

Project Management

- 4 main parts
 - People
 - Product
 - Process
 - Project

Who?

- Senior managers – define business issues, often influence projects
- Project managers (technical managers) – plan, motivate, coordinate, and control the software team
- Practitioners – deliver the technical skills
- Customers – specify requirements, others with peripheral interest in software
- End-users – actually use the software

Team Leaders

- Good leader should follow MOI
- M – motivation: encourage technical people to do their best (push or pull)
- O – organization: ability to mold existing (or make new ones) processes so the team can finish
- I – innovation: encourage team to be creative, provide conducive environment for creativity

Traits

- Problem solving – assessing situation, finding solution, implementing solution
- Managerial Identity – must take charge, have confidence to take control
- Achievement – rewards initiative, shows by example
- Influence/team building – “read” people, verbal/non-verbal communication, stay in control under stress

Software Teams

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- Depends on many variables
- Factors to consider:
 - Difficulty of problem
 - Size of the product (lines of code)

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- Factors to consider:
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 - Size of the product (lines of code)
 - Team lifetime
 - How much/little modularization
 - Required quality/reliability
 - Rigidity of the delivery date
 - Degree of communication

Team Dynamics

- Closed team – traditional model of one leader, everyone else follows
 - + works well for similar type projects
- Random team – loose structure, depends on individual initiative
 - + great for innovation/creativity
- Open team – some control/structure but do not inhibit creativity
 - + work well for complex systems, but less efficient
- Synchronous team – natural modules, little communication among units
 - +works for highly compartmentalized projects

Good vs Bad

- Jelled or Toxic?
- Jelled team is ideal for the goal
 - Can foster this in the environment
- Toxicity (poisonous)
 - 5 things cause toxicity
 - Frenzied work environment
 - High frustration levels
 - Poor process
 - Unclear roles (who is in charge of what?)
 - Continuous, repeated exposure to failure

Communication

- Remember, this is all about people, product, process, and project
- Large scale projects – complexity confusion = problems
 - Communication can alleviate or remove
- Uncertainty – leads to changes
- Interoperability – communicate with existing software or multiple components within a single project

Product

- The “thing” to be built
- Scope and decomposition should be focus
- Scope comes from these questions:
 - (Context) How does the software fit in? What are the constraints?
 - (information) What is the input from the customer? What is the required output?
 - (function and performance) How does the software transform the input to the output?
- Also keep in mind that decomposition is useful

Process

- Manager picks a process model
 - Based on the following:
 - Customer and the practitioners
 - Actual product, and the scope
 - Project environment
- TEAM comes up with a plan
- Then decomposition can begin
 - Identify specific work tasks

Decomposition

- Framework activities, then identify tasks
- Example: communication
 - Develop a list of clarification issues
 - Meet with the client to discuss issues
 - Jointly develop a scope document
 - Review the scope document
 - Modify the document as necessary

Project

1. Software team does not understand customer's needs
2. Poorly defined project scope
3. Changes are managed poorly
4. The chosen technology changes
5. Business needs change (not defined)
6. Unrealistic deadlines
7. Resistant users
8. Sponsorship is lost [or not established]
9. Lack of skills
10. Managers avoid best practices or ignore lessons learned

Ensure Success (try)

- Start out right – understand the problem, set realistic goals, choose the right team, choose the right process model
- Maintain momentum – provide incentives, emphasize quality, senior management should stay out of the way
- Track progress – work products indicate progress
- Make smart decisions – “keep it simple”, don’t reinvent the wheel, avoid risks, allocate more time than you think
- Conduct postmortem – lessons learned (for improvement)

W⁵HH

- Why?
- What?
- Who?
- When?
- Where?
- How is it done?
- How much will it cost?