Lecture 8: Project Management

History

1957
The soviets shoot Sputnik-1 into earth orbit

1958
The United States Department of Defense recognizes the lack of planning on their side

Invention of the "Program Evaluation and Review Technique" (PERT)

Invention of the "Critical Path" Method

Extension of PERT with a "Work Breakdown Structure" (WBS)

What is a project?

Definition:
A project is a temporary endeavor undertaken to create a unique product or service

- Every project has a definite beginning and a definite end
- The product or service is different in some distinguishing way from all similar products and services

- In contrast: Operations are ongoing and repetitive

From projects to operations

- Applications are neither projects nor operations, but products

Core activities and project management

- Project (Development)
- Operation (Production)
- Project Management ultimately creates the product of a project

- Core Activities organize and leads the project work to meet project requirements
PM knowledge areas

PM activities fall into nine Knowledge Areas

- Project Integration Management
- Project Scope Management
- Project Time Management
- Project Human Resource Management
- Project Procurement Management
- Project Cost Management
- Project Quality Management
- Project Risk Management
- Project Communications Management

Project success

Definition:
A project is successful if the specified results are delivered in the required quality and within the predetermined time and resource limits.

Computer scientists tend to focus on scope and quality only
- The development of a technically perfect application is not a success if the cost exceeds the price clients are willing to pay
- Excellent project results often are worthless if they come too late (temporary market windows, external deadlines)

Project management life cycle

Example: time management

- Schedule Development
- Task List for Each Team Member
- Schedule Control
- Status Reports
- Project Plan Execution
- Corrective Actions

Process groups

- Project groups are not discrete one-time events
- They overlap and occur at varying levels of intensity within each phase of the project

Interaction between phases

- Input and output of the processes depend on the phase in which they are carried out
- But processes are not limited to one phase (overlaps)
The triple constraint

- Project objectives are **equally important**
- Actions in one project area usually affect other areas

The triple constraint - changes

- **Tradeoffs** among objectives must be **managed**
- Priorities are set by customers and management

More competing objectives

Assumptions

**Definition:**

*Assumptions are factors that, for planning purposes, are considered to be true, real, or certain*

- Assumptions affect all aspects of project planning, and are part of the progressive elaboration of the project
- Project teams frequently identify, document, and validate assumptions as part of their planning process
- Assumptions generally involve a degree of risk

Summary

- Project:
  - **Temporary and goal driven**
- Activities:
  - Core
  - Management
- 9 Knowledge Areas
- Resource planning
- Solving constraints:
  - **Tradeoffs**
- Know your assumptions