

Project Handling – My Personal Primer

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Characteristics of a Project

- ▶ Performed by people
- ▶ Constrained by *limited resources*
 - ▶ Time and budget
- ▶ Planned, executed, and controlled
- ▶ Temporary
 - ▶ Regular *operations* are different
- ▶ Result is a unique product or service
- ▶ May be embedded into strategic plans!

Why Project Management Matters to You

- ▶ Position is embedded into a project (AIMES)
- ▶ PhD is a project
- ▶ Many projects fail / are over time/budget

Project Management

- ▶ Plan development/execution
- ▶ Change control
- ▶ Quality
- ▶ Cost
- ▶ Time
- ▶ Human resource
- ▶ Communication
- ▶ Risk

Why do projects fail?

- ▶ Loss of focus
 - ▶ Spending time on something (rather) useless
 - ▶ Perfectionism
 - ▶ Ambition to do work alone
 - ▶ US researchers often much more efficient
- ▶ Communication
 - ▶ Unclear responsibilities
 - ▶ Who works on Z? I thought you?
- ▶ Lack of planning
- ▶ *Rarely* due to lack of knowledge / expertise

How I manage projects

- ▶ Goals
 - ▶ Project success
 - ▶ Fun, challenge
- ▶ I don't like (big) management overhead
 - ▶ As little as necessary
 - ▶ Some lookahead into the future
 - ▶ Prevent mistakes that I know
 - ▶ Tightened as needed
- ▶ Clear responsibilities
 - ▶ You, me, partners
- ▶ Trust
 - ▶ Mutual agreement of tasks
 - ▶ Notification upon problems

- ▶ Communication
 - ▶ Open and direct communication
 - ▶ Immediate notification if work takes longer than expected
 - ▶ Feel free to ask *a/ways* for help
- ▶ Meetings
 - ▶ As necessary!
 - ▶ (Bi-)weekly proven to be efficient
 - ▶ More / less is possible
- ▶ Tasks are defined on the meeting intervall
 - ▶ Mutual agreement
 - ▶ Problems must be communicated
 - ▶ Success ratio is KPI, assesses risk

Software development

- ▶ Test driven
 - ▶ Write tests (first) implement
- ▶ Environment
 - ▶ CMAKE, ctest, Docker, doxygen, plantuml, dot
- ▶ Agile
 - ▶ Little functionality, testing, next functionality
 - ▶ Estimation of implementation time for each step
 - ▶ Periodic refactorings
- ▶ After a few cycles, design properly
 - ▶ Throw away prototypes

How I manage people

▶ Goals

- ▶ Getting the mandatory work done
- ▶ Developing their skills towards *their* goals
- ▶ Developing skills towards useful things -
- ▶ Prevent you making mistakes that I know off
- ▶ Fun, challenge, variation of work

▶ Factors

- ▶ Available skills
- ▶ Engagement to learn (new) things
- ▶ Efficiency in problem solving
- ▶ Self-management abilities

▶ Tasks

- ▶ I estimate time of tasks based on experience
- ▶ Try to always put a little bit more on the stack
- ▶ I'm open to negotiate tasks, long-term strategy

Empowering people / skills

- ▶ Technical
 - ▶ Software technique
- ▶ Theoretical
 - ▶ Algorithms, ...
 - ▶ Software engineering
- ▶ Academic
 - ▶ Teaching
 - ▶ Supervision Bachelor/Master
 - ▶ Program committee / review
- ▶ Projects
 - ▶ Writing a project plan
 - ▶ Project management

My perspective on empowerment

- ▶ Seeing how people improve is great
- ▶ I understand this as part of the job
 - ▶ For reasons it is called “DoktorVater”
 - ▶ I’m happy to help
- ▶ At best:
 - ▶ People do great work, only little feedback/suggestions needed
 - ▶ People manage most of their project themselves
 - ▶ I can also learn sth. from people which is usually do

What should be a good boss?

- ▶ Manager
 - ▶ Goal: “consistently producing key results expected by stakeholders”
 - ▶ Do project/personal management/operations
 - ▶ Strategic planning, tactical planning
 - ▶ Bureaucratic stuff
- ▶ Leader
 - ▶ Establishes visions and strategies for changes
 - ▶ Aligning people on strategies
 - ▶ Motivating / inspiring
- ▶ Conflicts are inevitable if we work hard
 - ▶ Solving conflicts, therefore, we have to communicate

Responsibilities Julian

- ▶ Makes strategic plans across projects
 - ▶ To do so, I have to know *what* is going on
- ▶ Manages people and research goals
 - ▶ Tries to improve skills
 - ▶ Delegates work with other skill profile to you
 - ▶ Improves networking
- ▶ Manages significant code design changes
- ▶ Does project management to the extent necessary
 - ▶ Likes it if people can do more
- ▶ Provides *honest* and *constructive* feedback on *whatever*
 - ▶ Send whatever you have
 - ▶ Doesn't like it if I have to review 100 pages crap
- ▶ Provides help on *whatever*
 - ▶ Redirects to another person to provide help
- ▶ Trusts you

Expectations/Responsibilities to You

- ▶ Like (most) of your work
 - ▶ Otherwise stop and do sth. else
- ▶ Ambition to do sth. great
- ▶ Micromanage yourself
 - ▶ If not good enough, ask me
- ▶ Feedback to me:
 - ▶ If something in the project management is odd
 - ▶ If you have any problem with anyone or me
 - ▶ Issues that may delay work
- ▶ Trust me
 - ▶ I always accept constructive criticism

Time Management

- ▶ How to estimate time for a task?
 - ▶ Experience of previous tasks
 - ▶ Prototype: look into a task to see how long subtask takes
 - ▶ Need to do 10 things, do one
 - ▶ Need to write 150 pages PhD, so write 5
 - ▶ What is a subtask?
 - ▶ At best: should not take longer than a few hours
 - ▶ If longer, divide it further into subtasks
 - ▶ Estimate time (budget) for subtask
 - ▶ e.g. 2-3 hours to write an introductory page for the PhD
- ▶ 80/20 rule:
 - ▶ 20% work resolves 80%, easy to achieve
 - ▶ 80% time needed to solve last 20%; so don't go to 100%
 - ▶ Also: "20%" skill can solve 80% of the task
 - ▶ I expect that everyone can achieve 80% :-)

Time Management: Processing Tasks

- ▶ If time budget is 1/2 spend, consider:
 - ▶ How much of the task is complete?
 - ▶ If very little has been achieved: is this the right strategy?
 - ▶ If productive continue, otherwise:
 - ▶ Make a break, do sth. else for a while
 - ▶ If you then have a good idea, then retry with remaining 1/2 time
 - ▶ Otherwise talk/ask for inspiration
- ▶ Risks
 - ▶ Happen from time to time; then involve me
 - ▶ Don't know what to do; talk
- ▶ => At worst, a few hours lost

Further reading

- ▶ PMBOK