Software Project Management

Lecture 8

Words of Wisdom

- Stop blaming and complaining. Raise to the position when you have no one else to blame, but yourself.
- *Namely that no bearer of burdens can bear the burden of another. Al-Quran (53:38).*

Major Project Documents

- PMI PMBOK describes three major documents
- Project Charter
  - Formally authorizes the project.
- Project Scope Statement
  - States what work is to be accomplished and what deliverables need to be produced.
- Project Management Plan
  - States how the work will be performed.

The Project Plan

- The project plan is the road map
- A map tells you what route to follow
- Without a map you only know to
  - “head roughly east; turn right at the Rocky Mountains”
- Without a map you do not know if you are making progress toward your destination
- If you get lost, a map can help you find the correct way
  - But remember, if the map and the terrain are in disagreement, believe the terrain

Project Plan

- The *project plan* defines the work that will be done on the project and who will do it. It consists of:
  - A project summary describing scope, objectives, assumptions, constraint and all work products that will be produced
  - A list of people who will perform that work (project organization, roles and responsibilities)
  - 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

Why Is A Project Plan Important?

- To assess project feasibility
- To demonstrate breadth and depth of planning
- To provide a vehicle for trade studies & negotiations
- To assess consistency of cost, schedule & estimates
- Provides a mechanism for assessing progress
- Provide a basis for controlling the project

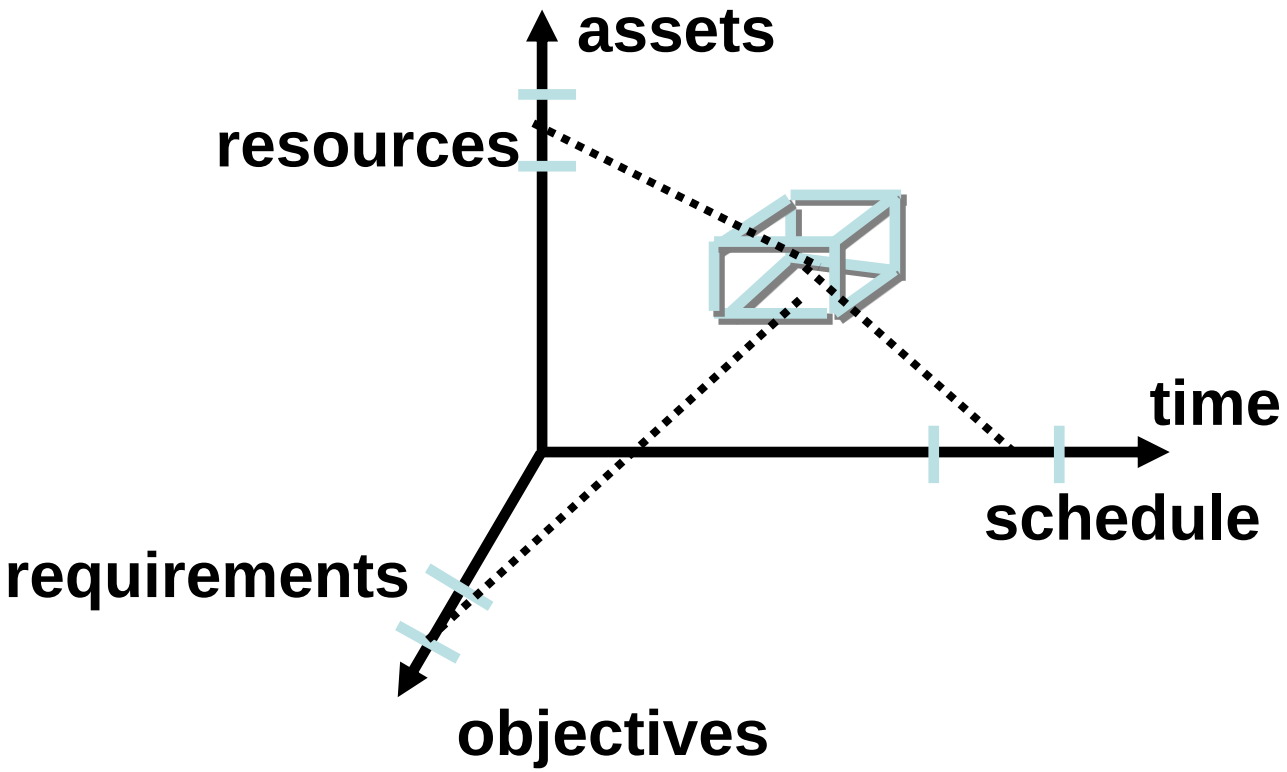
Why Is Planning Not Adequately Done?

- (Apparent) lack of time
- Lack of skills and tools
- Lack of information:
  - Insufficient understanding of the project
    - Inadequate requirements analysis
    - Novelty of the project
  - Insufficient historical data for planning
- Frequently heard excuses:
  - “Why plan, when everything will change anyway?”
  - “Excessive planning indicates a lack of confidence”
  - “I’m a doer, not a planner”

The Project Planning Space

- The project planning space is characterized by:
  - Schedule: time available to do the work
  - Assets: resources available to do the work
  - Budget: money available to acquire the resources
  - Requirements: the work to be done
  - Risk exposure: probability of failure x cost of failure

The Project Planning Space



The initial plan must achieve a balance among these factors, at an acceptable level of risk; any subsequent changes in one must be balanced by adjustments in one or both of the others

The "Rolling Wave" Approach to Project Planning

- During initial planning it is neither possible nor desirable to plan the work activities at the level of task assignments for individuals for the entire duration of the project
  - Because of uncertainty and lack of knowledge
  - Because requirements and resources will likely change
- Therefore, the work packages are elaborated in a "rolling-wave" manner
  - Detailed tasks are planned on a monthly basis
  - Activities are elaborated in as much detail as possible for the coming three months
  - Planning risks and uncertainties are identified
- Elaboration of the work packages results in elaboration of the WBS, activity network, and staffing profiles

Planning is Iterative

- During project planning, an initial version of the project plan is prepared.
- The initial version is the Master Plan that specifies the framework, assumptions, and constraints for conducting the project.
- During project execution significant issues affecting the resources, schedules and requirements will arise.
- To address them, a series of successive detailed plans are elaborated within the framework, assumptions, and constraints of the Master Plan.

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- Title page
- Signature page
- Change history
- Preface
- Table of contents
- List of figures
- List of tables
- 1. Overview
- 2. References
- 3. Definitions
- 4. Project Organization
- 5. Managerial Process Plans
- 6. Technical Process Plans
- 7. Supporting Process Plans
- 8. Additional Plans
- Annexure
- Index

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- **1. Overview**
  - Project Summary
    - Purpose, scope and objectives
    - Assumptions and constraints
    - Project deliverables
    - Schedule and budget summary
  - Evolution of the Plan
- **2. References**
- **3. Definitions**
- **4. Project Organization**
  - External interfaces
  - Internal Structure
  - Roles and Responsibilities

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- 5. Managerial Process Plan
  - Startup Plan
    - Estimation Plan
    - Staffing Plan
    - Resource acquisition Plan
    - Project staff training Plan
  - Work Plan
    - Work activities
    - Schedule allocation
    - Resource allocation
    - Budget allocation

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- 5. Managerial Process Plan (cont…)
  - Control Plan
    - Requirements control plan
    - Schedule control plan
    - Budget control plan
    - Quality control plan
    - Reporting plan
    - Metrics collection plan
  - Risk management Plan
  - Closeout Plan

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- 6. Technical Process Plan
  - Process Model
  - Methods, tools, and techniques
  - Infrastructure plan
  - Product acceptance plan
- 7. Supporting process Plan
  - Configuration management plan
  - Verification and validation plan
  - Documentation plan
  - Quality assurance plan
  - Reviews and audits
  - Problem resolution plan
  - Subcontractor management plan
  - Process Improvement plan
- 8. Additional plans
- Annexure
- Index

Tailoring A Project Plan

- The 1058 template should be tailored for each project
- All relevant parts of the plan should be covered
- Tailoring activities include:
  - deleting unneeded parts (e.g. subcontractor management)
  - modifying parts
  - including additional parts (e.g. other plans)
  - scaling plans (up / down)
    - For larger projects (> 25 people), different groups may be responsible for defining & tailoring their process plans
    - For small and medium projects, it is not a matter of what to omit, but how to scale all necessary processes to cost-effective proportions (all essential project roles and processes must be addressed, even on small projects, perhaps in a less formal way)

An outline of Step Wise planning activities (Huges & Cotterell)

- 1. Identify project scope and objectives
  - Identify objectives and measures of effectiveness in meeting them
  - Establish a project authority
  - Identify stakeholders
  - Modify objectives in the light of stakeholder analysis
  - Establish methods of communications with all parties
- 2. Identify project infrastructure
  - Establish relationship between project and strategic planning
  - Identify installation standards and procedures
  - Identify project team organization

- 3. Analyze project characteristics
  - Distinguish the project as either objective or product driven
  - Analyze other project characteristics
  - Identify high-level project risks
  - Take into account user requirements concerning implementation
  - Select general life cycle approach
  - Review overall resource estimates
- 4. Identify project products and activities
  - Identify and describe project products (including quality criteria)
  - Document generic product flows
  - Recognize product instances
  - Produce ideal activity network
  - Modify ideal to take into account need for stages and checkpoints

- 5. Estimate effort for each activity
  - Carry out bottom-up estimates
  - Revise plan to create controllable activities
- 6. Identify activity risks
  - Identify and quantify activity-based risks
  - Plan risk reduction and contingency measures where appropriate
  - Adjust plans and estimates to take account of risks
- 7. Allocate resources
  - Identify and allocate resources
  - Revise plans and estimates to account for resource constraints
- 8. Review/publicize plan
  - Review quality aspects of project plan
  - Document plans and obtain agreement

Q&A