**Planning process**

- Planning is the processes for the processes
- Planning is also a development perspective
- Planning is about refining processes:
  - the worldly level assigns activities to the process model, defines tasks and measures
  - the atomic level is detailed description of input and output

---

**What is a project?**

- A temporal organisation with specific goals:
  - Functions
  - Quality
  - Time
  - Resources

---

**The project plan**

- Shall always be written down.
- Shall be readable to all stakeholders of the project.
- We’ll go through some important parts of a project plan with theory and recommendations.
Administrative information

- Project identity
- Members: name, role, phone, email
- Version number
- Mailing lists
- Home pages
- Customer contact
- Table of contents

Overview

- Purpose
- Prioritised goal(s), sub goals, internal goals
- Limitations and constraints:
  - Hardware
  - Resources
  - Time
  - Technology
  - Knowledge
- Stake-holders: primary, secondary, indirect

Phase plan

- Feasibility study
- Inception
- Elaboration
- Transition
- Construction
- Execution
- Conclusion

Same management, different development

- Feasibility study
- Analysis
- Design
- Testing
- Implementation
- Execution
- Conclusion

Topic for the project plan
**Organisation**

- Place of the project
- Teams
- Roles
- Responsibilities
- Authorities
- Communications
- Documents

- Recommended roles:
  - Project leader
  - Lead analyst
  - Architect
  - Test leader
  - Librarian/Knowledge manager
  - Testers should be independent

**Project manager**

- Has the final word on all matters
- Manages resources
- Ensures goals
- Makes staffing
- Plans
- Reports internally, externally
- Leadership
- Social skills
- High technical skill

**Lead analyst**

- Defines services provided
- Captures requirements
- Models the forthcoming system
- Handles contacts with customer and users
- Has the final word on requirements interpretations
- Assists marketing
- Writes requirements specification
- Very good communication skills
- High analytical skills
- Good domain and business knowledge

**Architect**

- Has the final word in technical matters
- Decide and specifies:
  - target environment
  - high-level architecture
  - sourced components
  - external interfaces
- Ensures requirements
- Highest possible technical skills
- Leadership
- Social skills
Test leader
- Evaluates requirements
- Creates and selects test cases
- Creates and maintains a test environment
- Feed-back test results
- Decides the status of the product
- Very high analytical skills
- Very high technical skills
- Skills in statistics
- Sometimes the default deputy PL

Librarian/Knowledge manager
- Keeps documents in good order
- Makes documents available
- Follow-up on administrative decisions
- Collects time-reports
- Identifies reusable components
- Creates common experience
- Very high sense for good order
- Experience as developer

Other useful roles
- Development manager
- Procurement manager
- Economic controller
- Quality coordinator
- Deployment responsible
- Technical writer
- Course developer

Documentation plan
Internal:
- Minutes of meetings
- Meeting agendas
- Time reports
- Experience build-up
- Inspection records
- Accounting
- Group contract
- Mile-stone review

External:
- Requirements specification
- Design specification
- Test report
- Manuals
- Economic communication
- Promotion material
- Toll-gate preparation
Training and education

Internal:
- Tools
- Techniques
- Methods
- Maturity

External:
- Customers
- Users
- Operation

Resource plan

People:
- Expertise
- Availability
- Premises
- Hardware
- Software
- Testing equipment
- Travelling
- Customer time
- Budget

Meeting plan

Type of meeting
Frequency
Process
Participation

Communication genres

Negotiations:
- Constructive
- Side-effects

Workshops:
- Reduced lead-time
- First-hand information is spread
Mile-stone and tollgate plan

Toll-gate

Decision about the continuation of the project by external committee

Mile-stone

Verifying sub-goal fulfilment. Can be done internally.

Activities

- Number
- Name
- Resources
- Duration
- Break down per person

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Plan and follow-up

follow-up periods

outcome

initial plan

time

Gantt chart
Quality and Change

Quality plan:
- Tests:
  - unit test
  - system test
  - integration test
  - acceptance test
- Inspections
- Reviews
- Measurements
- Follow-up
- Experience feed-forward

Change plan:
- Request
- Process
- Decision
- Documentation
- Configuration management
- Follow-up

Risk analysis

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Introduction of project plan

- Project overview
- Main deliverables
- Main milestones
- Library for documents and code
- Definitions
- Communication with stake-holders

Project management process

- Staffing
- Priorities
- Philosophy
- Risk management
- Task refinement
- Routines for reporting
COCOMO

- Effort = C1 EAF (Size)$^{P1}$
  - Effort = number of staff months
  - C1 = scaling constant
  - EAF = Effort Adjustment Factor
  - Size = number of delivered, human produced source code instructions (KDSI)
  - P1 = exponent describing the scaling inherent of the process

- Time = C2 (Effort)$^{P2}$
  - Time = total number of months
  - C2 = scaling constant
  - P2 = Inherent inertia and parallelism in management

DELPHI

- Present information for expert panel
- Meet to discuss a common view
- Independent, personal estimates
- Summary
- Discussion and second round