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Information Systems and Technology Management

INFS2603 Lecture Series S2 2018

Week 09: Agile SCRUM I

Note: Presentation adapted from: Mike Cohn | www.mountaingoatsoftware.com

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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."

Hirotaka Takeuchi and Ikujiro Nonaka, "The New New Product Development Game", *Harvard Business Review*, January 1986.

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The Agile Manifesto–a statement of values

Individuals and interactions	over	Process and tools
Working software	over	Comprehensive documentation
Customer collaboration	over	Contract negotiation
Responding to change	over	Following a plan

Source: www.agilemanifesto.org

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Agile Approaches

- **Scrum**
- Extreme Programming (XP)
- Kanban
- Crystal
- Dynamic Systems Development Method (DSDM)
- Agile Unified Process (AUP)
- Feature Driven Development
- Adaptive Software Development

Scrum in 100 words

- Scrum is an agile process that allows us to focus on delivering the **highest business value** in the **shortest time.**
- It allows us to rapidly and repeatedly inspect actual working software (every two weeks to one month).
- The business sets the priorities. Teams self-organize to determine the best way to deliver the highest priority features.
- Every two weeks to a month anyone can see real working software and decide to release it as is or continue to enhance it for another sprint.

Scrum has been used by:

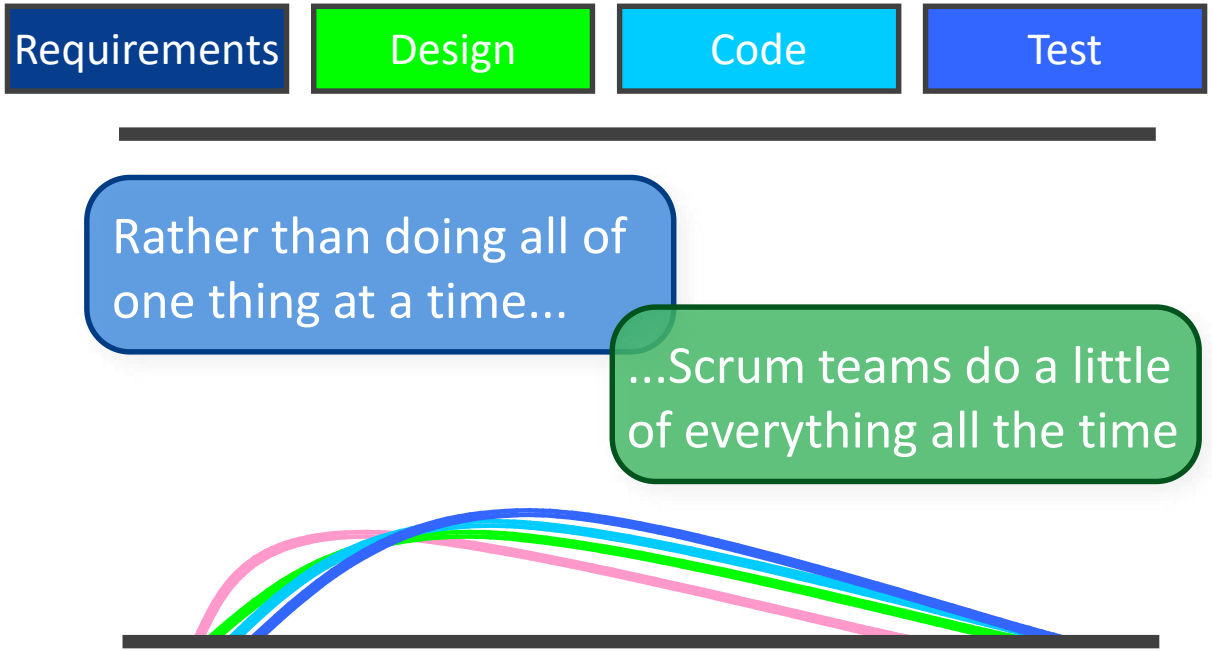
- Microsoft
- Yahoo
- Google
- Electronic Arts
- High Moon Studios
- **Lockheed Martin**
- Philips
- Siemens
- Nokia
- Capital One
- BBC
- Intuit
- Nielsen Media
- First American Real Estate
- BMC Software
- Ipswitch
- John Deere
- Lexis Nexis
- Sabre
- Salesforce.com
- Time Warner
- Turner Broadcasting
- Oce

Scrum has been used for:

- Commercial software
- In-house development
- Contract development
- **Fixed-price projects**
- Financial applications
- ISO 9001-certified applications
- Embedded systems
- **24x7 systems with 99.999% uptime requirements**
- the Joint Strike Fighter

- Video game development
- FDA-approved, life-critical systems
- **Satellite-control software**
- Websites
- Handheld software
- Mobile phones
- Network switching applications
- ISV applications
- Some of the largest applications in use

Sequential (Waterfall) vs. Overlapping development



Source: "The New New Product Development Game" by Takeuchi and Nonaka. *Harvard Business Review,* January 1986.

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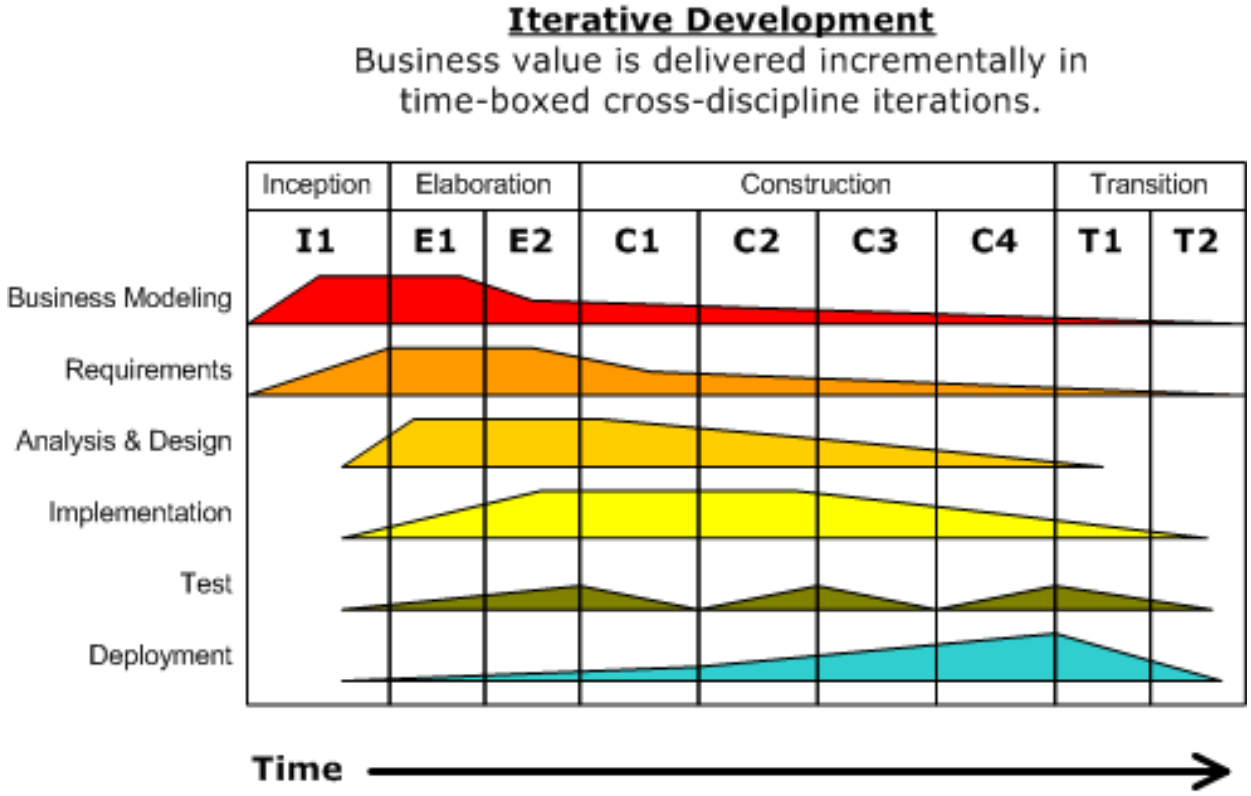
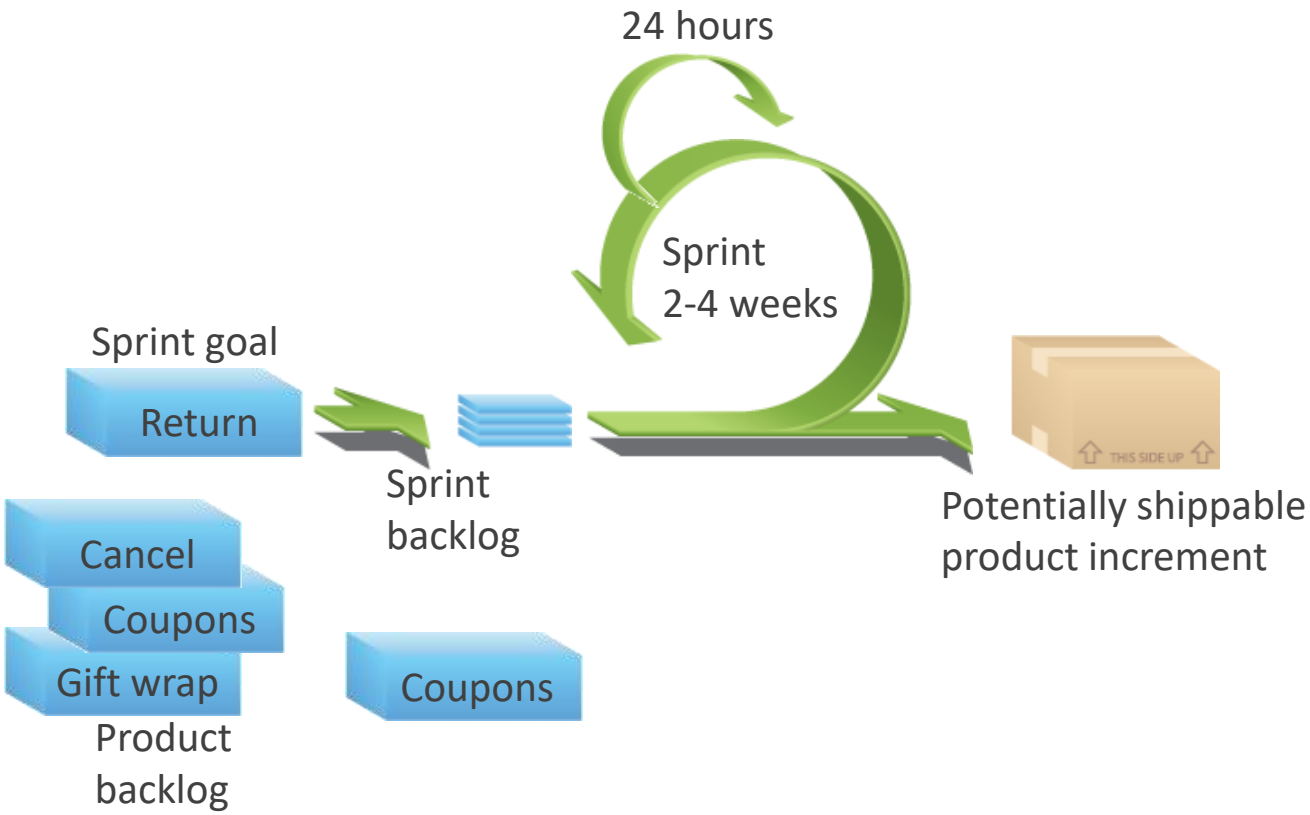
But wait…I thought we had this covered in Unified Process?



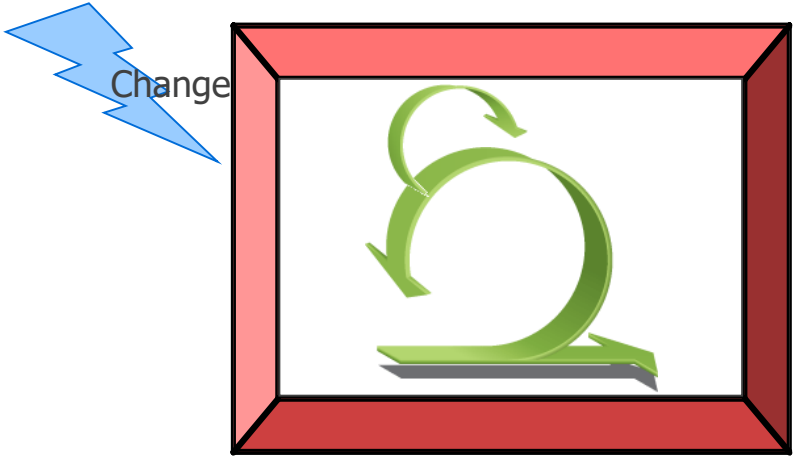
Sprints

- Scrum projects make progress in a series of “sprints”
- Analogous to Extreme Programming iterations
- Typical duration is 2–4 weeks or **a calendar month at most**
- A **constant duration** leads to a **better rhythm**
- Product is designed, coded, and tested during the sprint

Scrum


24 hours
Sprint
2-4 weeks
Sprint goal
Return
Cancel
Coupons
Gift wrap
Product
backlog
Sprint
backlog
Coupons
THIS SIDE UP
Potentially shippable
product increment

No changes during a sprint



Plan sprint durations around how long you can commit to keeping change out of the sprint

Scrum framework

Roles

- Product owner
- ScrumMaster
- Team

Ceremonies

- Sprint planning
- Sprint review
- Sprint retrospective
- Daily scrum meeting

Artifacts

- Product backlog
- Sprint backlog
- Burndown charts

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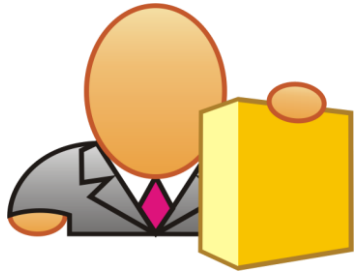
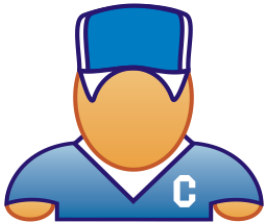
The Product owner



- The Visionary
- Define the features of the product
- Decide on release date and content
- Be responsible for the **profitability of the product** (ROI)
- Prioritize features according to market value
- Adjust features and priority every iteration, as needed
- **Accept or reject** work results

The Scrum Master

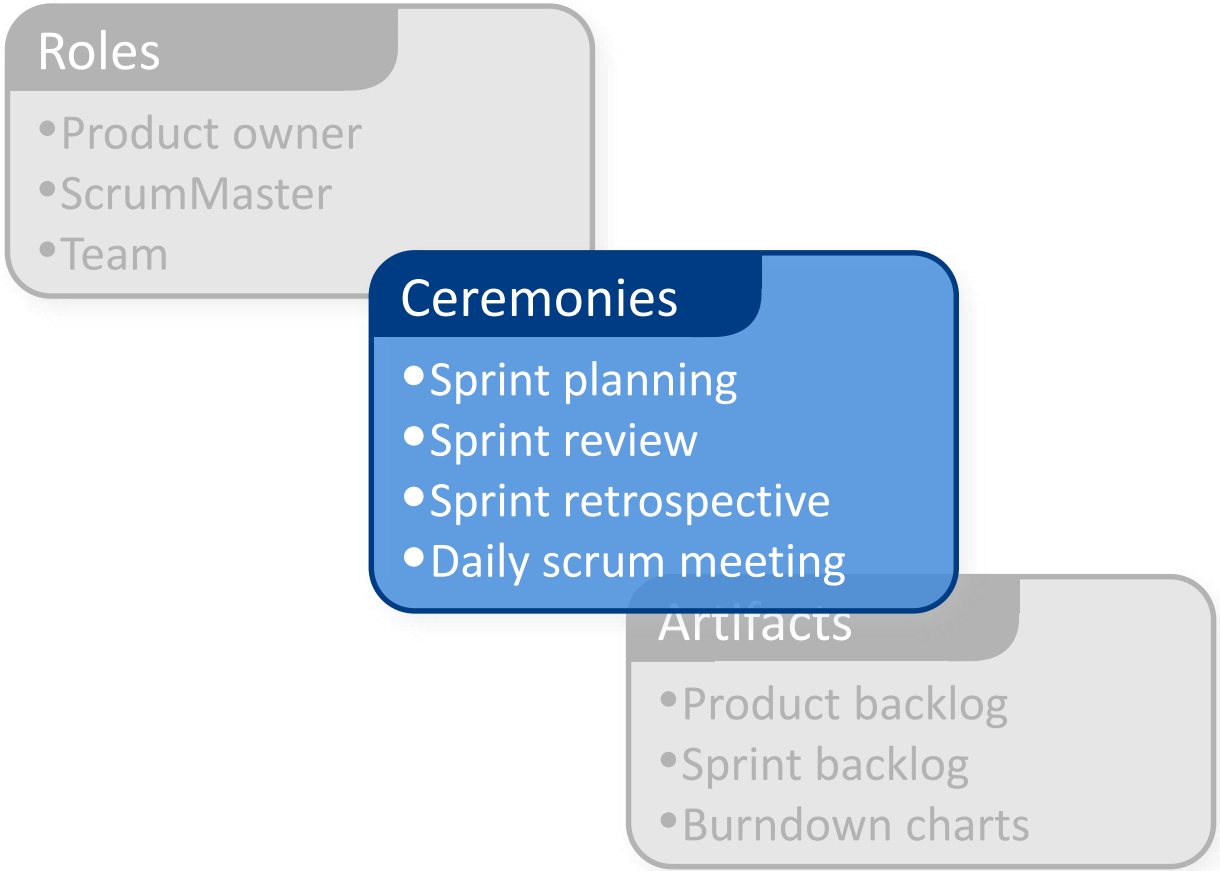


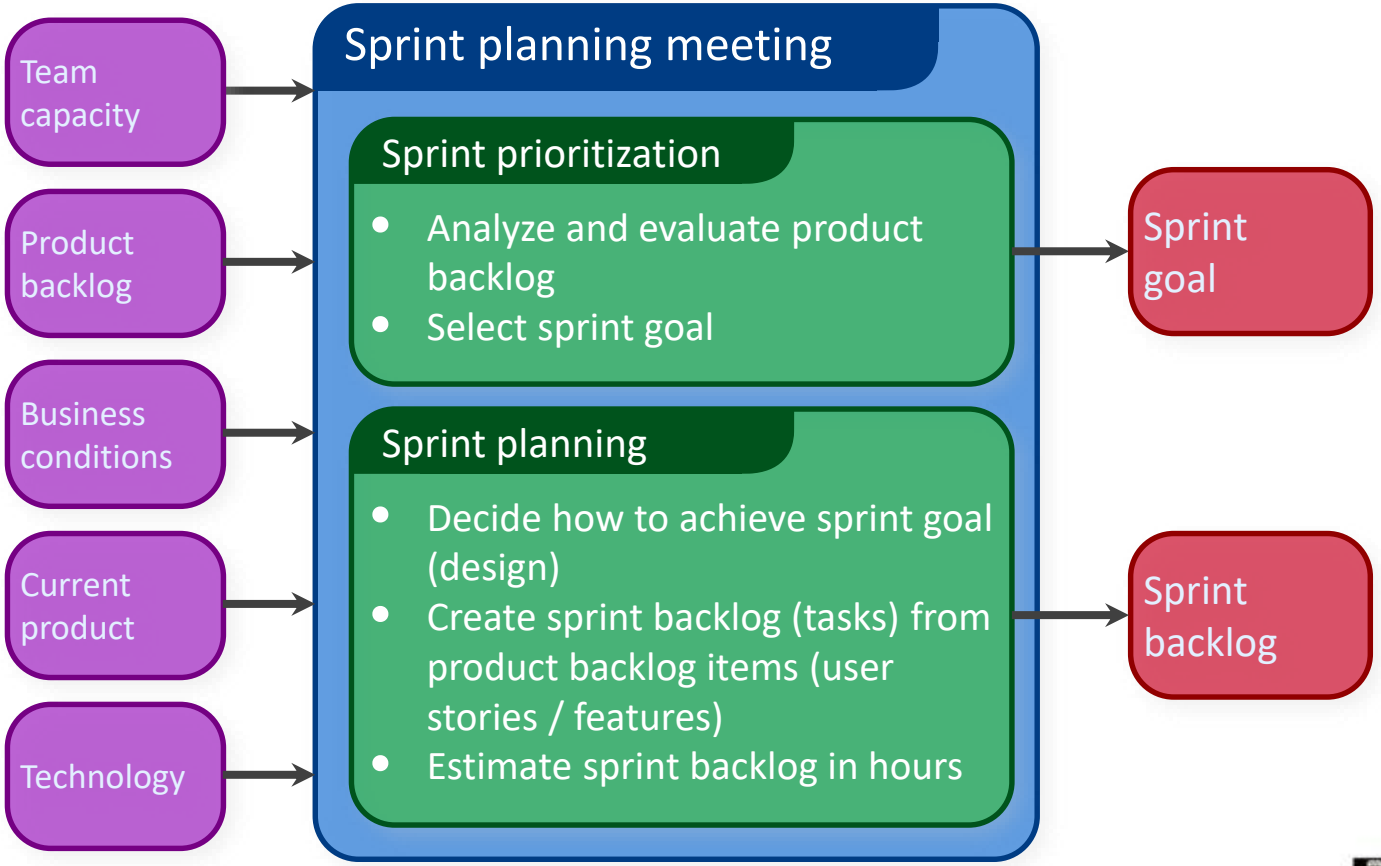
- The Servant Leader
- Represents management to the project
- Responsible for enacting Scrum values and practices
- **Removes impediments**
- Ensure that the team is **fully functional and productive**
- Enable close cooperation across all roles and functions
- **Shield the team** from external interferences

The Team

- Typically 5-9 people
- **Cross-functional (?) teams**
- Members should be **full-time**
  - May be exceptions (e.g., database administrator)
- Teams are **self-organizing (?)**
  - Ideally, **no titles** but rarely a possibility
- Membership should change only between sprints

Scrum framework




Team capacity
Product backlog
Business conditions
Current product
Technology
Sprint planning meeting
Sprint prioritization
Analyze and evaluate product backlog
Select sprint goal
Sprint planning
Decide how to achieve sprint goal (design)
Create sprint backlog (tasks) from product backlog items (user stories / features)
Estimate sprint backlog in hours
Sprint goal
Sprint backlog

Sprint planning

- Team selects items from the product backlog **they can commit to completing**
- Sprint backlog is created
  - Tasks are identified and **each is estimated (1-16 hours)**
  - Collaboratively, **not done** alone by the ScrumMaster
- High-level design is considered

As a vacation planner, I want to see photos of the hotels.

Code the middle tier (8 hours)
Code the user interface (4)
Write test fixtures (4)
Code the foo class (6)
Update performance tests (4)

The daily scrum

- Parameters
  - Daily
  - 15-minutes
  - Stand-up
- Not for problem solving
  - Whole world is invited
  - Only team members, Scrum Master, product owner, can talk
- Helps avoid other unnecessary meetings

Everyone answers 3 questions

1. What did you do yesterday?
2. What will you do today?
3. Is anything in your way?

These are not status for the ScrumMaster

*They are **commitments (?)** in front of peers*

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The sprint review

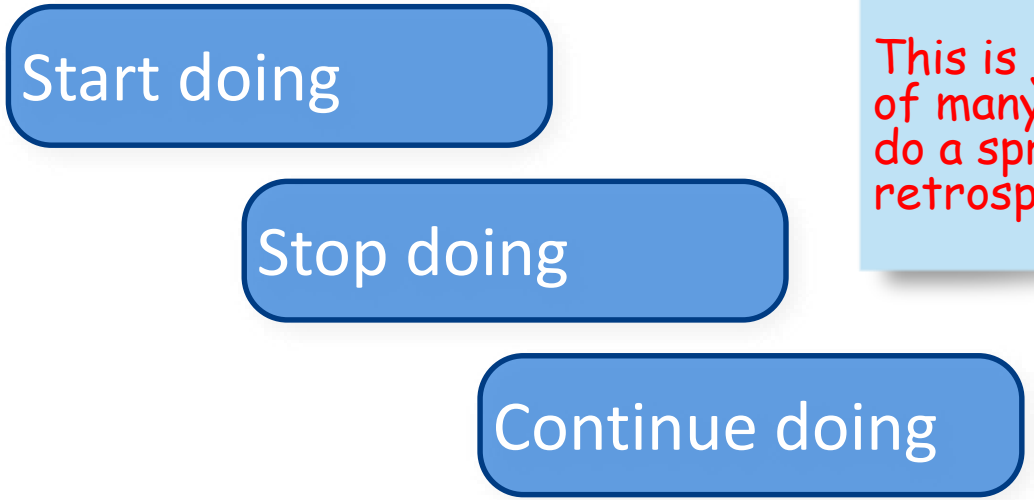
- Team presents **what it accomplished** during the sprint
- Typically takes the **form of a demo** of new features or underlying architecture
- Informal
  - 2-hour prep time rule
  - **No slides**
- Whole team participates
- Invite the world

Sprint retrospective

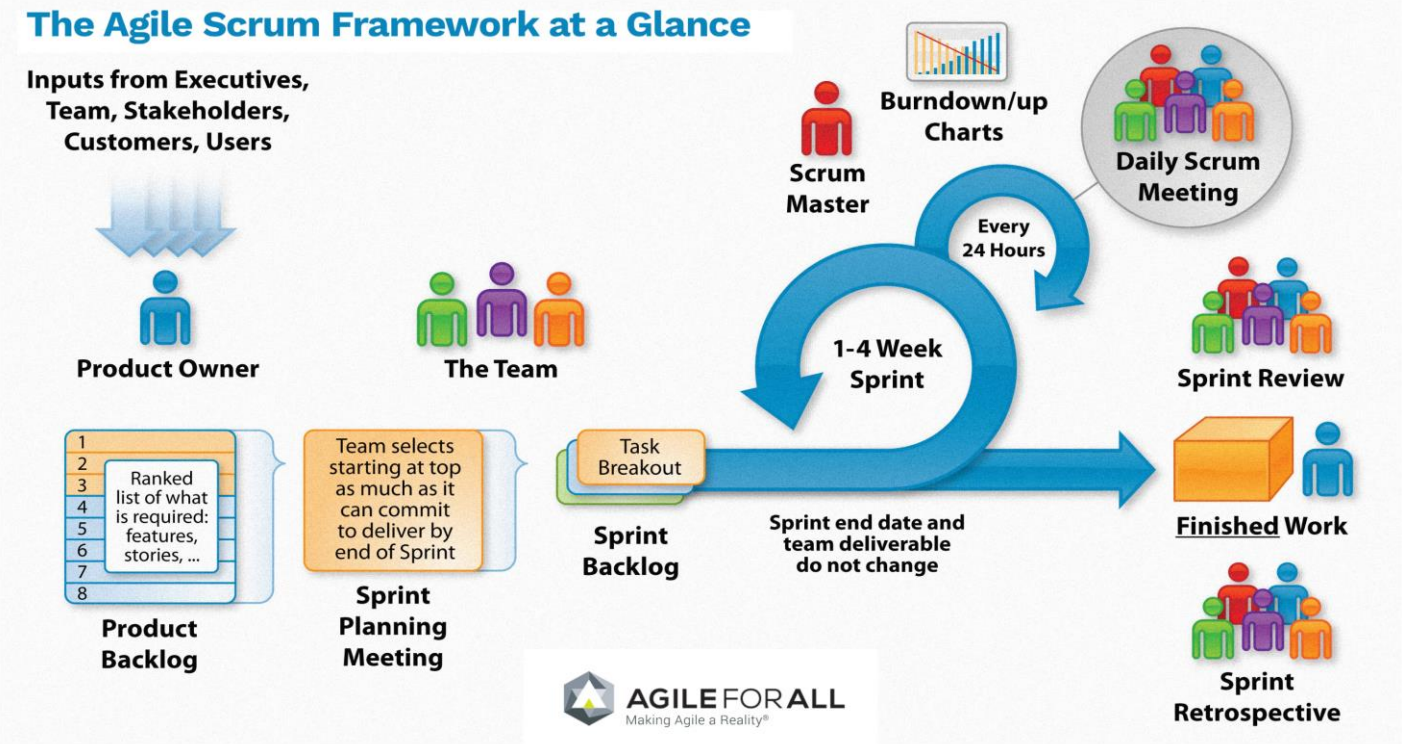
- Periodically take a look at **what is and is not working**
- Typically 15–30 minutes
- Done after every sprint
- Whole team participates
  - Scrum Master
  - Product owner
  - Team
  - Possibly customers and others

Start / Stop / Continue

- Whole team gathers and discusses what they’ d like to:



Putting it all together



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Implications for organisations

- If you want a radical/breakthrough innovation – go Agile
  - Need to create self-contained, autonomous units
- But there is a “cost” – are organisations prepared?
  - Changes to existing **mindsets**
  - Changes to existing **roles**
  - Changes to existing **routines**

The role of the Business Analyst in Agile (Scrum)

In Summary

- From Sequential to “iterative and incremental”
- Self-organizing teams
- Product progresses in a series of month-long “sprints”
- Requirements are captured as items in a list of “product backlog”
- Uses ***generative rules* (?)** to create an agile environment for delivering projects

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Questions?

You are encouraged to post your questions on the discussion forum.