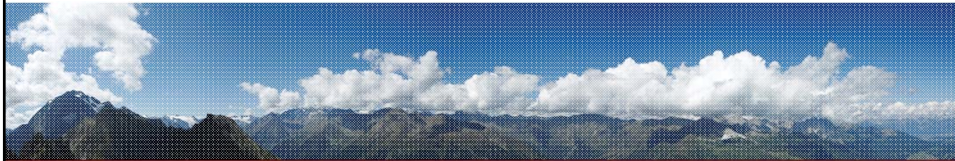


Web Engineering

Project Management for Web Applications



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Where we are?



#	Date	Title
1	5 th March	Web Engineering Introduction and Overview
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14	25 th June	Final Exam

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Overview



- Introduction
- Project Management For Web Applications
 - Challenges
 - Managing the Development Team
 - Managing the Development Process
 - Project Risks & Risk Management
- Wrap-up

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INTRODUCTION

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Purpose

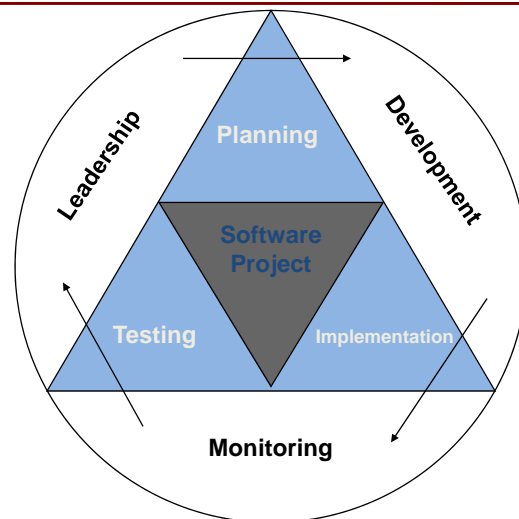


- Project management
 - A systematic approach to planning and guiding project processes from beginning to end.
 - Project management is the discipline of **planning, organizing, securing** and **managing** resources to bring about the successful completion of specific project **goals** and **objectives**¹.
- It is usually a human-centered activity.
- Like in requirements analysis, conflict resolution is critical
- Many development teams are still “new” to the Web
 - Short history, inexperienced in management
 - Experienced in traditional software only

¹http://en.wikipedia.org/wiki/Project_management

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Objectives & Tasks

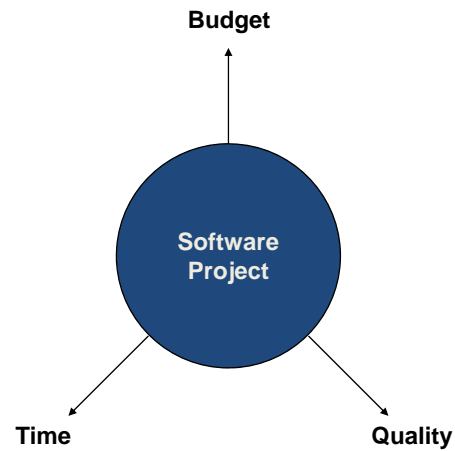


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Balancing Conflicting Goals



- A change in one goal incurs trade-offs with the others.
- Be sure all stakeholders are aware of this relationship!
- eXtreme Programming (XP) is introducing additional variable
 - scope
 - Scope reductions can reduce budget, shorten the development time and rise the quality level.



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PROJECT MANAGEMENT FOR WEB APPLICATIONS

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Traditional vs. Web



- In Traditional Projects:
 - Quality product at lowest cost
 - 10-100 team members
 - 12-18 month horizon
 - \$ millions
 - Requirements-based; structured phases; document-driven
 - OO methods
 - Rigid processes
 - Complex; poor reusability
 - Experienced, professional developers
- In Web Projects:
 - Usable product in shortest time
 - 3-10 team members
 - 3-6 month horizon
 - \$ thousands
 - Agile methods; prototypes
 - Component-based methods; multimedia; visual programming
 - Ad-hoc processes
 - Standardized; high reusability
 - Multimedia designers; Web programmers; marketers

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General Challenges



- Leadership
 - Poor/incomplete planning
 - Unique/legacy software systems
 - Highly technical leadership
- Development
 - Individuality
 - Many alternative solutions
 - Rapid change
- Monitoring
 - Scope of monitoring concerns
 - Correctness of monitored values

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Development Challenges



- Novelty
 - Unknown & uninformed audiences
- Usability
 - No manuals, time to learn extremely short (the app must be intuitive)
- Dynamics
 - Time pressures
- Parallelism
 - Subteams and inter-communication
- Continuity
 - Development to transition
- Juvenility
 - Youth; less experience
- Immaturity
 - Inadequate tools

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Product-Related Challenges



- Web apps are “simple”
- Aesthetics
- Spontaneity
- Ubiquity
- Compatibility
- Stability & Security
- Scalability

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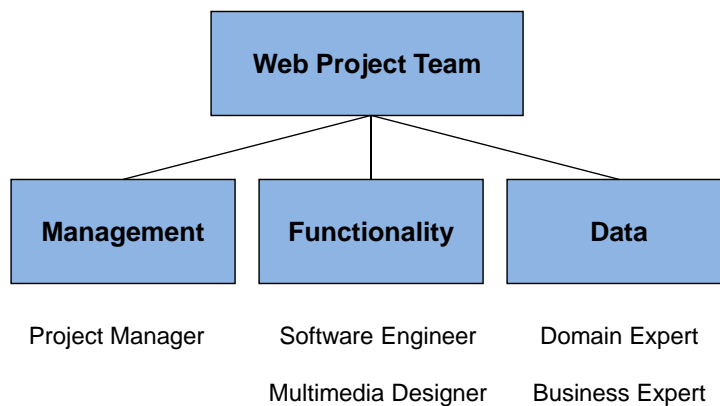
Managing the Development Team



- Success is largely determined by group dynamics & how well they are managed
 - Communication among team members
 - Motivation & coordination by the Project Manager
 - Identification & resolution of conflicts ASAP
 - Concurrent engineering
 - Primary & backup strategies
 - Documentation is everyone's responsibility

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The Web Project Team



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The Roles of the Project Manager



- Mediator
- Motivator
- Communicator
- Translator
- Trainer
- Customer liaison
 - Requirements during development
 - Post-deployment?

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10 Golden Rules



1. Promote the professional self-conception of each team member and ethical behavior.
2. Stress the importance of different app knowledge
3. Solve conflicts quickly
4. Keep roles well-defined
5. Look for parallel developments & synergies
6. Spread the documentation task fairly
7. Promote & coordinate continuous use of tools
8. Translate costs & values
9. Keep the customer involved
10. Monitor project progress and objectives

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Managing the Development Process



- Tool-driven vs. document-driven
 - Requirements & test suites
 - Communication (Wikis)
- Configuration management
 - Versioning
 - Short iteration cycles
 - No project is too small for it!
- Measuring progress
 - System specification
 - The application itself

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Project Risks



- Risk: the probability of an activity to result in a loss
- Most critical risks:
 - Personnel deficits
 - Unrealistic time and cost specs
 - Incompatible third-party components
 - Misunderstood properties
 - Poor user interface

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Nielsen's Top Risks



- Unclear definition of objectives
- Wrong target audience
- Development-oriented page structure
- Inconsistent design
- Insufficient budget for maintenance
- Content recycling & poor linking
- Mixing Internet & intranet
- Marketing research is seen as usability research

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Risk Management



- How likely is a problem to occur, what will be the impact, and what are the solutions?
- Assessment: Identify, analyze, & prioritize
- Control: Provision, monitor, mitigate
- Groups are better at assessing and managing risk than individuals
- Perform a cost-benefit analysis to justify risk management activities

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WRAP-UP

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Things to keep in mind (or summary)

- Project Management is part of the meta-development process (process about the process)
 - Minimize risks
 - Enable development process monitoring
 - Require integration with the development process (“probe” points)

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Bibliography



- **Mandatory reading**
 - Kappel, G., Proll, B. Reich, S. & Retschitzegger, W. (2006). *Web Engineering*, Wiley & Sons. **9th Chapter**

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Next Lecture



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Questions?

