MASARYKOVA UNIVERZITA

PV213 Enterprise Information Systems in Practice

05 – Development process

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

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MINISTERSTVO ŠKOLSTVÍ, MLÁDEŽE A TĚLOVÝCHOVY

OP Vzdělávání pro konkurenceschopnost

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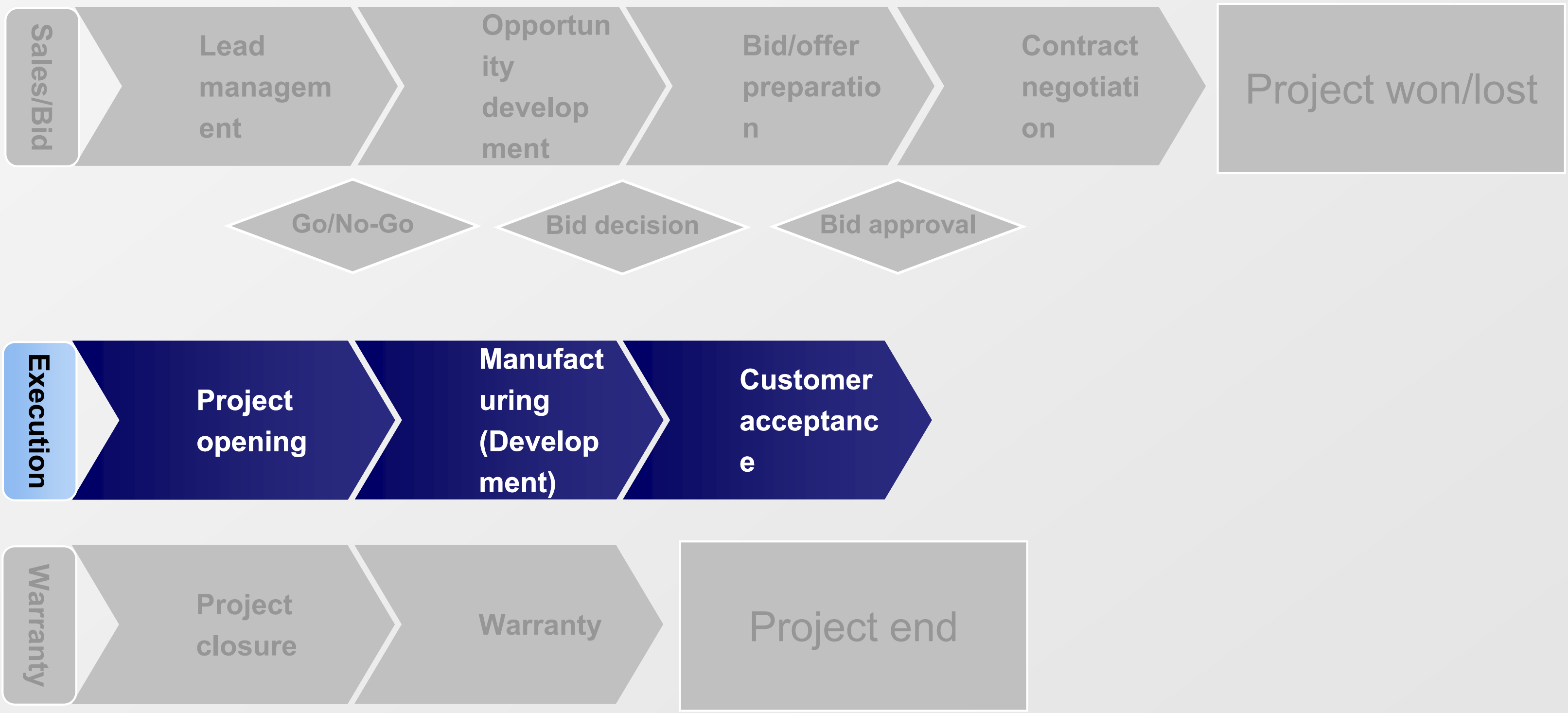
Content of this presentation

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

Software development process



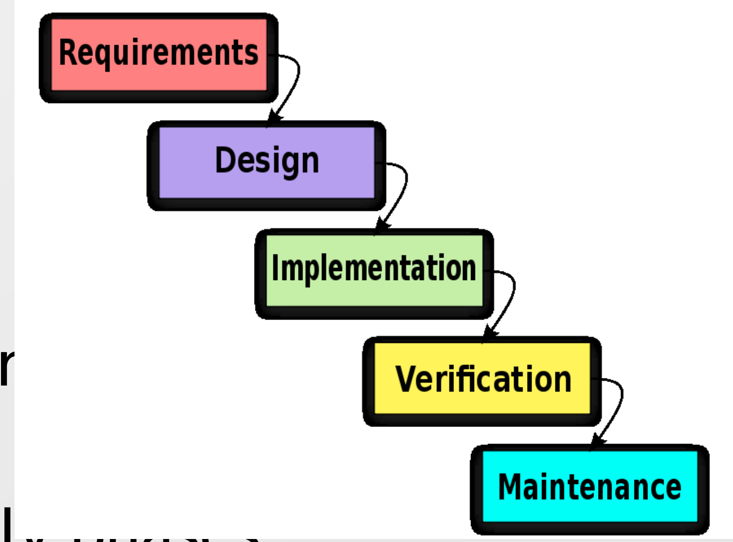
Software development method

- Defined development approach to streamline the development process

- Examples
  - Waterfall
  - Iterative and incremental
  - Agile
- Sometimes combination of models is used

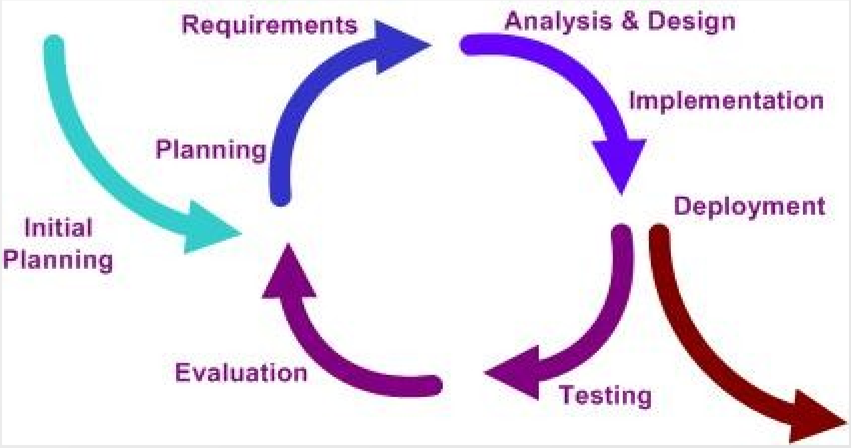
Waterfall model

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



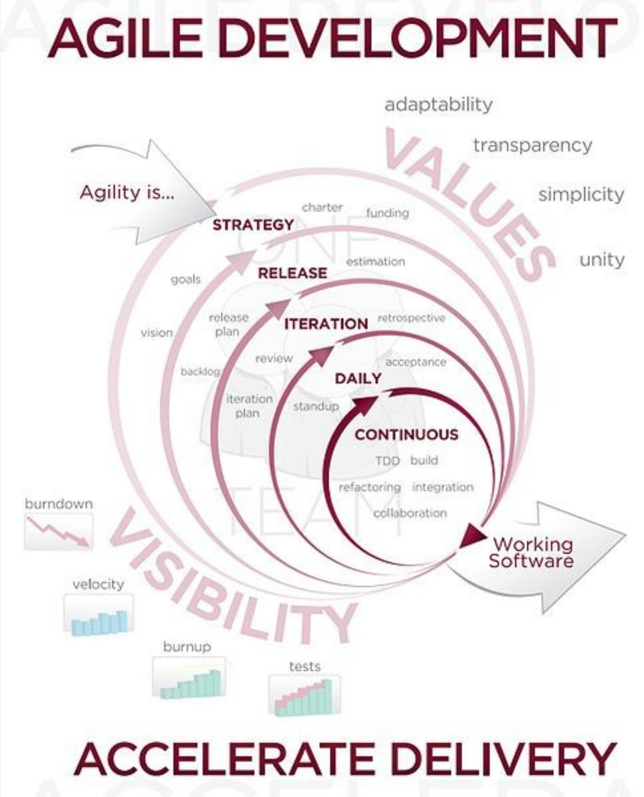
Iterative incremental development

- 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?

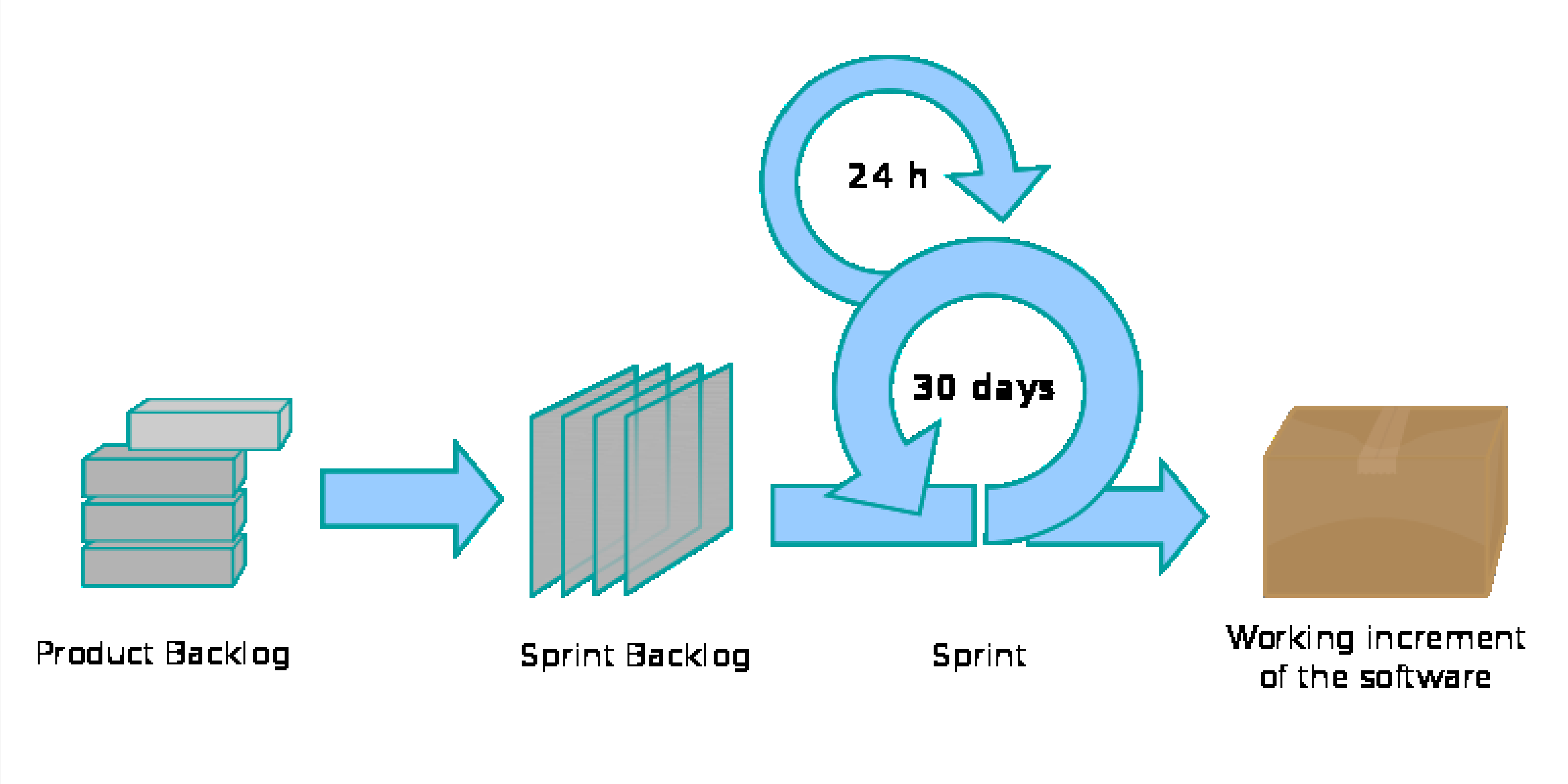
- Contracting
- Customer involvement
- Requirements
- Organization
- Development team and infrastructure
- Project size
- Safety and security aspects of the product

Tailoring

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

Scrum

Scrum


24 h
30 days
Product Backlog
Sprint Backlog
Sprint
Working increment
of the software

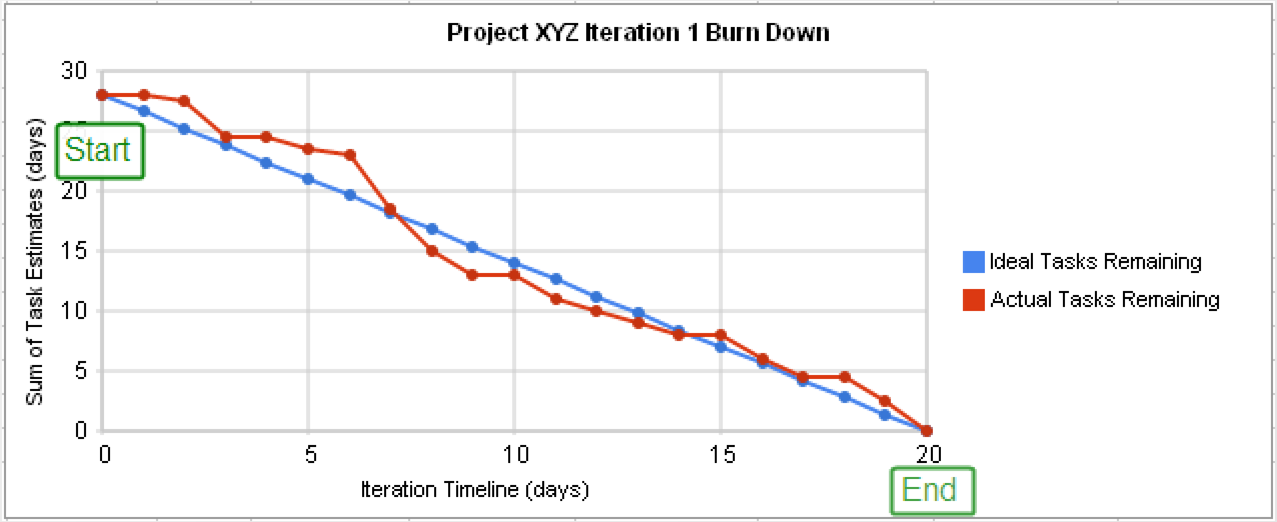
Scrum roles

- 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

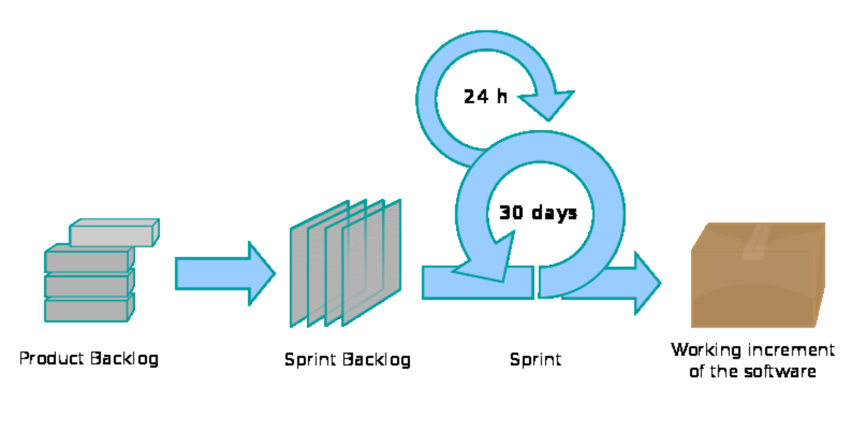
A Pig and a Chicken are walking down the road. The Chicken says, "Hey Pig, I was thinking we should open a restaurant!". Pig replies, "Hm, maybe, what would we call it?". The Chicken responds, "How about 'ham-n-eggs'?". The Pig thinks for a moment and says, "No thanks. I'd be committed, but you'd only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

Scrum documents

- Product backlog
- Sprint backlog
- Burn down chart



Scrum meetings



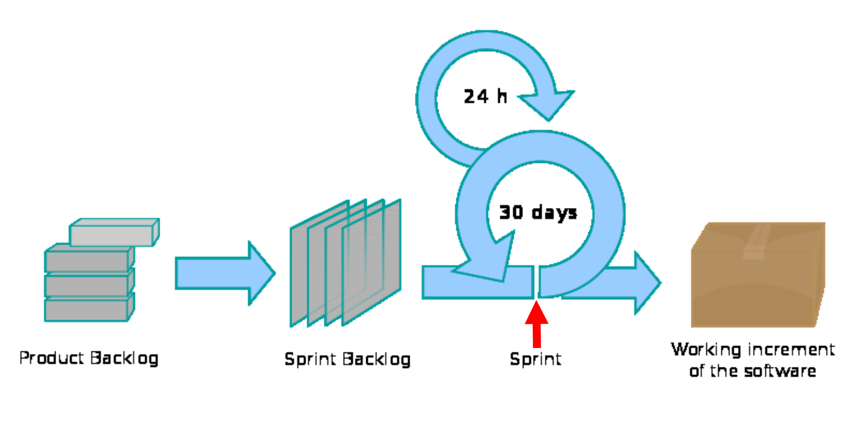
- Spring planning
  - Sprint backlog – features
  - Sprint goal
- Daily Scrum
  - Team synchronization
  - Burn down chart
- Sprint review
  - Product presentation
- Sprint retrospective
  - Possible improvements identification

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

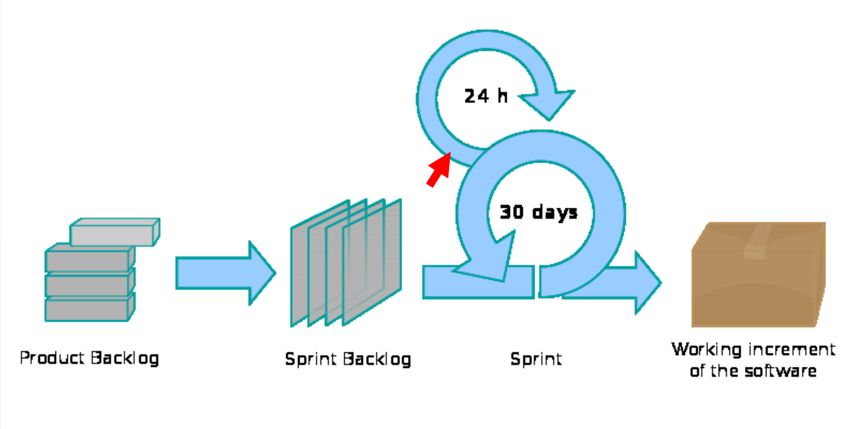
Sprint planning

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



Daily Scrum

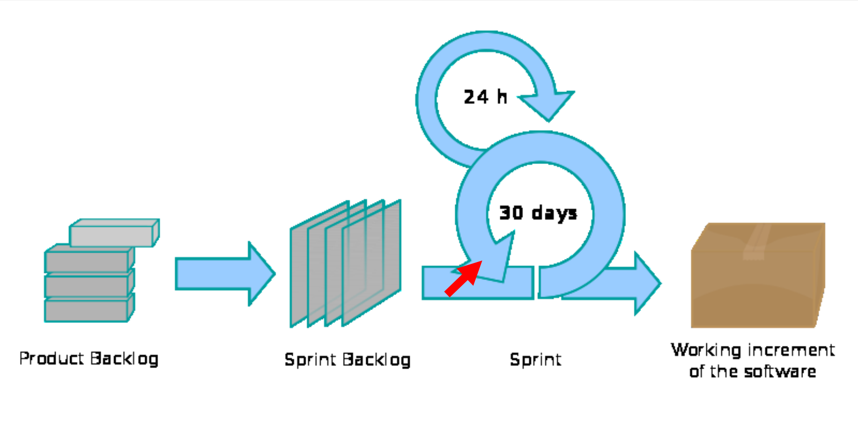
- Stand up
- Up to 15 minutes



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

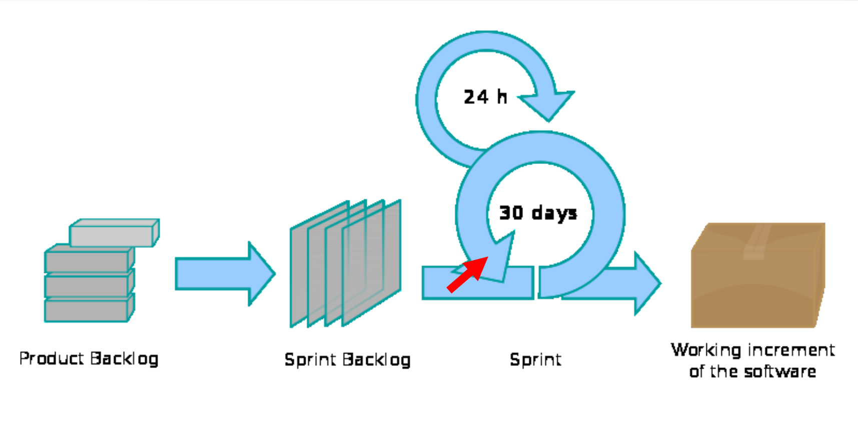
Sprint review

- 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



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

Děkuji za pozornost.

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