Applied Software Project Management

Software Project Planning

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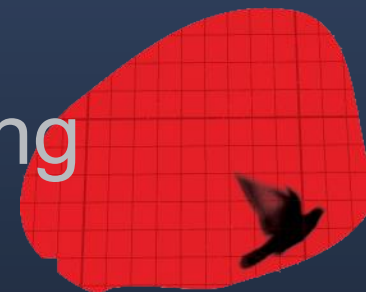
Who needs software?

■ Most software is built in organizations for people with specific needs.

▷ A *stakeholder* is an anyone who has an interest (or stake) in the software being completed

▷ A *user* is someone who will need to use the software to perform tasks.

▷ Sometimes stakeholders will be users; but often the stakeholder will not use the software.

- For example, a senior manager (like a CEO or CTO in a company) will usually have a stake in the software that is built (since it affects the bottom line), even if she won't ever use it.

Who builds software?

■ Software is typically built by a team of software engineers, which includes:

▷ *Business analysts* or *requirements analysts* who talk to users and stakeholders, plan the behavior of software and write software requirements

▷ *Designers and architects* who plan the technical solution

▷ *Programmers* who write the code

▷ *Testers* who verify that the software meets its requirements and behaves as expected

Project Management

■ The project manager plans and guides the software project

▷ The project manager is responsible for identifying the users and stakeholders and determining their needs

▷ The project manager coordinates the team, ensuring that each task has an appropriate software engineer assigned and that each engineer has sufficient knowledge to perform it

▷ To do this well, the project manager must be familiar with every aspect of software engineering

Identifying Needs

■ The project manager drives the scope of the project.

▷ The project manager should identify and talk to the main stakeholder

▷ The effective way to show stakeholders that their needs are understood and that those specific needs will be addressed is with a *vision and scope document*

Vision and Scope Document

■ A typical vision and scope document follows an outline like this one:

1. Problem Statement
    a) Project background
    b) Stakeholders
    c) Users
    d) Risks
    e) Assumptions
2. Vision of the Solution
    a) Vision statement
    b) List of features
    c) Scope of phased release *(optional)*
    d) Features that will not be developed

Project Plan

■ The *project plan* defines the work that will be done on the project and who will do it. It consists of:

▷ A statement of work (SOW) that describes all work products that will be produced and a list of people who will perform that work

▷ A resource list that contains a list of all resources that will be needed for the product and their availability

▷ A work breakdown structure and a set of estimates

▷ A project schedule

▷ A risk plan that identifies any risks that might be encountered and indicates how those risks would be handled should they occur

Statement of Work

■ The statement of work (SOW) is a detailed description of all of the work products which will be created over the course of the project. It includes:

　▷ A list of features that will be developed

　▷ A description of each intermediate deliverable or work product that will be built.

　▷ The estimated effort involved for each work product to be delivered

Resource List

■ The project plan should contain a list of all resources that will be used on the project.

  ▷ A *resource* is a person, hardware, room or anything else that is necessary for the project but limited in its availability

  ▷ The resource list should give each resource a name, a brief one-line description, and list the availability and cost (if applicable) of the resource

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Estimates and Project Schedule

■ The project plan should also include estimates and a project schedule:

▷ A work breakdown structure (WBS) is defined. This is a list of tasks which, if performed, will generate all of the work products needed to build the software.

▷ An estimate of the effort required for each task in the WBS is generated.

▷ A project schedule is created by assigning resources and determining the calendar time required for each task.

Estimates and project schedules will be discussed in detail in later slides.

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Risk Plan

◼ A *risk plan* is a list of all risks that threaten the project, along with a plan to mitigate some or all of those risks.

▷ The project manager selects team members to participate in a risk planning session:

- The team members brainstorm potential risks
- The probability and impact of each risk is estimated
- A risk plan is constructed

Risk Plan Example

Risk plan for project	Call center application project
Assessment team members	Mike, Barbara, Quentin, Jill, Sophie, Dean, Kyle

Risk	Prob.	Impact	Priority	Actions
Senior mangaement will move call center offshore which will require an internationalization feature to be built	3	5	15	1. Mike will add a requirements task to the schedule for Quentin to begin investigating internationalization requirements 2. If the call center is moved, Mike will call a team meeting to review the schedule and Barbara will inform the rest of senior management of the potential delay.
Jill will be pulled off of this project for Royalty Archive project bug fixes	4	3	12	1. Assign Kyle to work with Jill on the initial programming tasks to make sure he is cross-trained 2. If Jill is pulled off, she will spend 10% of her time reviewing this project with Kyle
Reporting feature will be needed	2	4	8	If this happens, Mike will work with Sophie and Kyle to reestimate the programming tasks
Additional time will be needed to gather requirements from potential users at Boston client	5	1	5	None
Will need to support tie-in to support additional database vendors	1	3	3	None