Capstone Design

Engineering Progress Reports

Engineering Progress Reports

- Progress reports document ongoing projects
- Multiple possible formats
  - one-page memos
  - long, formal documents
- Intended audience: whoever assigned the project
  - Client
  - Engineering supervisor/manager
- Overall goal
  - Enable the manager or sponsor of a project to make informed decisions about the future of the project
Engineering Progress Reports

• A project of size or significance will likely encounter implementation problems
  – Additional requirements
  – Miscommunications
  – Delays
  – Unexpected expenses
  – Incorrect initial estimates (time, money, etc.)

• A progress report must account for those issues

Organization

• The original proposal for the project determines the structure
  – make use of original milestones or the timeline

• The simplest report structure is:
  – Introduction
  – Work Completed
  – Work Scheduled
  – Problems
Detailed Organization

Beer and McMurrey’s Detailed Structure

- Introduction
- Project Description
- Progress Summary
- Problems Encountered
- Changes in Requirements
- Overall Assessment of the Project

Detailed Organization

• **Progress Summary**
  – Discuss *work done, work in progress, and work to be done*
  – This would be a project-tasks approach. Other approaches are time-periods or a combined approach.

• **Project-tasks approach**
  – Focus on the tasks
  – Defined milestones can organize your discussion into this kind of structure
  – This approach works well for semi-independent tasks at the same time

• **Time-periods approach**
  – Focus on time: the previous period, the current period, the future. If a timeline (or deadline) is more important than milestones, then use this approach

• **Combined approach**
  – The two above approaches could be combined if, for example, under previous work, you break down what you have done by individual tasks
  – Or, under the tasks, you focus on what part is complete, what part is in progress, and what part is yet to come

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Detailed Organization

• **Problems Encountered**
  – Generally unavoidable
  – Don't hide from them; explain what they are and how they might affect key areas of the job (such as timing, price or quality)
  – If the problem occurred in the past, you can explain how you overcame it. This is least serious; in fact, you look good
  – If the problem is in front of you (now or in the future), explain how you hope to overcome it, if you can
Detailed Organization

• **Changes in Requirements**
  – Record the changes to the project
    • Milestones added
    • New requirements
    • Schedule changes (good or bad)
  – Even if these changes have not affected the ultimate goal of the project, you need to tell the supervisor how problems are been accommodated
  – If changes are a direct result of problems encountered, sections may be combined
    – This would lead to a modified organization: first problem and the change it required, then the next problem and change, and so on

• **Overall Assessment of the Project**
  – Since a progress report is not about a finished work, the conclusion needs only to give your professional opinion of how the project is going
  – Being unrealistically optimistic is as inappropriate as being unduly negative
  – **Beware of promising early completion**
    – A single setback can consume significant time
    – Don't overreact if you are behind schedule
    – You may also gain time along the way
    – Far more significant for the engineer is to explain anything that may change the expected quality of the final product
    – Keeping in mind your purpose can help you focus here: your goal is to enable the supervisor to make informed decisions.
Other Information

- Current activity or goal
  - Difficulties and failures in meeting current and previous goal(s) related to the work for the report period
- Analysis of the failure causes or modes
- Impact on current schedules and deadlines
- Impact on current interface specifications
- Additional resources wanted or needed
- Surplus resources no longer used
- Goals achieved and unexpected results