



MASARYKOVA UNIVERZITA

PV213 Enterprise Information Systems in Practice

06 – Development process



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Tento projekt je spolufinancován Evropským sociálním fondem a státním rozpočtem České republiky.



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PV213 EIS in Practice: 06 – Development process

Tento projekt je spolufinancován Evropským sociálním fondem a státním rozpočtem České republiky.

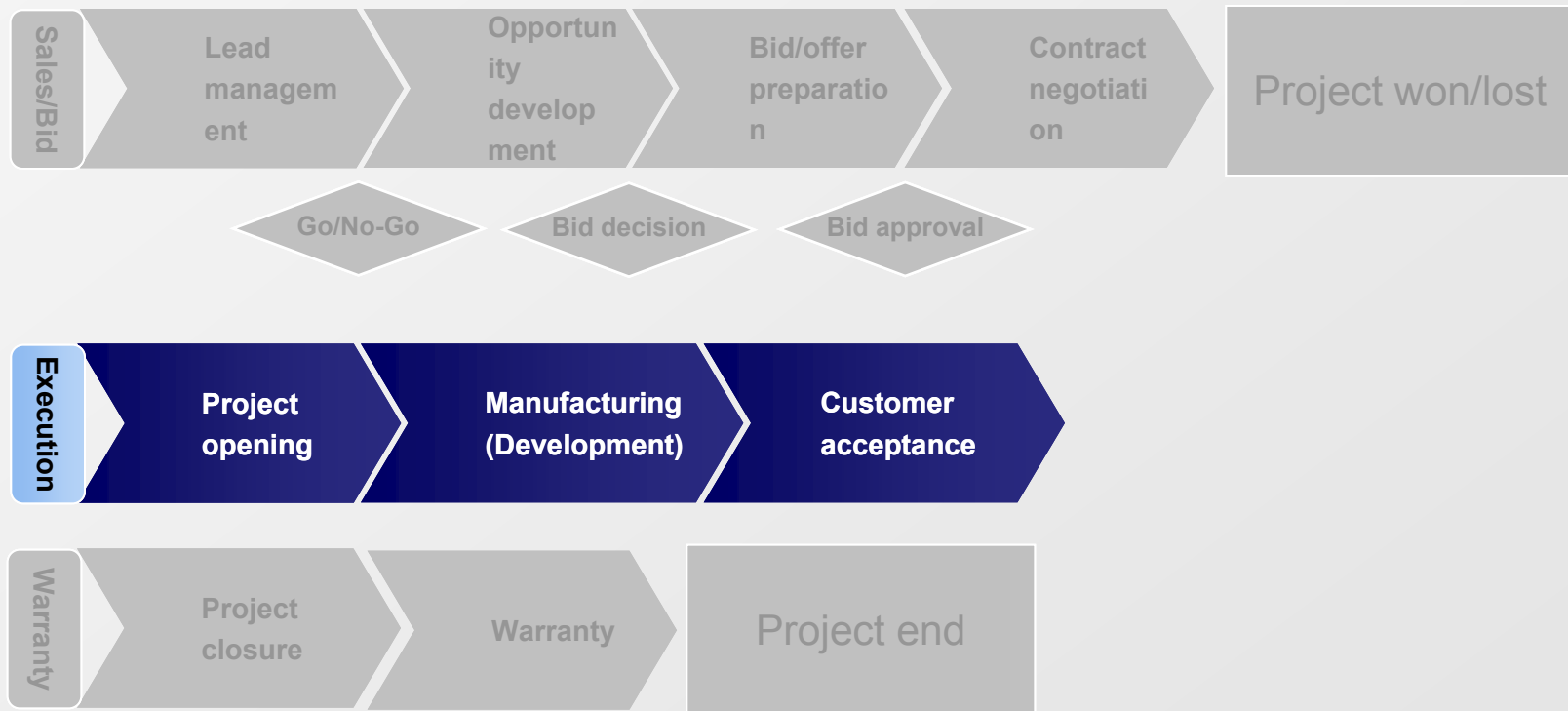


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Content of this presentation

- Development process in general
- Waterfall model
- Iterative and incremental development
- Agile development
- Process tailoring
- Scrum

Software development process



Software development method

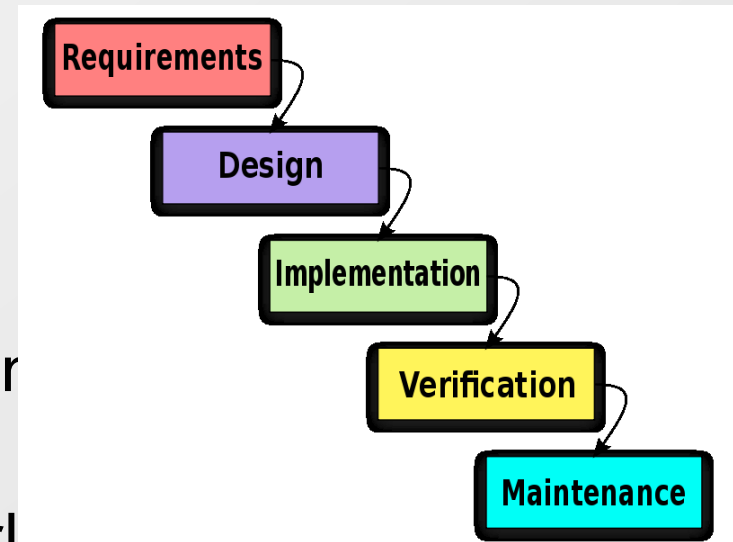
- Defined development approach to streamline the development process

- Examples
 - Waterfall
 - Iterative and incremental
 - Agile

- Sometimes combination of models is used

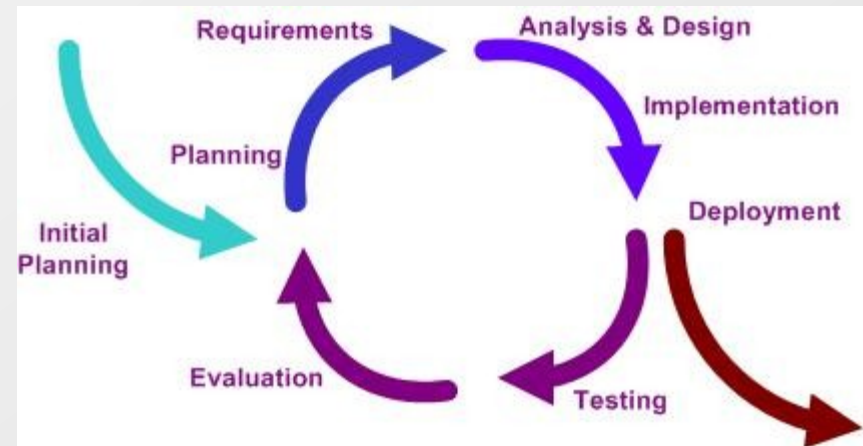
Waterfall model

- Sequential development
- Pros
 - Documentation
 - Easy to understand
 - Design according to all features
- Cons
 - Handling of defects from early phases
 - Reaction on change of requirements
 - Missing feedback from customer on preliminary product



Iterative incremental development

- Cyclic development
- Pros
 - Customer feedback on preliminary product
 - Fast reaction on new customer requirements
- Cons
 - Original design may not fit to new requirements



Agile development

➤ Group of methods and approaches

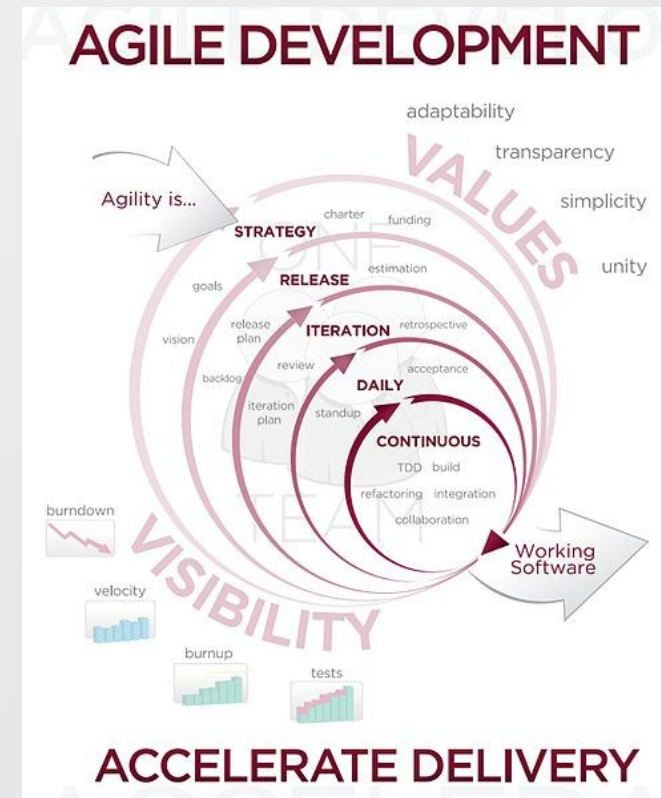
➤ Methods

➤ Scrum

➤ Extreme Programming

➤ Feature Driven Development

➤ ...



Agile manifesto

- We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:
 - **Individuals and interactions** over processes and tools
 - **Working software** over comprehensive documentation
 - **Customer collaboration** over contract negotiation
 - **Responding to change** over following a plan

- <http://agilemanifesto.org>

How to decide?

- Contracting
- Customer involvement
- Requirements
- Organization
- Development team and infrastructure
- Project size
- Safety and security aspects of the product

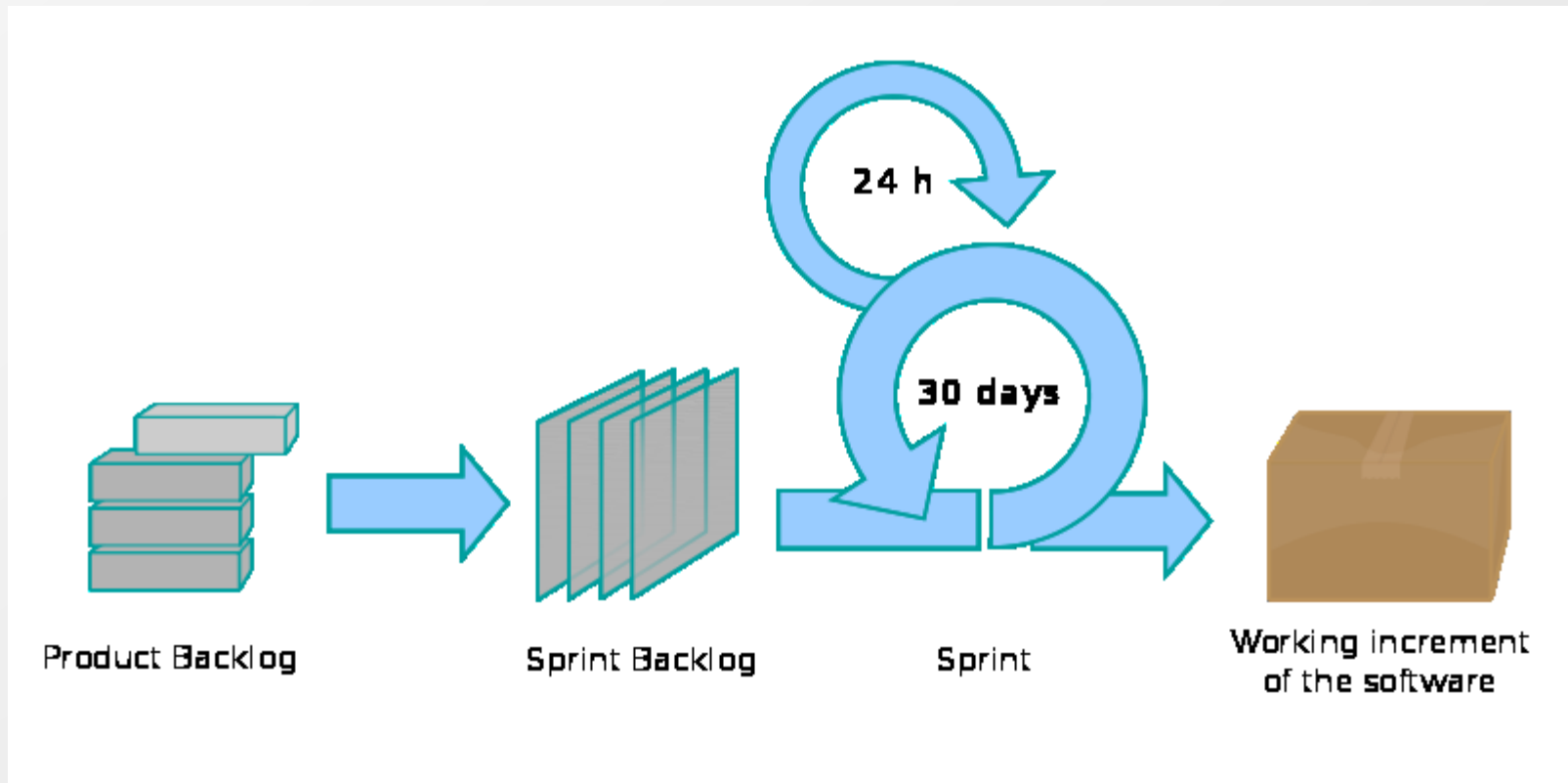
Tailoring

- Method/process adaptation according to individual needs
 - Standards (ISO, CMMI)
 - Organizational rules
 - Customer requirements
 - Project size
 - Project complexity
 - Other project specifics

Scrum



Scrum



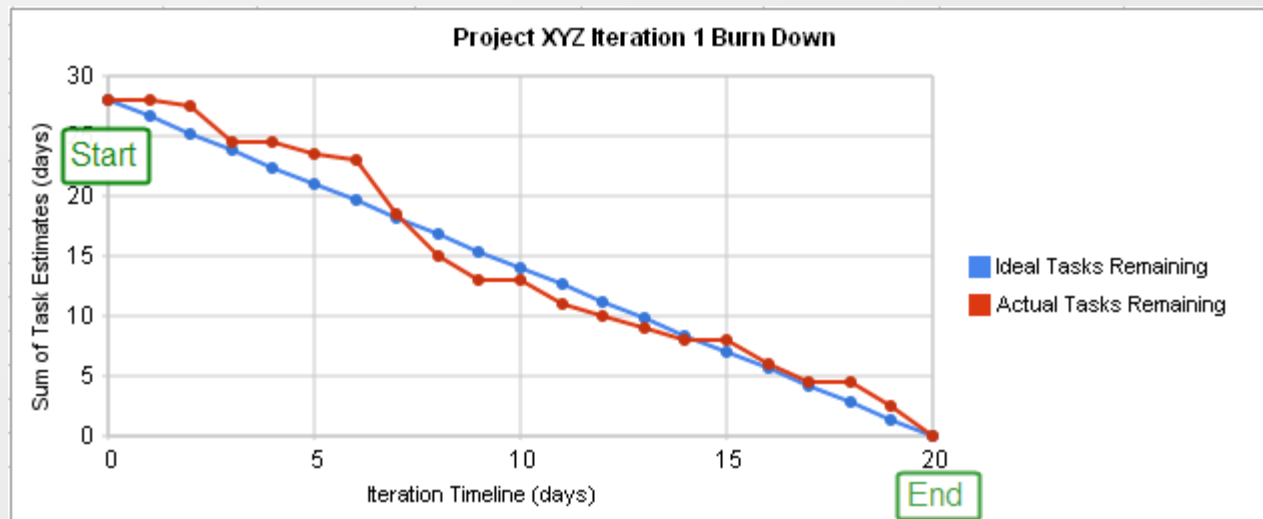
Scrum roles

- ❏ Pigs (committed)
 - ❏ Development team
 - ❏ self-organized
 - ❏ responsible for increment
 - ❏ Product owner
 - ❏ represents customer
 - ❏ responsible for results
 - ❏ ScrumMaster
 - ❏ servant-leader
 - ❏ responsible for process
- ❏ Chickens (involved)
 - ❏ Managers
 - ❏ Stakeholders

A Pig and a Chicken are walking down the road. The Chicken says, "Hey Pig, I was thinking we should open a restaurant!". Pig replies, "Hm, maybe, what would we call it?". The Chicken responds, "How about 'ham-n-eggs'?". The Pig thinks for a moment and says, "No thanks. I'd be committed, but you'd only be involved!"

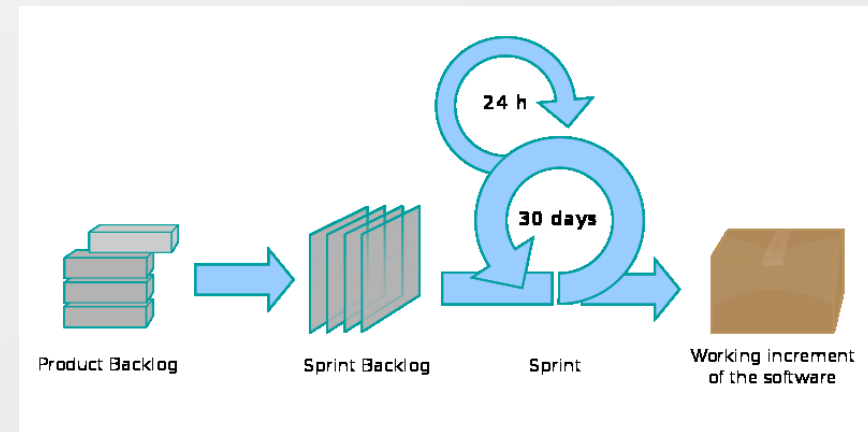
Scrum documents

- Product backlog
- Sprint backlog
- Burn down chart



Scrum meetings

- Spring planning
 - Sprint backlog - features
 - Sprint goal
- Daily Scrum
 - Team synchronization
 - Burn down chart
- Sprint review
 - Product presentation
- Sprint retrospective
 - Possible improvements identification

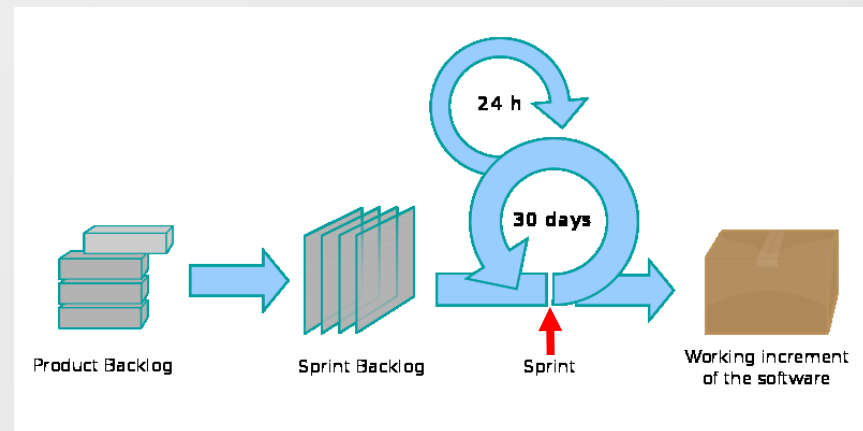


Product backlog

- Prioritized list of requirements/user stories
- Items granularity
 - High priority - fine
 - Medium priority - medium grained
 - Low priority - coarse grained
- User story
 - Who, what, why
 - As a ... I want ... because ...
 - Definition of done

Sprint planning

- Tasks from highest priority product backlog items
- Sprint backlog
 - Tasks
 - Effort
 - Team capacity
 - Sprint goal

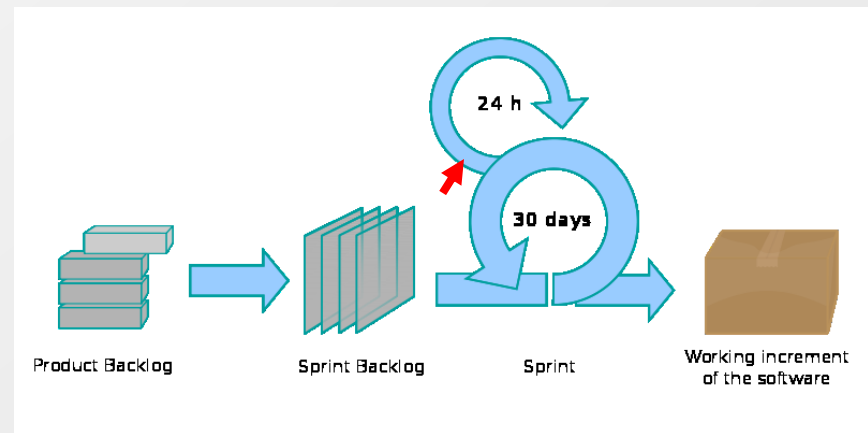


Daily Scrum

- Stand up
- Up to 15 minutes

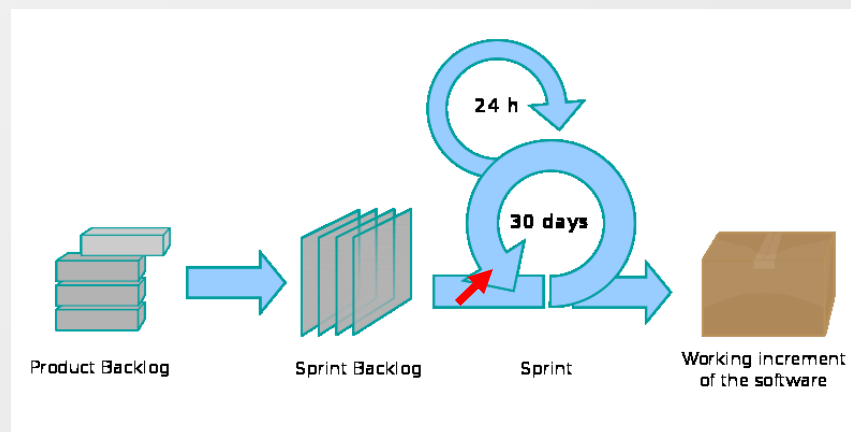
➤ Questions

- What have you done since the last meeting?
- What you will do till the next meeting?
- Do you have any impediments?



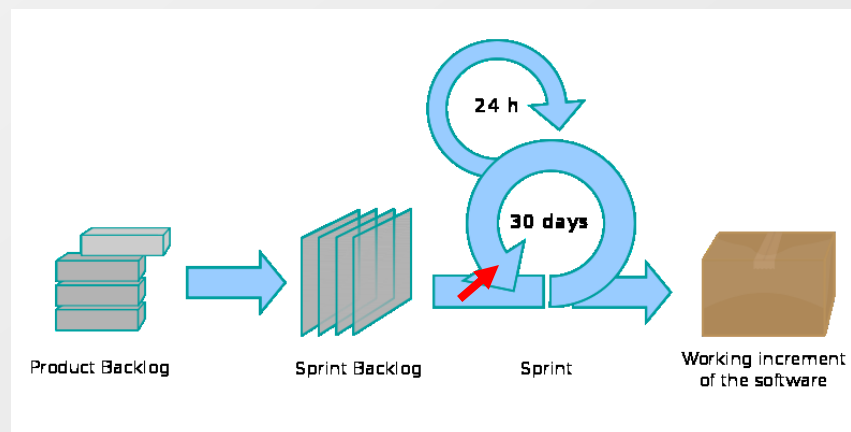
Sprint review

- Presentation of sprint results
 - Feedback from Product Owner
 - Product owner accepts or rejects them
- Makes project status transparent

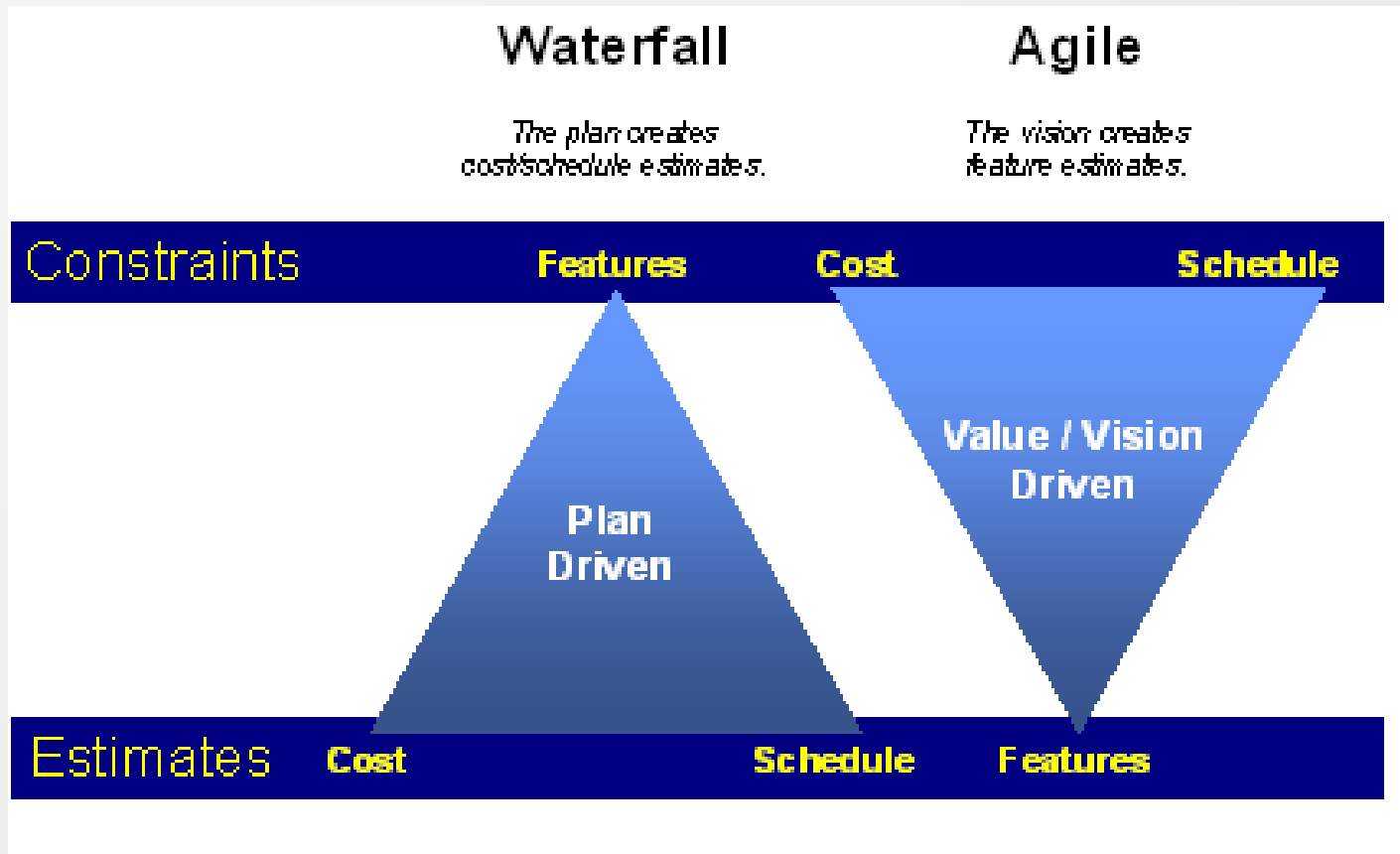


Sprint retrospective

- Correct dysfunctional behavior
- Lessons learned



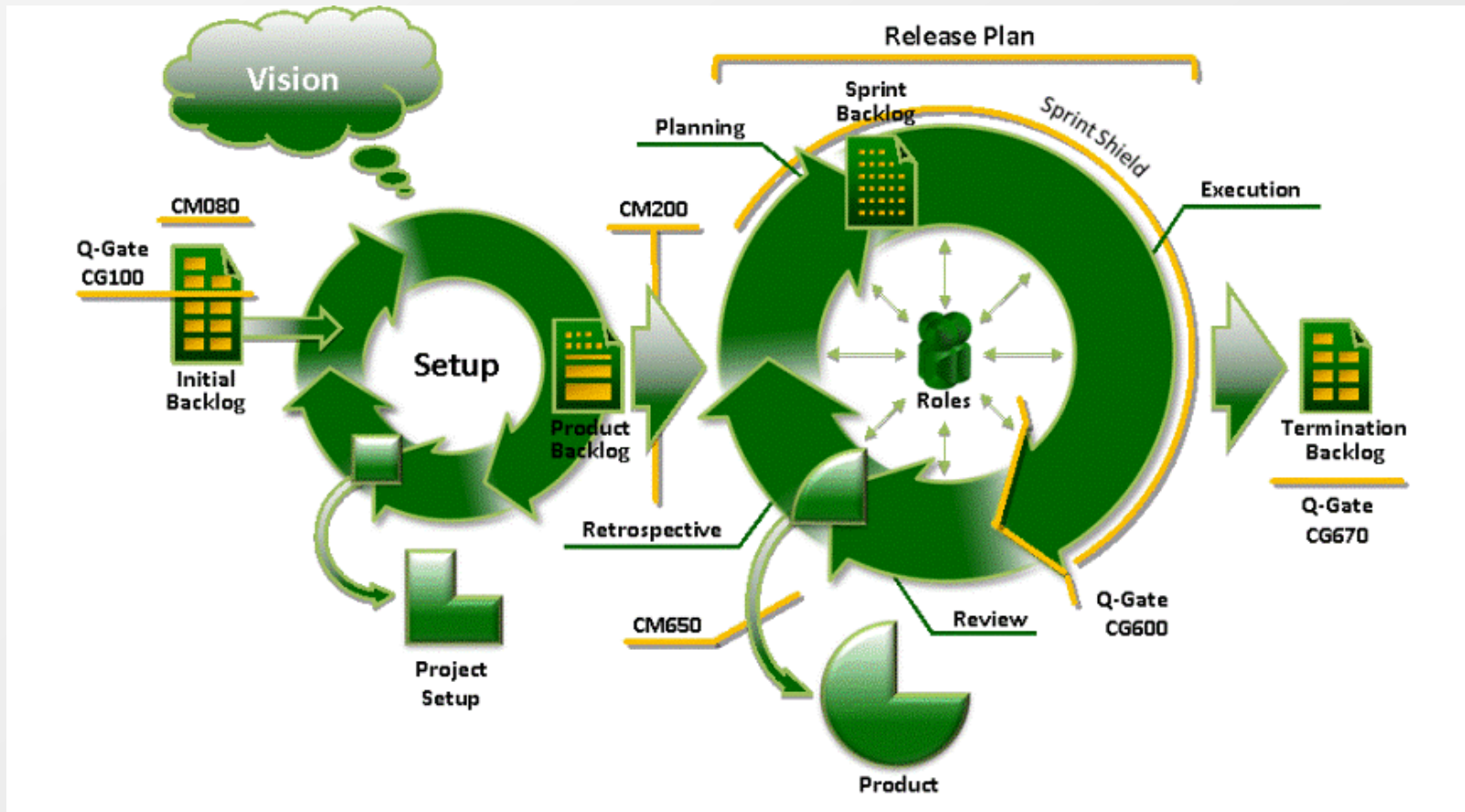
Project management triangle



Scrum and Extreme programming

- Pair programming
 - Two developers, driver and observer
- Test-driven development
 - First an automated test is created
 - Implement and refactor
- Continuous integration
 - Automated build and tests
- Collective code ownership
 - Everyone responsible for all the code

agileGDP



Next lessons

- 31.3. Cloud 1+2, integration of EIS (16:00 - 19:50, Libor)
- 7.4. Security, configuration management, deployment, maintenance (16:00 - 19:50, Libor)
- 14.4. Testing (Ales)
- 21.4. Avionics development and certifications (Radek)
- 28.4. Retrospective, final game (Ales)

- <https://honeywell.jobs.cz/absolventi-a-studenti/kalendar-akci/detail/article/den-otevrenych-dveri-v-honeywellu-pro-studenty/>

Děkuji za pozornost.

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