs

Tools & Techniques

Outputs

The main purpose of project planning is to come up with a plan for executing and managing the product development effort. This model shows some of the typical inputs, tools & techniques, and typical outputs of project planning.

The key output is a document that we refer to as a project plan. Other outputs might include things like a risk management plan, a communications plan, and plans for supporting processes like quality assurance and configuration management. Sometimes these additional plans are included as sections within the project plan document.

There's quite a bit of work that can go into developing a project plan as you can see from the list of work tasks…and project planning and management software can really be valuable to help with completing these tasks.

What Your Plan Must Communicate

Who
What
When   How

There are some minimal things that a project plan should communicate to all project stakeholders. It must describe what will be delivered. This is usually done by specifying the characteristics of the product to be built and the specific project deliverables that will be produced over the course of the project.
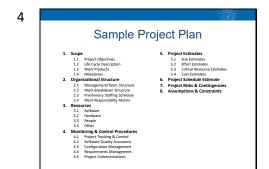
The plan must also describe when the product will be delivered, and when the major tasks and milestones will be completed. Now…I just used the term milestone, and it's important that I define it.

A milestone is a reference point that marks a significant project event. Milestones are used to measure project progress. Examples of project milestones include things like completing the requirements phase or design phase, achieving customer acceptance of the final product, and so forth. In practice, people often confuse milestones with work tasks. Milestones occur as the end result of a set of work tasks, but milestones themselves are not work tasks…they have no duration. As an example, defining the requirements for a software product consists of a number of work tasks…each of which consume effort…and by effort I mean person-hours, person-weeks, and so forth. Maybe interviews are conducted, a list of product functions are specified and documented, and requirements are then reviewed as a quality control measure. An important requirements phase milestone would be acceptance of the requirements by our customer. We submit the requirements document to them for review and we ask for formal sign-off. Achieving formal sign-off is a milestone that occurs as the end result of completing tasks that each consumed effort…and indicates that the requirements phase has successfully been completed. That's a meaningful measure of progress…but it doesn't consume effort. A project plan will contain a list of important milestones as well as anticipated dates by which the milestones are expected to be achieved.

A project plan must also describe how the project work will be done, usually by specifying a project life cycle and an associated set of work tasks (called a work breakdown structure)…as well as how the project

progress will be monitored and communicated.

And…it must also specify who is going to do the work…by identifying project staff roles and responsibilities as well as customer and other stakeholder roles and responsibilities. This is often accomplished using something called a work responsibility matrix.

4

Sample Project Plan

1. **Scope**
   1.1 Project Objectives
   1.2 Life Cycle Description
   1.3 Work Products
   1.4 Milestones
2. **Organizational Structure**
   2.1 Management/Team Structure
   2.2 Work Breakdown Structure
   2.3 Preliminary Staffing Schedule
   2.4 Work Responsibility Matrix
3. **Resources**
   3.1 Software
   3.2 Hardware
   3.3 People
   3.4 Other
4. **Monitoring & Control Procedures**
   4.1 Project Tracking & Control
   4.2 Software Quality Assurance
   4.3 Configuration Management
   4.4 Requirements Management
   4.5 Project Communications
5. **Project Estimates**
   5.1 Size Estimates
   5.2 Effort Estimates
   5.3 Critical Resource Estimates
   5.4 Cost Estimates
6. **Project Schedule Estimate**
7. **Project Risks & Contingencies**
8. **Assumptions & Constraints**

Here's a sample template for a project plan. Notice that it includes very clearly the items I just discussed…and organizes them so that they are easily visible.

Note also that this template includes sections for supporting processes such as quality assurance, configuration management, and requirements management, and it includes a section that describes project risks and contingency plans. Identifying risks at the beginning of a project and monitoring risks throughout the project's duration is particularly important…as risks can change as a project progresses.

In practice, a project plan should be treated as a dynamic document and not as a one-time document that gets produced at the beginning of a project. If you recall the diagram of project management processes in an earlier lecture, you'll remember that plans need to be changed and revised as a project progresses over time. Things change…deadlines are missed, causing schedule changes. New requirements may be added…causing revisions in both effort and schedule.