Introduction to Project Management

Introductory Points

- Large software projects involving many people over an extended time need planning and control
- Project management aspects:
  - Progress
  - Information
  - People
  - Quality
  - Cost
  - Schedule

Information Planning

- Establish a meta plan for the project including its relation to other projects in the enterprise and set relative priorities
- Enterprise-wide policies are often imposed:
  - Coding standards
  - Data interchange formats
  - Security policy
  - Web page layout
  - ...
Software Projects in Perspective

- A software project in general is part of a project to build a more general system including:
  - Hardware
  - Policies and procedures
  - People training
  - Documentation:
    - Technical
    - User
    - ...

A Broader View on Software Development

Project Planning

- A project plan must be developed early on in the project
- A very loose plan makes it hard to know what to expect
- A very strict plan can be stifling and increases the probability of failure
- An average plan with a willingness to respond to change is necessary
Project Plan

- Introduction
- Process model
- Organization of project
- Standards, guidelines, procedures
- Management activities
- Risks

- Staffing
- Methods and techniques
- Quality assurance
- Work packages
- Resources
- Budget and schedule
- Changes
- Delivery

Project Control

- Time, both the number of man-months and the schedule
- Information, mostly the documentation
- Organization, people and team aspects
- Quality, not an add-on feature; it has to be built in
- Money, largely personnel

Managing Time

- Measuring progress is hard ("we spent half the money, so we must be halfway")
- Development models serve to manage time
- More people ⇒ less time?
  - Brooks’ law: adding people to a late project makes it later
Managing Information

- Documentation
  - Technical documentation
  - Current state of projects
  - Changes agreed upon
  - …
- Agile projects: less attention to explicit documentation, more on tacit knowledge held by people

Managing People

- Managing expectations
  - Building a team
  - Coordination of work

Managing Quality

- Quality has to be designed in
- Quality is not an afterthought
- Quality requirements often conflict with each other
- Requires frequent interaction with stakeholders
Managing Cost

- Which factors influence cost?
- What influences productivity?
- Relation between cost and schedule

Summary

- Project control concerns
  - Time
  - Information
  - Organization
  - Quality
  - Money

- Agile projects do less planning than document-driven projects