Lecture 3
SSW-555
Scrum

Origin of Scrum

- Software managers needed a process to control software projects
- Plan-based methods assumed that the development process was predictable.
- Some projects required more adaptation than expected
- Defined versus Empirical processes

Assumptions of defined processes

System may be described by equations that predict response to stimulus or input

Variables that influence the process are well-understood. This may be predicted from the task and may be measured in the environment. Management consists of controlling and measuring these variables. You can use UML diagrams.

Customer Chaos Model

Many customers are asking developers for a lot of features.

Develops try to accommodate the loudest voices

This leads to chaos, less productivity, and low moral

Assumptions of empirical methods

- System cannot be described by equations that predict response to stimulus or input
- Cannot easily repeat the process from input to output
- Management consists of constantly monitoring and adapting

Scrum

- Methodology for managing development process and team organization
- Scrum roles: stakeholders and scrum team. There is the scrumMAster and the development team, product owner, internal stakeholders, and customers/users
- There is no individual manager
- There is always an organization chart for corporations. Corporate world will deviate from academia here.

Product Owner

- Represents the customer and customer’s needs
- Agile Principle #4: Business people and developers must work together daily throughout the project.
- Product visionary. What should the product do?What are the features? PRovides user stories
- Responsible for Return on Investment (ROI)
- Communicates with investors
- Has final say over product and releases
- Manages and maintains the product backlog of desired features
- Decides whether to release increments to users
- Is an active member of scrum master and team

Development Team

- Small, cross functional, self sufficient group

- 3-10 software developers
- Self-organizing team. Team chooses who does what.
- All in one location

Scrum Master

- Helps development team practice scrum
- Manages the scrum artifacts
- Has no authority over the team
- Does not make technical or business decisions
- Developers report to the team, not to the scrum master
- Protects the development team from outside interference
- Min surprises by maximizing communication
- Different from plan driven project manager (PM responsible for accountability and enforcement; scrum master is coach and collaborator)
- Different from PLan Driven IT Manager
    - IT managers make all the decisions and direct the team

Small start up one scrum team one project	**Mid sized company multiple scrum teams**	**Large multi national many scrum teams**
One scrum team one project		
Product owner: marketing sales director Dev team: 3 dev 1 tester mult roles Scrum master dev	Stakeholders sales account managers product owner Dev team 10-12 dev 4 testers	Stakeholders CIO CTOs VPs CFO Product owner product manager for each part Dev teams: mult teams of 10-12 dev 4 testers Scrum master

Backlogs

Product backlog accomplished

- All features needed in product or service
- Any stakeholder can add items including dev team
- May include non visible features like tech

Release backlog

- Subset of product backlog
- Defined by the product owner
- Features needed in next product release

Sprint Backlog

- Subset of release backlog
- Features to be completed in next sprint

Managing the project backlog

- **Detailed appropriately**
- **Emergent**

- **Estimated**
- **Prioritized**
- Develops should deliver the highest priority items in next spring

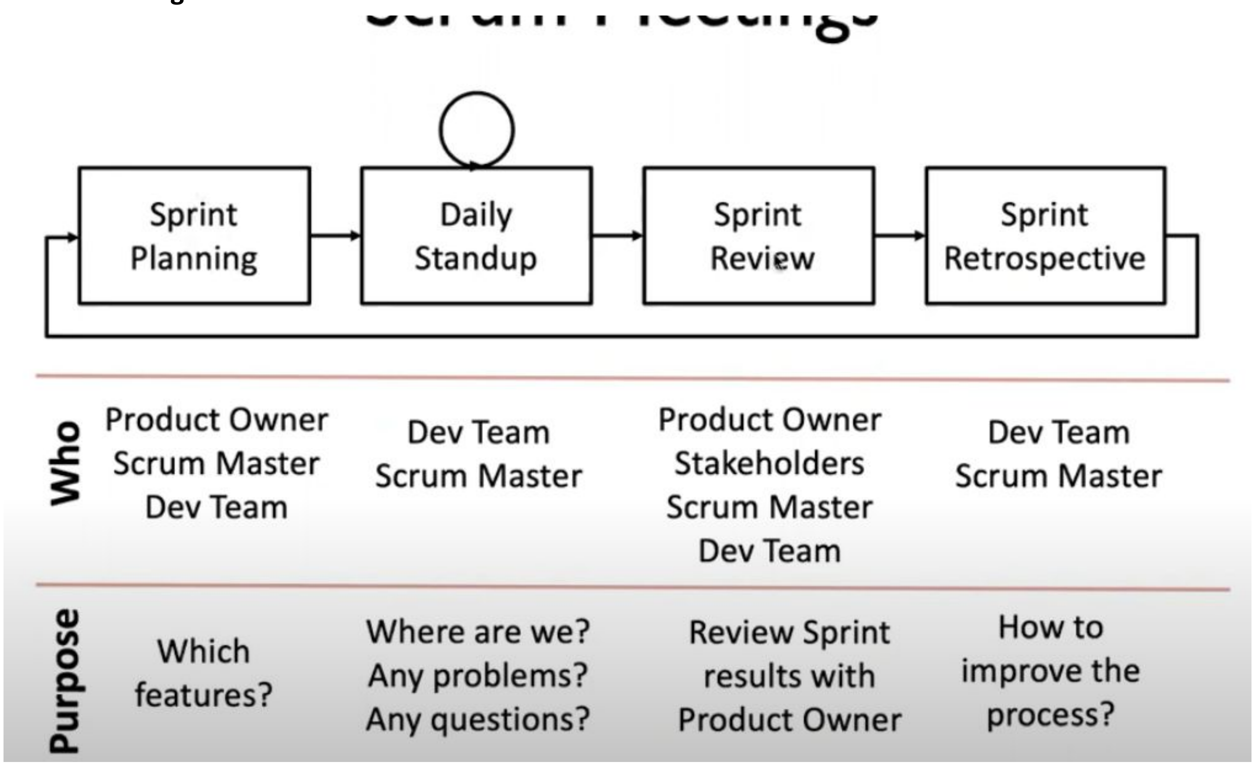
Grooming the Product Backlog

3 tasks

1. Creating and refining anyone can suggest items
2. Prioritizing items by the product owner
3. Estimating items from developers

Sprints are usually 2-4 weeks and it can be 1 week or more than 4 weeks

Scrum Meetings



	Sprint Planning	Daily Standup	Sprint Review	Sprint Retrospective
Who	Product Owner Scrum Master Dev Team	Dev Team Scrum Master	Product Owner Stakeholders Scrum Master Dev Team	Dev Team Scrum Master
Purpose	Which features?	Where are we? Any problems? Any questions?	Review Sprint results with Product Owner	How to improve the process?

Sprint Planning

Define sprint backlog

1. Product owner identifies needed features
2. Developers identify tasks required to deliver features
3. Developers develop a task list
4. Developers compute time needed to complete a task

How do we know its done?

Definition of done: everyone must agree on what it means for a backlog item to be done

This might depend on what the larger org expects from items

Daily standup meeting

Just the tech guys. Scrum master and dev team. Features and priorities are locked for duration of spring

Team meets daily to discuss progress

Need to monitor progress and adapt to changes

Sprint Review Meeting

Product owner, stakeholders, dev team, scrum master

Demonstrate features implemented during the sprint for the customer

Review progress

Reflect on sprint and brainstorm and plan for next sprint

Sprint Retrospective Meeting

Reflect on process

Improve the process and what is next?

Sprint Artifacts

Product/Release/Spring backlog

Backlogs - tracking progress

Burn Down Chart

Graphical view of accomplishments and remaining work

Maintained by development team

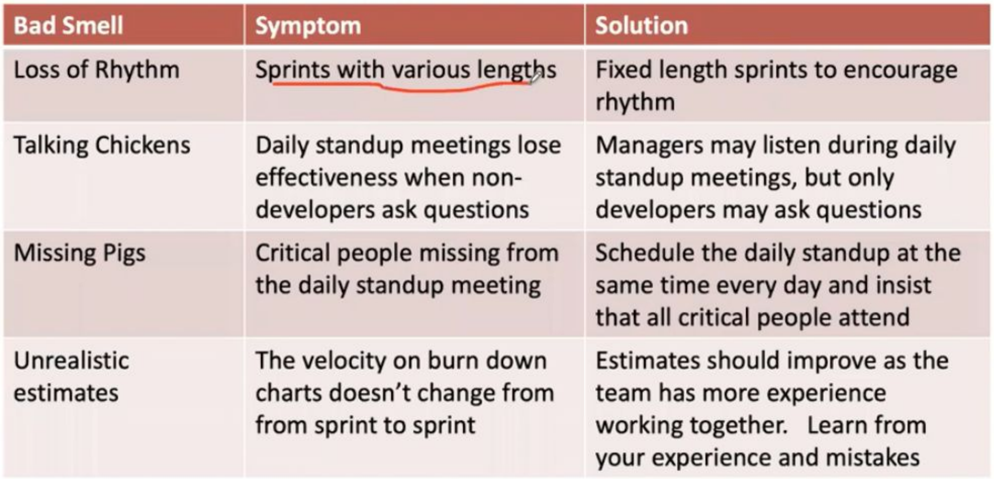
May show estimated and actual values

Slope of line is velocity

Used to predict the end of project and is an estimate when all features will be complete

What could go wrong?

- Individuals and interactions over processes and tools
- Working software over comprehensive documentation
- These are great in theory but it is not possible in the corporate world



Bad Smell	Symptom	Solution
Loss of Rhythm	Sprints with various lengths	Fixed length sprints to encourage rhythm
Talking Chickens	Daily standup meetings lose effectiveness when non-developers ask questions	Managers may listen during daily standup meetings, but only developers may ask questions
Missing Pigs	Critical people missing from the daily standup meeting	Schedule the daily standup at the same time every day and insist that all critical people attend
Unrealistic estimates	The velocity on burn down charts doesn't change from from sprint to sprint	Estimates should improve as the team has more experience working together. Learn from your experience and mistakes