

AGILE SOFTWARE ENGINEERING:

AGILE MANIFESTO & SCRUM

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Lecture objectives

A historical overview of the agile manifesto and scrum

Knowledge about scrum roles, events, and artifacts

Skills in using scrum in a software project

Group exercises (8:15-10:15)

Exercise 1: Build your own Scrum (40%)

Exercise 2: Benefits and drawbacks of Scrum (20%)

- When is it a good idea to use Scrum?
- When is it better to use Waterfall?
- What are the benefits of Scrum?
- What are the drawbacks of Scrum or iterative and Incremental processes?

Exercise 3: Predictive versus adaptive planning and estimation of your semester project (40%)

- What does it mean that requirements in Scrum are emergent, and how is that similar or different to your semester project?
- How do we estimate in Scrum, and how do you estimate in your semester projects?
- Should your semester project be iterative (if yes, in how many iterations)?
- Should your semester project be incremental (if yes, in how many increments)?

Manifesto for Agile Software Development

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

That is, while there is value in the items on the right, we value the items on the left more.

What may be the problems these 4 values should solve?

We're losing the relay race

The... 'relay race' approach to product development...may conflict with the goals of maximum speed and flexibility. Instead a holistic or 'rugby' approach—where a team tries to go the distance as a unit, passing the ball back and forth—may better serve today's competitive requirements.

Hiroataka Takeuchi and Ikujiro Nonaka,
“The New New Product Development Game”,
Harvard Business Review, January 1986.



Scrum

Not an acronym, “A scrum is a **team pack** in Rugby, everybody in the pack acts together with everyone else to move the ball down the field”

A **small group** is responsible for **picking up the ball and moving it toward the goal.**



Scrum core concepts

It's all about respect, commitment, empowerment and being responsible

Separates two concerns

- In what sequence will work be done (PO)
- How much work will we commit to (Team)

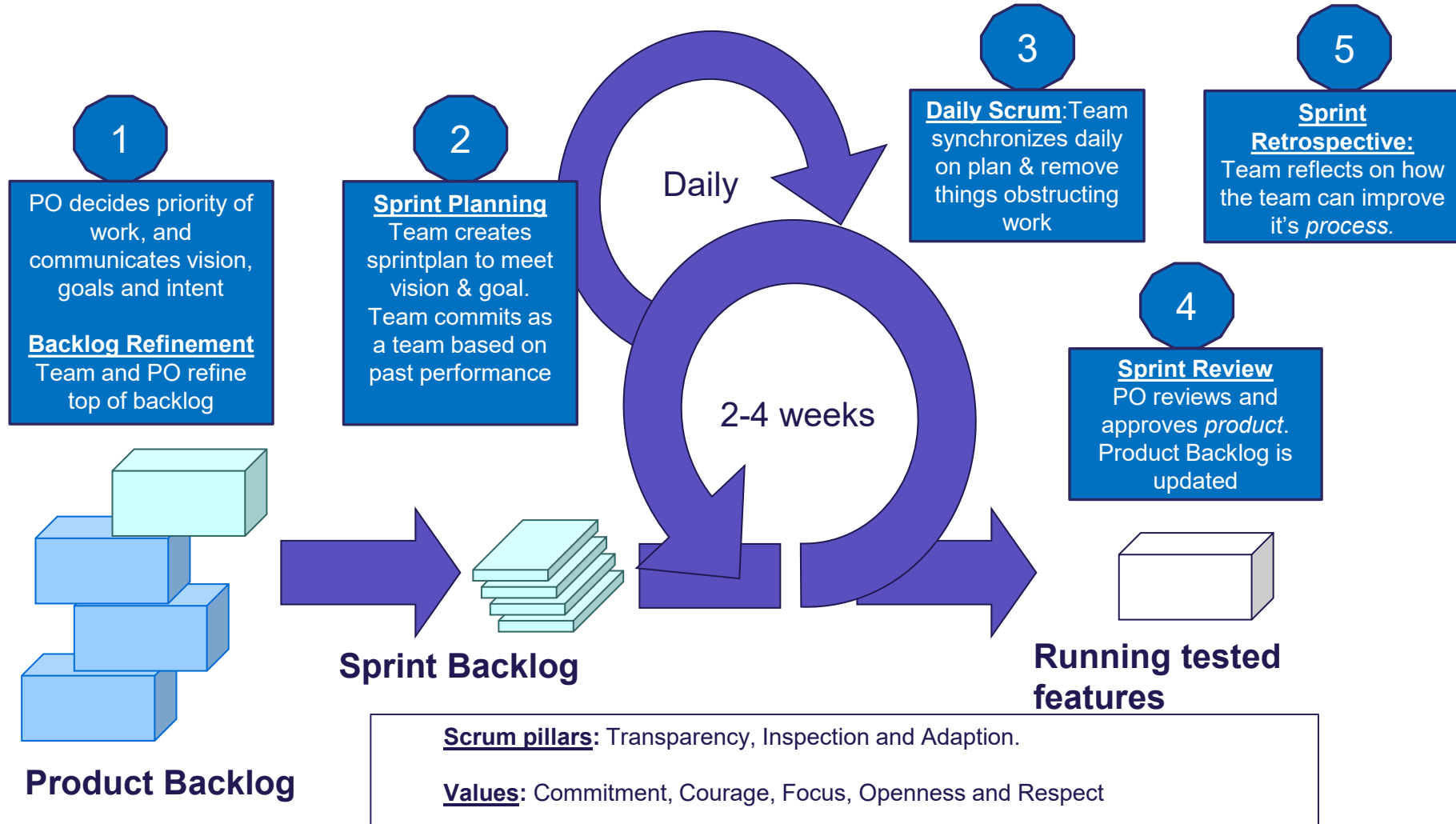
Culture of open honest communication

- Team player over individual players

Inspect and adapt

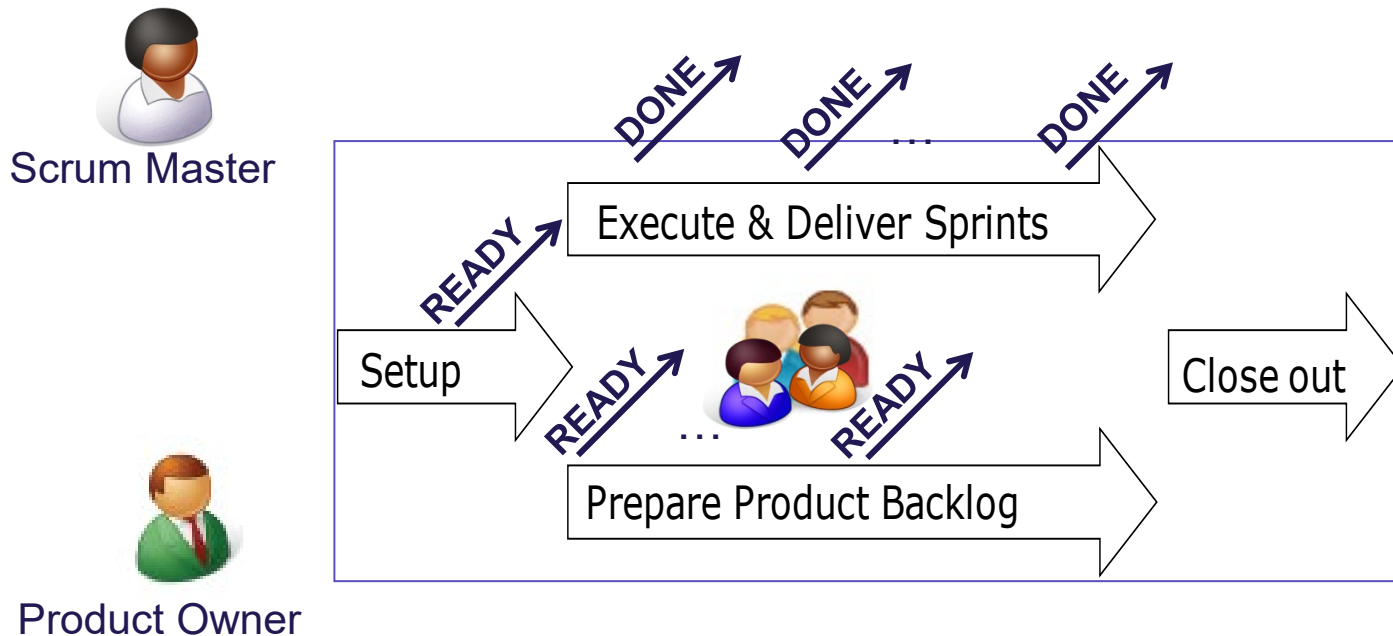
- More focus on goal/results than estimation precision or original plan

Scrum – Inspect & adapt based on transparency



Scrum has two concurrent tracks

Success depends on a balance in progress of the two tracks



When READY is well implemented a positive spiral emerge
When READY is ill implemented a negative spiral is started

Scrum Roles



Product Owner

- **Decision Maker: Order and content of Product Backlog**
 - Accepts or rejects work results
 - Responsible for *vision and profitability* of the product
 - Defines the features of the product, decides on release date and content - *release planning*.



Scrum Master

- **Facilitator of Scrum Process**
 - Ensures that the *Scrum process* is followed.
 - Enables close cooperation across all roles and functions
 - Removes barriers
 - Shields the team from external interferences
 - *NOT* a project manager



Team

- **Professionals who owns their own sprint plan**
 - Cross-functional, seven plus/minus two members
 - Selects the sprint goal and specifies work results
 - Has the right to do everything within the boundaries of the project guidelines to reach the iteration goal
 - Organizes itself and its work
 - Demos work results to the Product Owner

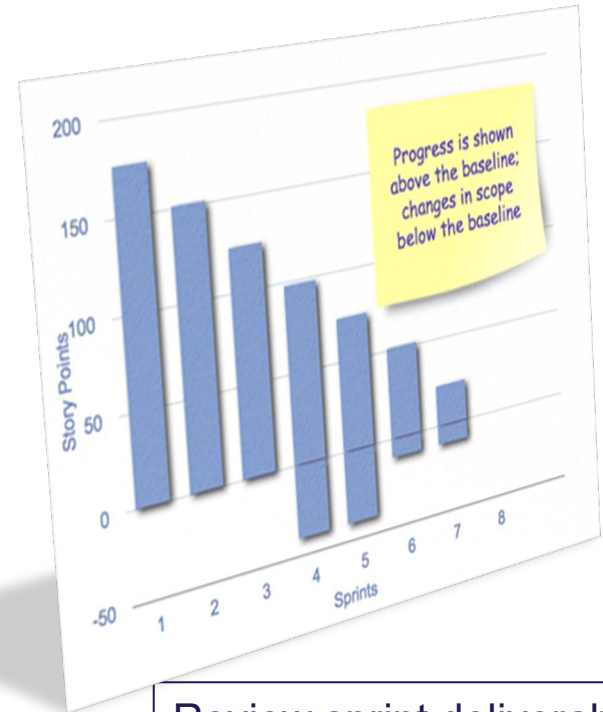
Scrum Product Owner activities



Customer

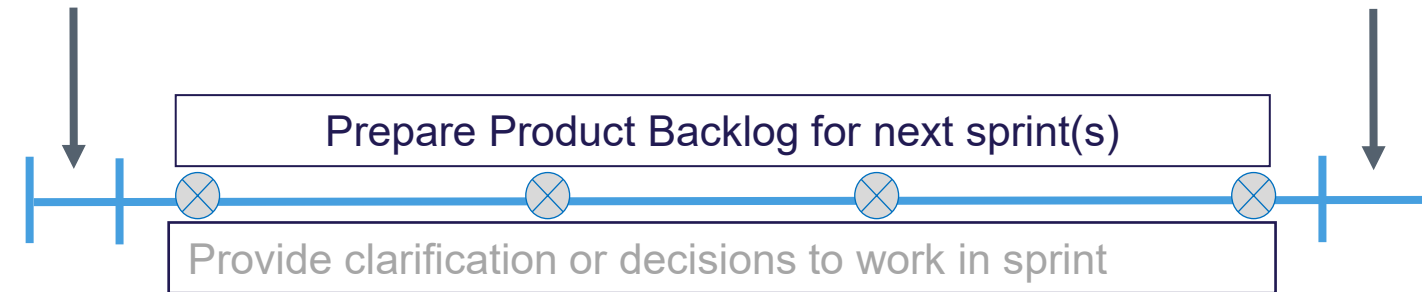


One person not a committee



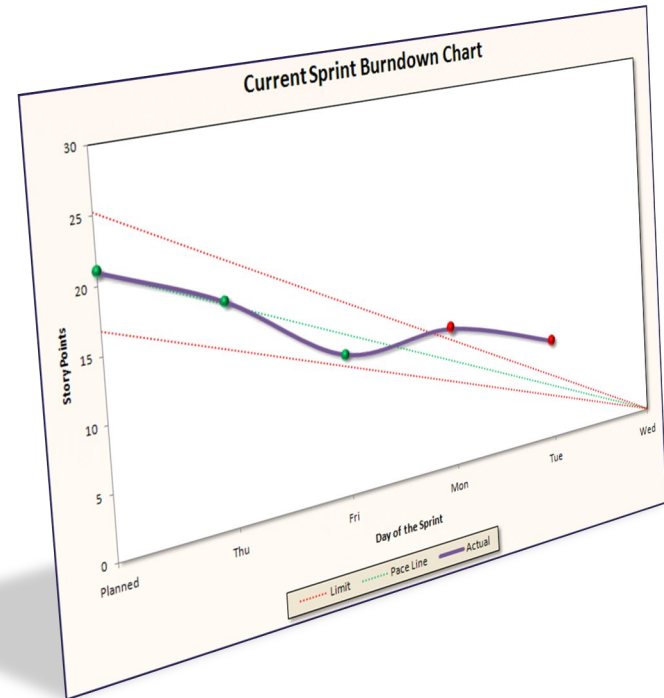
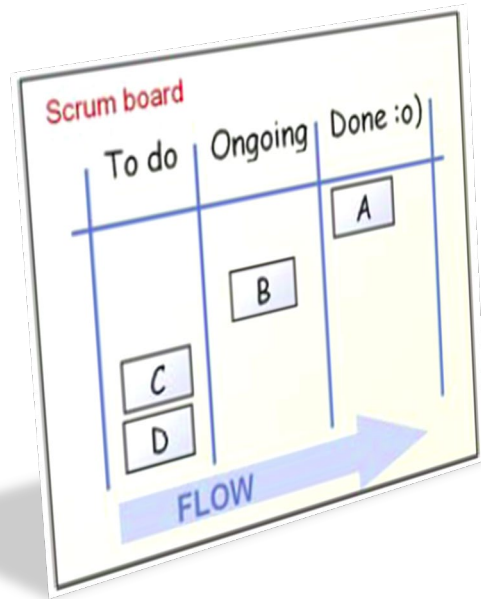
Prioritize Product Backlog

Review sprint deliverable



⊗ Refinement meetings

Scrum Master activities

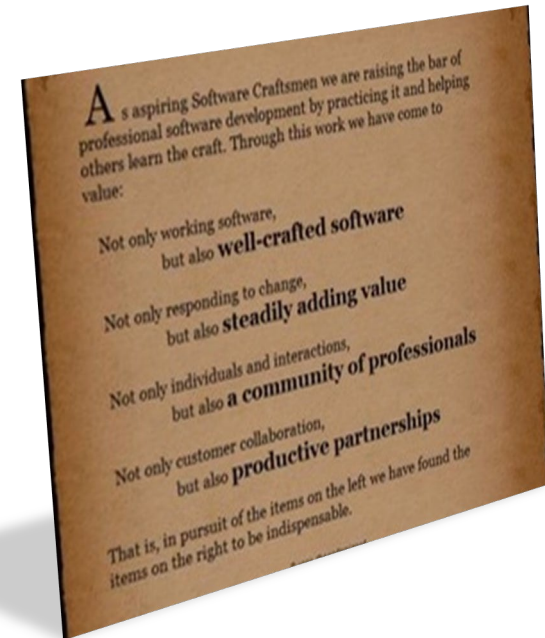


Facilitate Scrum meetings and coach development team and Product Owner



Remove impediments the team were unable to resolve
Protect team – help all to follow scrum process

Scrum Team activities



Sprint Planning

Sprint Review

Sprint Retro.

10% of team effort

Support Product Owner in clarification of work for future sprints

Deliver to sprint commitment

90% of team effort

Scrum

Concept	Definition
Development team	A self-organizing group of software developers, which should be 7 +/-2 people. They are responsible for developing the software and other essential project documents.
Potentially shippable product increment	The software increment that is delivered from a sprint. The idea is that this should be 'potentially shippable' which means that it is in a finished state and no further work, such as testing, is needed to incorporate it into the final product. In practice, this is not always achievable.
Product backlog	This is a list of 'to do' items which the Scrum team must tackle. They may be feature definitions for the software, software requirements, user stories or descriptions of supplementary tasks that are needed, such as architecture definition or user documentation.
Product owner	An individual (or possibly a small group) whose job is to identify product features or requirements, prioritize these for development and continuously review the product backlog to ensure that the project continues to meet critical business needs. The Product Owner can be a customer but might also be a product manager in a software company or other stakeholder representative.

Scrum, contd.

Concepts	Definition
Daily scrum	A daily meeting of the Scrum team that reviews progress and prioritizes work to be done that day. Ideally, this should be a short face-to-face meeting that includes the whole team.
Scrum Master	The Scrum Master is responsible for ensuring that the Scrum process is followed and guides the team in the effective use of Scrum. He or she is responsible for interfacing with the rest of the company and for ensuring that the Scrum team is not diverted by outside interference. The Scrum developers are adamant that the Scrum Master should not be thought of as a project manager. Others, however, may not always find it easy to see the difference.
Sprint	A development iteration. Sprints are usually 2-4 weeks long.
Velocity	An estimate of how much product backlog effort that a team can cover in a single sprint. Understanding a team's velocity helps them estimate what can be covered in a sprint and provides a basis for measuring improving performance.

Scrum – Other Techniques

1. Daily Scrum
 1. What did you do Yesterday?
 2. What will you do today?
 3. Any impediments making it harder to reach the sprint goal
2. Sprint Review (Product focus)
 1. Only work that meets Done-criteria is presented (no exceptions)
3. Sprint Retrospective (Process focus)
 1. Tune in (Say a color for how well our process was in last sprint)
 2. Timeline (place post-it notes with events (+/-) on timeline)
 3. Brainstorm (What to Keep, Stop, Try)
4. Many XP-techniques fit well into Scrum

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