

Project basics & team work, communication

Project course @ÅA

Agenda

- Projects
 - Goals, success, mistakes
- Teams
 - Team work
 - Team building
- Communication
 - Team communication

Reports from other universities

- “A software project course, without teaching project management, is a course in how to NOT do projects”

What is a project?

- Limited lifetime
 - Defined goals
 - Limited resources
 - Defined project organization
 - Uses project systematics
-
- First "modern" project: The Manhattan project?

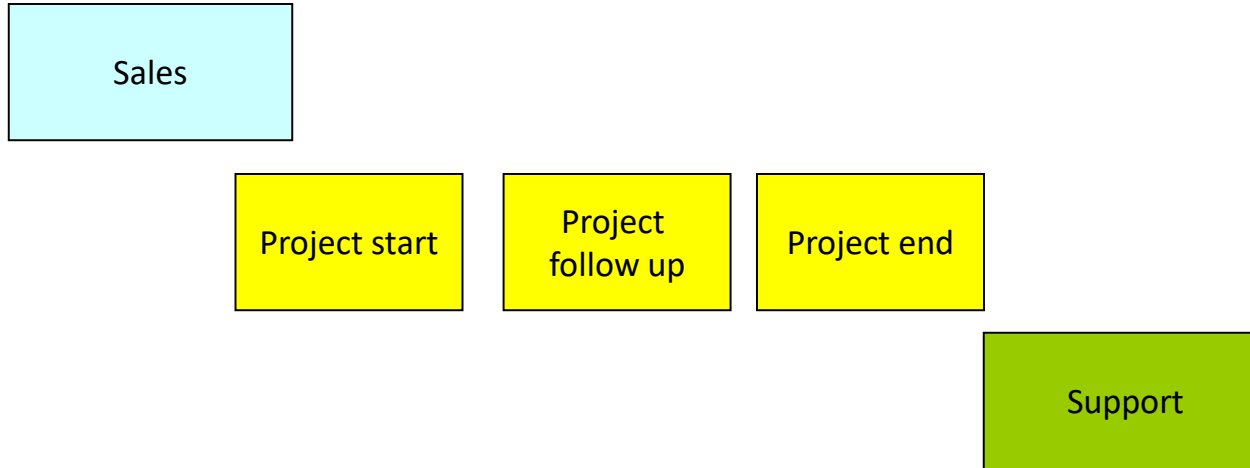
Project systematics

- Project plan
- Clear responsibilities (roles)
- Checkpoints / milestones
- Defined phases
- Control, risk management
- Reporting

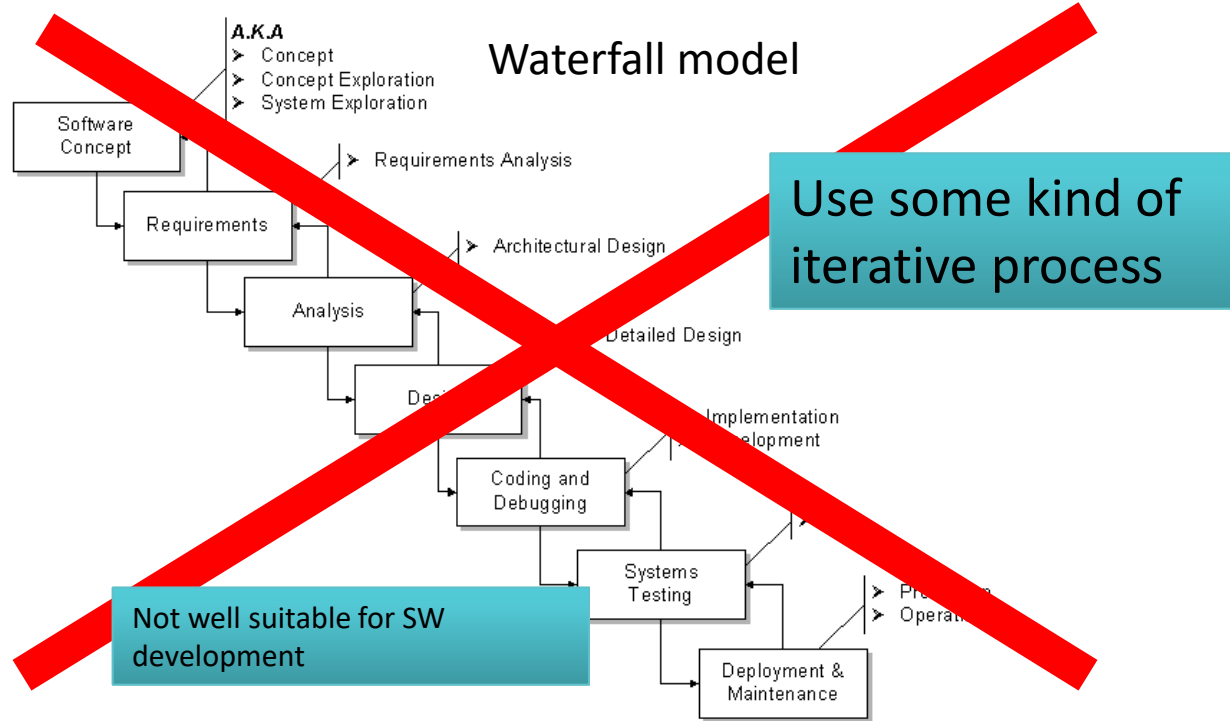
Terminology

- Processes
 - defined ways of working
- Projects
 - well defined isolated things to do
- Teams
 - a group of people with a specific task / project
 - usually within organizational units
- Units/functions
 - structure in the organization

Project lifecycle - high level



Project phases



Project goals

- Two types of goals
 - Visionary – that is what we would like to have
 - Realistic – goals that you know you can achieve using your present project organization
- Stepwise feature introduction
- “Baby-steps to the top”

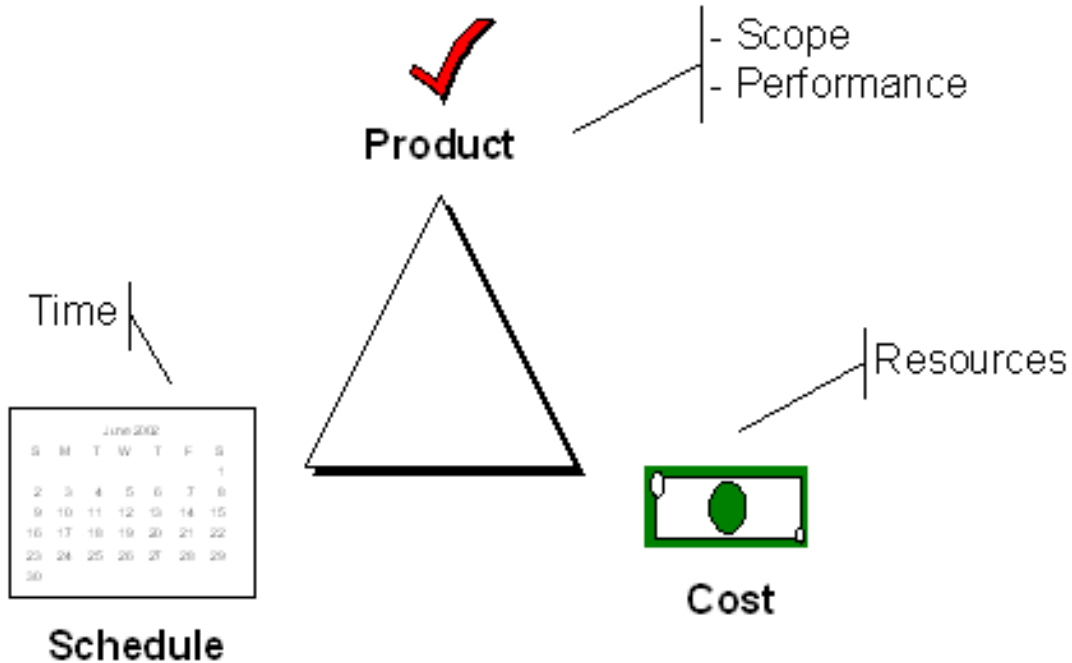


SMART Goals

- **S**pecific
 - well defined, clear to anyone who has basic knowledge of the project
- **M**easurable
 - to know is the goal is reachable and how far away from completion we are
- **A**greed upon
 - agreement between users and project team on goals
- **R**ealistic
 - in relation to resources, knowledge and time
- **T**ime-framed
 - how much time is needed to accomplish the goal

Trade-off Triangle

"Select two out of three"



Project success

- In groups
 1. When is a project successful?
 2. What is important?
 - Schedule / budget / features
 3. What is required to be successful?

Project success

- Project must meet customer requirements
- Project must be under budget
- Project must be on time



Project success

Critical Success Factors and Their Importance for System Implementation (Listed in decreasing order of correlation)

[Pinto (1986), See Smith (2000), p. 60]

1. **Project mission.** Initial clearly defined goals and general directions.
2. **Top management support.** Willingness of top management to provide the necessary resources and authority/power for implementation success.
3. **Schedule plans.** A detailed specification of the individual action steps for system implementation.
4. **Client consultation.** Communication, consultation, and active listening to all parties impacted by the proposed project.
5. **Personnel.** Recruitment, selection, and training of the necessary personnel for the implantation project team.
6. **Technical tasks.** Availability of the required technology and expertise to accomplish the specific technical action steps to bring the project on-line.
7. **Client acceptance.** The act of "selling" final product to its ultimate intended users.
8. **Monitoring and feedback.** Timely provision of comprehensive control information at each stage in the implementation process.
9. **Communication.** The provision of an appropriate network and necessary data to all key actors in the project implementation process.
10. **Troubleshooting.** Ability to handle unexpected crises and deviations from plan.

Why top management support?

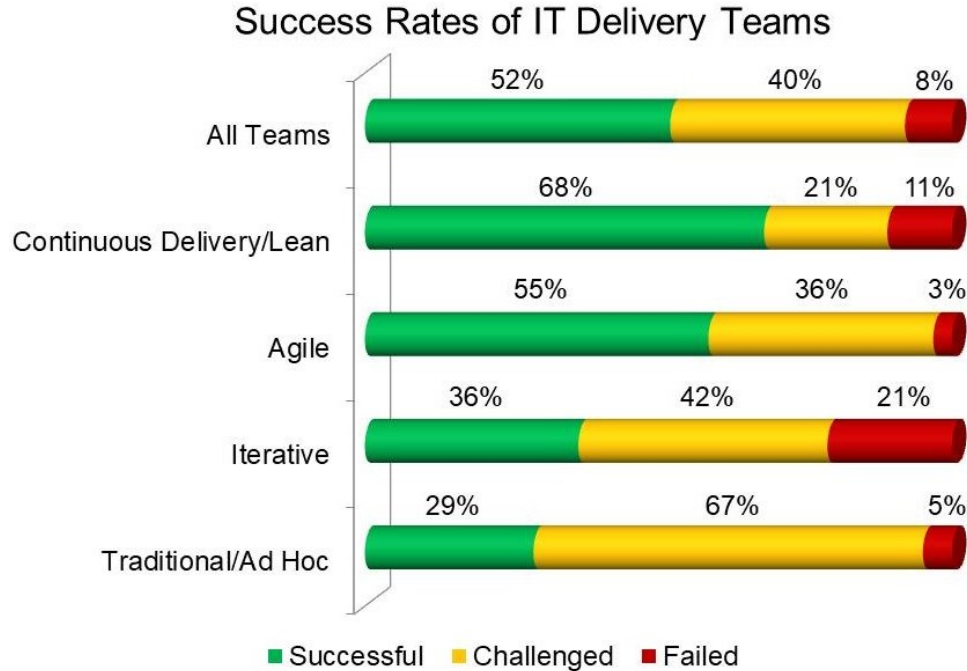
- Top management can help to:
 - Secure adequate resources
 - Get approval for unique project needs in a timely manner
 - Receive cooperation from people throughout the organization
 - Provide leadership guidance

Project success rate

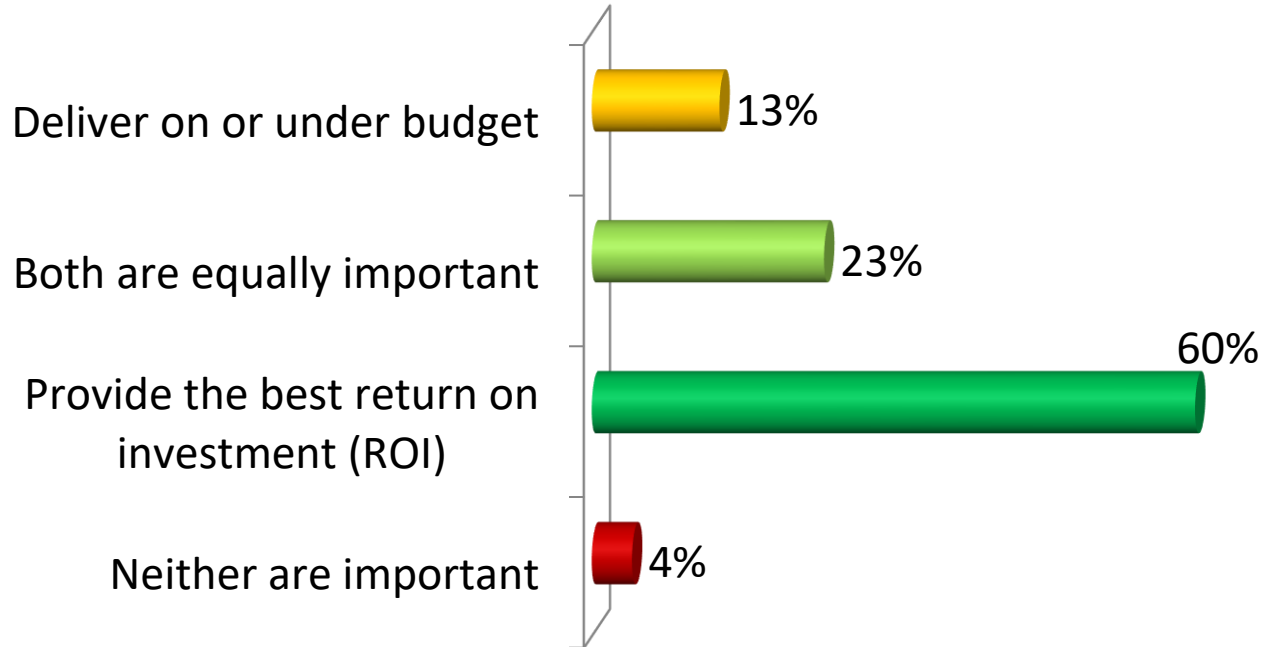
(Lewis, 2000, p. 109)

- 17% succeeded
- 50% revised
- 33% failed (never finished)
- 10% finished on time

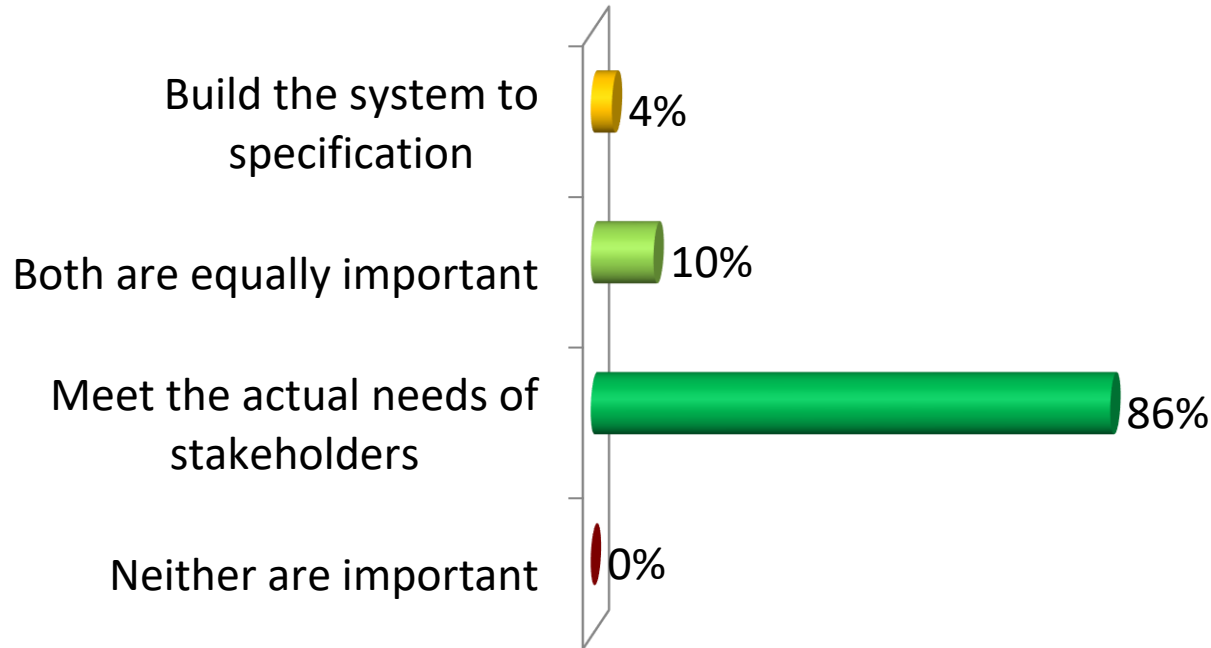
Comparing Software Development Paradigms: 2018



Budget/ROI: Which is more important?



Stakeholder Value: Which is more important?

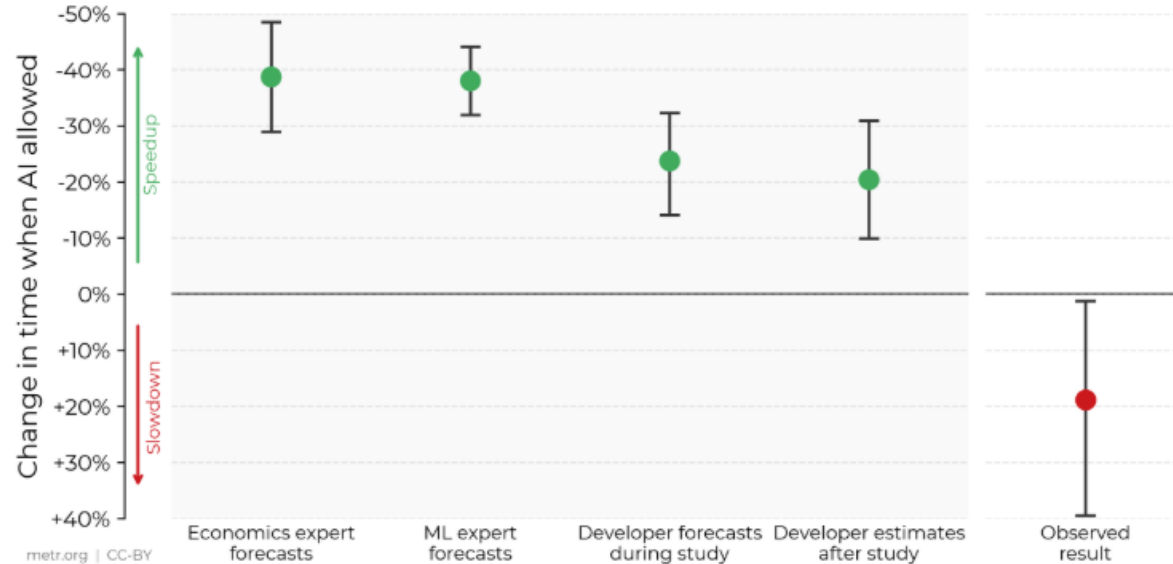


Does AI help ?

Against Expert Forecasts and Developer Self-Reports, Early-2025 AI Slows Down Experienced Open-Source Developers



In this RCT, 16 developers with moderate AI experience complete 246 tasks in large and complex projects on which they have an average of 5 years of prior experience.



Source: <https://arxiv.org/abs/2507.09089>

Project failures

- What causes failures?

Project mistakes – people related

- **Undermined motivation**
- Weak personnel
 - Weak vs. Junior
- Uncontrolled problem employees
- Heroics
- Adding people to a late project
- Noisy, crowded offices
- Customer-Developer friction
- Unrealistic expectations
- Politics over substance
- **Wishful thinking**
- Lack of effective project sponsorship
- **Lack of stakeholder buy-in**
- Lack of user input

Project mistakes – process related

- **Optimistic schedules**
- Insufficient risk management
- Contractor failure
- Insufficient planning
- Abandonment of plan under pressure
- Wasted time during fuzzy front end
- Shortchanged upstream activities
- Inadequate design
- Shortchanged quality assurance
- **Insufficient management controls**
- Frequent convergence
- Omitting necessary tasks from estimates
- Planning to catch-up later
- Code-like-hell programming

Project mistakes – product related

- **Requirements gold-plating**
 - Further requirement enhancement without a real need
- **Feature creep**
- **Developer gold-plating**
 - Beware the pet project
- **Push-me, pull-me negotiation**
 - New tasks are added to an already late project
- **Research-oriented development**
 - Are you doing research, or are you developing a product?

Project mistakes – technology related

- Silver-bullet syndrome
- Overestimated savings from new tools and methods
- Switching tools in mid-project
- Lack of automated source-code control

Team work & Communication

Why work in teams?

- Bring together complementary skills
- Problems are solved more quickly
- Provides a social framework for working
- Creates a fun atmosphere



Team forming

- Some physical exercise ;)
- Get yourself into a team that...

Team building

- High level of interdependence among team members
- Team leader has good people skills and is committed to team approach
- Each team member is willing to contribute
- Team develops a relaxed climate for communication
- Team members develop a mutual trust
- Team and individuals are prepared to take risks
- Team is clear about goals and establishes targets
- Team member roles are defined
- Team members know how to examine team and individual errors without personal attacks
- Team has capacity to create new ideas
- Each team member knows he can influence the team agenda



The Apollo syndrome

(Meredith Belbin, 1981)

- **Team of people with sharp, analytical minds and high mental ability not managing to perform well**
 - spend time in abortive or destructive debate, trying to get other to adopt their view
 - difficulties in decision making
 - act along their own favorite lines
 - sometimes team notice what is happening, but react by over compensating – avoid confrontation



Team dynamics roles

- Task
 - Summarizer
 - Path-finder
 - Gatekeeper
 - Encourager
- Relationship
 - Harmonizer
 - Analyzer
 - Fact seeker
 - Initiator

Best friends do not necessarily make the best team.
Sometimes this can even worsen the team work.

Team practical roles

- **Team leader (=project manager)**
- **Product owner**
- Development
- Planning / Design
- Process
- Support
- Testing manager
- Documentation

Most important comm. Skill?

- What are the communication skills needed in a project?
- What is the most important communication skill a person involved / manager should have?

About communication

- verbal communication
 - language, quality of spoken lang. , tempo rhythm, pitch articulation
- nonverbal communication
 - appearance, facial expressions
- written
 - books, journals, daily papers, memos etc, emails

Communication & Projects

- Group of experts
- Limited time resources
- Often problem solving situation
- Strong goal orientation
- Responsibilities for other parties

Small group communication

- Groupthink – we do work together
- Norms – we have some rules
- Agenda setting – we are organized
- Roles (information giver, information seeker, elaborator, initiator, administrator)
- Leadership (authoritarian, consultative, participative, laissez-faire, shared etc.)

Team communication tools

- E-mail
 - e-mail lists?, who is responsible, moderator?
- Phone / Skype
 - fast problems solving
 - no "automatic" documentation
 - no memos to the rest of the team
- Chats / WhatsApp / etc.
 - history stored?, visible to all in team?
- Computerized project management system (AHA, Trac, Trello, MS Excel?, Google Docs, OneDrive, Dropbox....)

Types of communication

- **Formal, impersonal approaches**
 - Documents
 - Project milestones
 - Error tracking reports
 - Source code
 - Repository data
 - Project control tools
- **Formal, interpersonal procedures**
 - Design reviews
 - Requirements reviews
 - Status reviews
 - Code inspections
- **Informal interpersonal procedures**
 - Group meetings
- **Electronic communication**
 - Electronic mail
 - Project bulletins
- **Interpersonal network**
 - Discussions with peers

Effective team meetings

- Use an AGENDA, distributed in advance
 - People should know what is to be discussed
- Use team meeting for
 - Analyzing, reporting what has been done
 - Plan what should be done next
 - Making decisions
 - NOT FOR DOING THE WORK
 - Exception: "brain-storming activities", hackathons, team learning

Simple AGENDA

GROUP A MEETING, DC 3101 Nov 7. at 10.15

Present: NN, NN, NN, NN

AGENDA:

- * Code status (dev manager)
- * Decision on testing tools (testing manager)
- * The documentation templates (process manager)
- * Test plan (testing manager)
- * Next meeting

Agenda distributed 1-10 days before meeting

Or send a calendar invitation !

