

# Getting Agile with Scrum

Mike Cohn

6 December 2013

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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.”

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



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“Apple employees talk incessantly about what they call ‘deep collaboration’ or ‘cross-pollination’ or ‘concurrent engineering.’

“Essentially it means that products don’t pass from team to team. There aren’t discrete, sequential development stages. Instead, it’s simultaneous and organic.

“Products get worked on in parallel by all departments at once—design, hardware, software—in endless rounds of interdisciplinary design reviews.”



Source: “How Apple Does It,” *Time Magazine*,  
October 24, 2005 by Lev Grossman

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## Scrum has been used by:

- Microsoft
- Yahoo
- Google
- Electronic Arts
- IBM
- Lockheed Martin
- Philips
- Siemens
- Nokia
- Capital One
- BBC
- Intuit
- Apple
- Nielsen Media
- First American Corelogic
- Qualcomm
- Texas Instruments
- Salesforce.com
- John Deere
- Lexis Nexis
- Sabre
- Salesforce.com
- Time Warner
- Turner Broadcasting
- Océ



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# 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



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# Characteristics

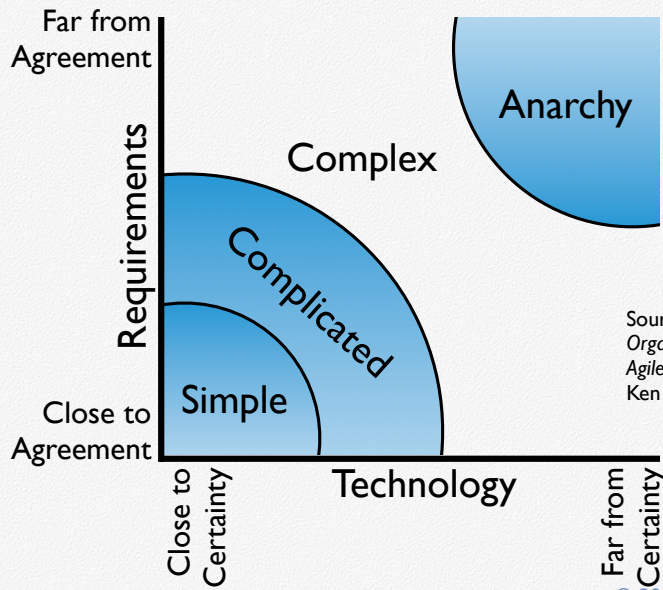
- Self-organizing teams
- Product progresses in a series of month-long “sprints”
- Requirements are captured as items in a list of “product backlog”
- No specific engineering practices prescribed
- Uses generative rules to create an agile environment for delivering projects
- One of the “agile processes”



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# Project noise level



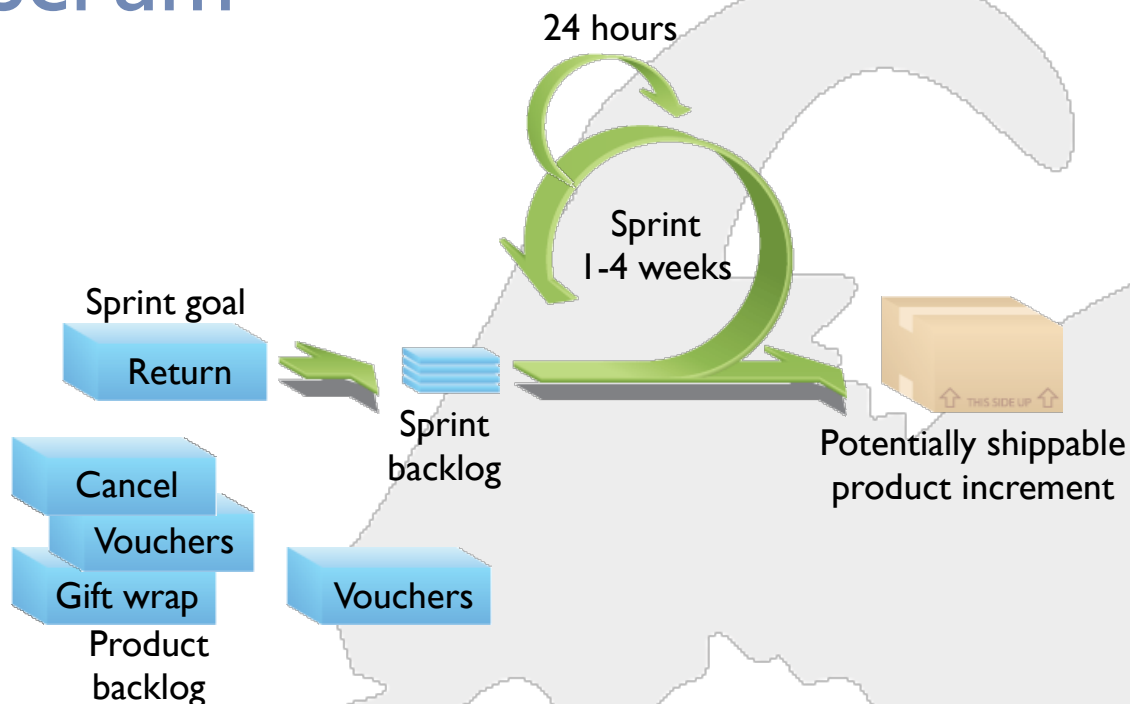
Source: *Strategic Management and Organizational Dynamics* by Ralph Stacey in *Agile Software Development with Scrum* by Ken Schwaber and Mike Beedle.

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# Scrum



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# Sprints

- Scrum projects make progress in a series of “sprints”
- 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



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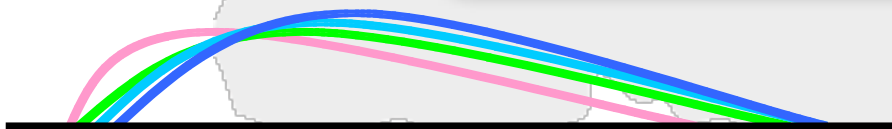
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# Sequential vs. overlapping development



Rather than doing all of one thing at a time...

...Scrum teams do a little of everything all the time

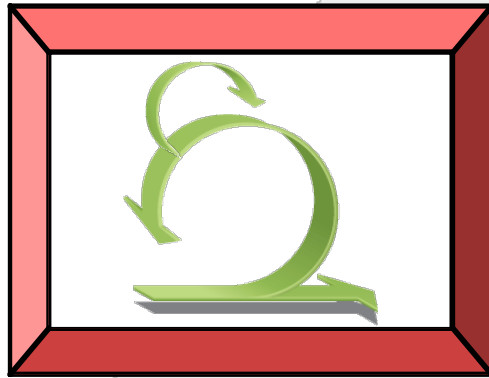
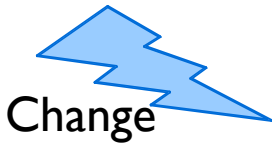


Source: “The New New Product Development Game” by Takeuchi and Nonaka. *Harvard Business Review*, January 1986.

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# 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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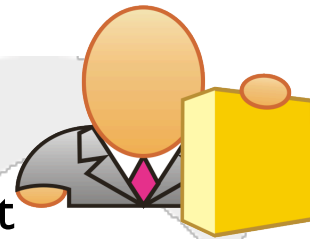


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# Product owner

- Define the features of the product
- Makes scope vs. schedule decisions
- Responsible for achieving financial goals of the project
- Prioritize the product backlog
- Adjust features and priority every sprint, as needed
- Accept or reject work results



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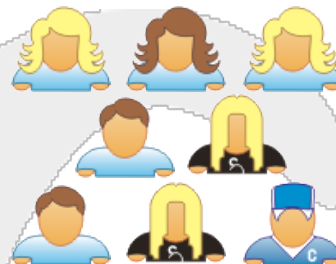
# The ScrumMaster



- Responsible for enacting Scrum values and practices
- Removes impediments
- Coaches the team to their best possible performance
  - Helps improve team productivity in any way possible
- Enable close cooperation across all roles and functions
- Shield the team from external interference



# The team



- Typically 5-9 people
- Cross-functional:
  - Programmers, testers, user experience designers, etc.
- 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





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## Sprint planning meeting

### Who

- Team, ScrumMaster, & Product Owner

### Agenda

- Discuss top priority product backlog items
- Team selects which to do

### Why

- Know what will be worked on
- Understand it enough to do it

Sprint goal

Sprint backlog



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# 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)

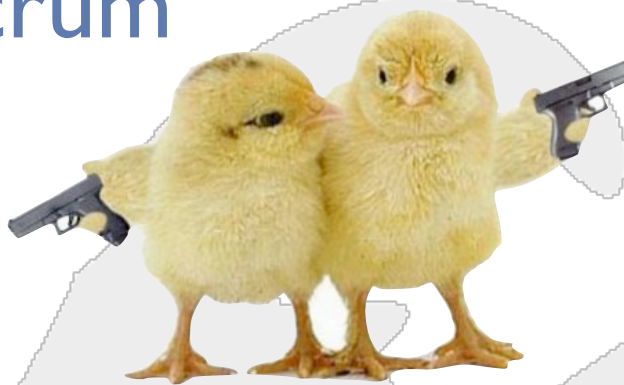


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# The daily scrum

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



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# 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



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# Sprint retrospective

- Periodically take a look at what is and is not working
- Typically around 30 minutes
- Done after every sprint
- Whole team participates
  - ScrumMaster
  - Product owner
  - Team
  - Possibly customers and others



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# Start / Stop / Continue

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

Start doing

Stop doing

This is just one of many ways to do a sprint retrospective.

Continue doing



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# Product backlog

- The requirements
- A list of all desired work on the project
- Ideally expressed such that each item has value to the users or customers of the product
- Prioritized by the product owner
- Reprioritized at the start of each sprint



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This is the  
product backlog



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# A sample product backlog

Backlog item	Estimate
Allow a guest to make a reservation	3
As a guest, I want to cancel a reservation.	5
As a guest, I want to change the dates of a reservation.	3
As a hotel employee, I can run RevPAR reports (revenue-per-available-room)	8
Improve exception handling	8
...	30
...	50



## Sprint goal

A short statement of what the work will be focused on during the sprint

### Sprint 7

Implement basic shopping cart functionality including add, remove, and update.

### Sprint 8

The checkout process—pay for an order, pick shipping, order gift wrapping, etc.



# Managing the sprint backlog

- Individuals sign up for work of their own choosing
  - Work is never assigned
- Estimated work remaining is updated daily
- Any team member can add, delete or change the sprint backlog
- Work for the sprint emerges
- If work is unclear, define a sprint backlog item with a larger amount of time and break it down later
- Update work remaining as more becomes known



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## A sprint backlog

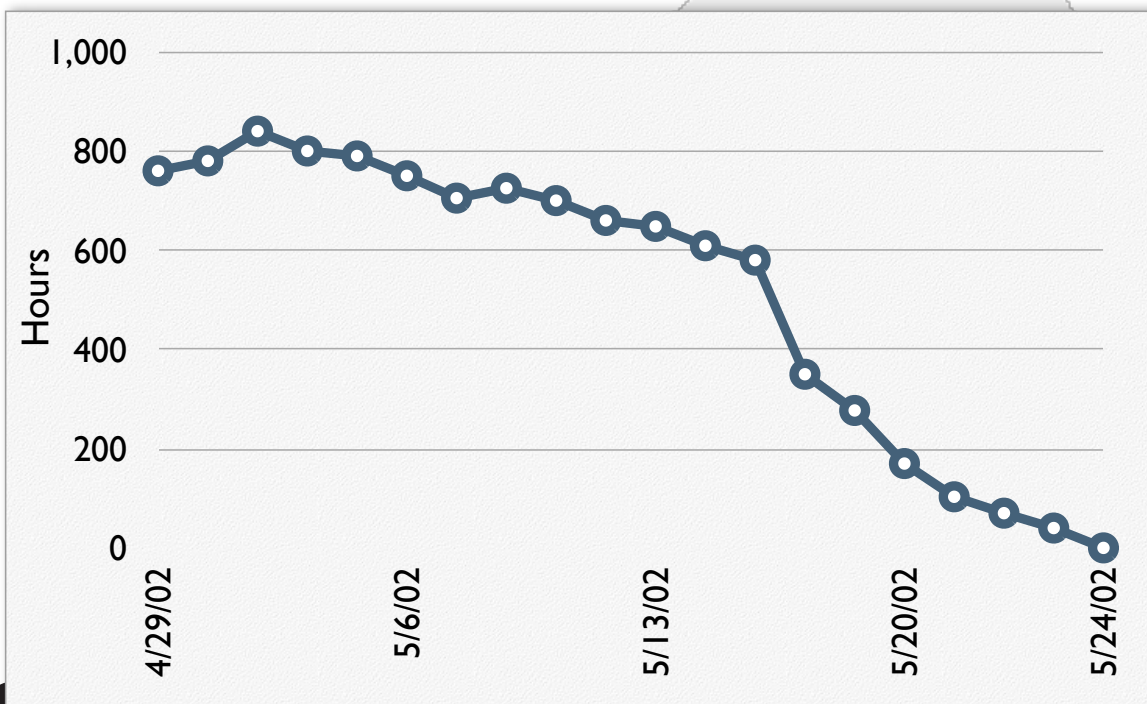
Tasks	Mon	Tues	Wed	Thur	Fri
Code the user interface	8	4	8		
Code the middle tier	16	12	10	4	
Test the middle tier	8	16	16	11	8
Write online help	12				
Write the foo class	8	8	8	8	8
Add error logging			8	4	



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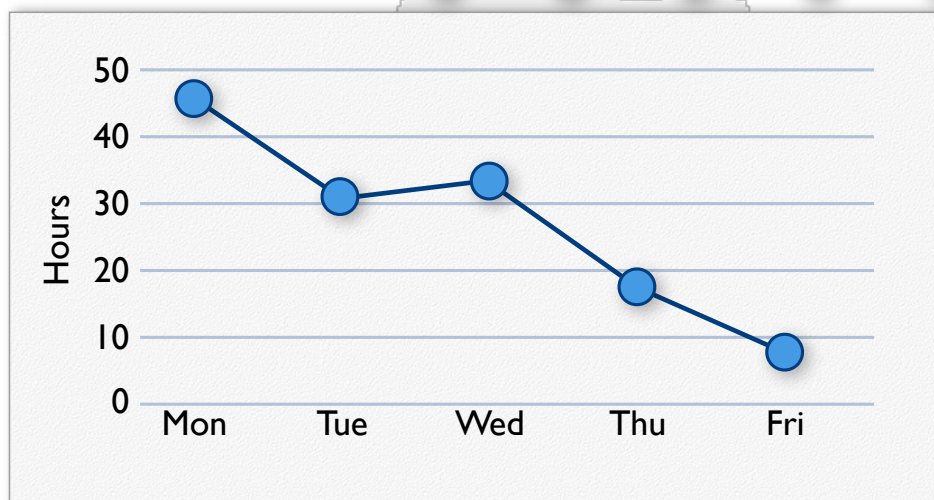
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# A sprint burndown chart



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Tasks	Mon	Tues	Wed	Thur	Fri
Code the user interface	8	4	8		
Code the middle tier	16	12	10	7	
Test the middle tier	8	16	16	11	8
Write online help	12				



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# Scalability

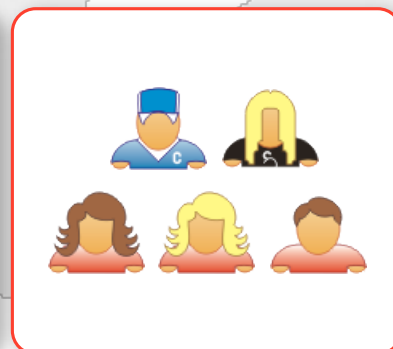
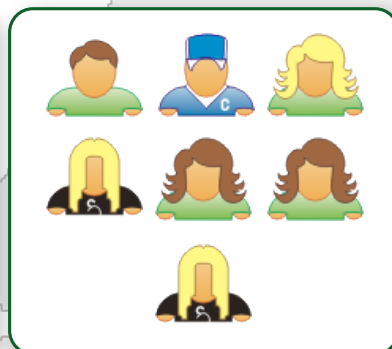
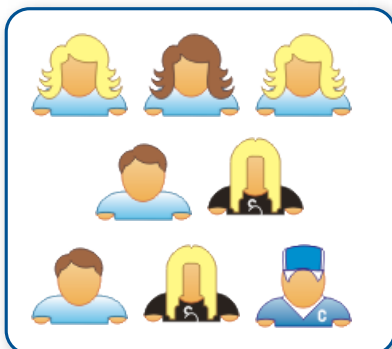
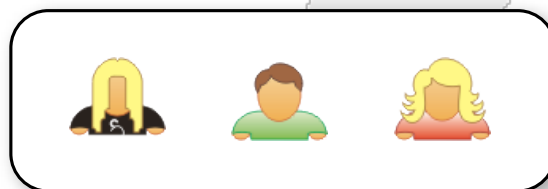
- Typical individual team is  $7 \pm 2$  people
  - Scalability comes from teams of teams
- Factors in scaling
  - Type of application
  - Team size
  - Team dispersion
  - Project duration
- Scrum has been used on projects of over 1,000 people



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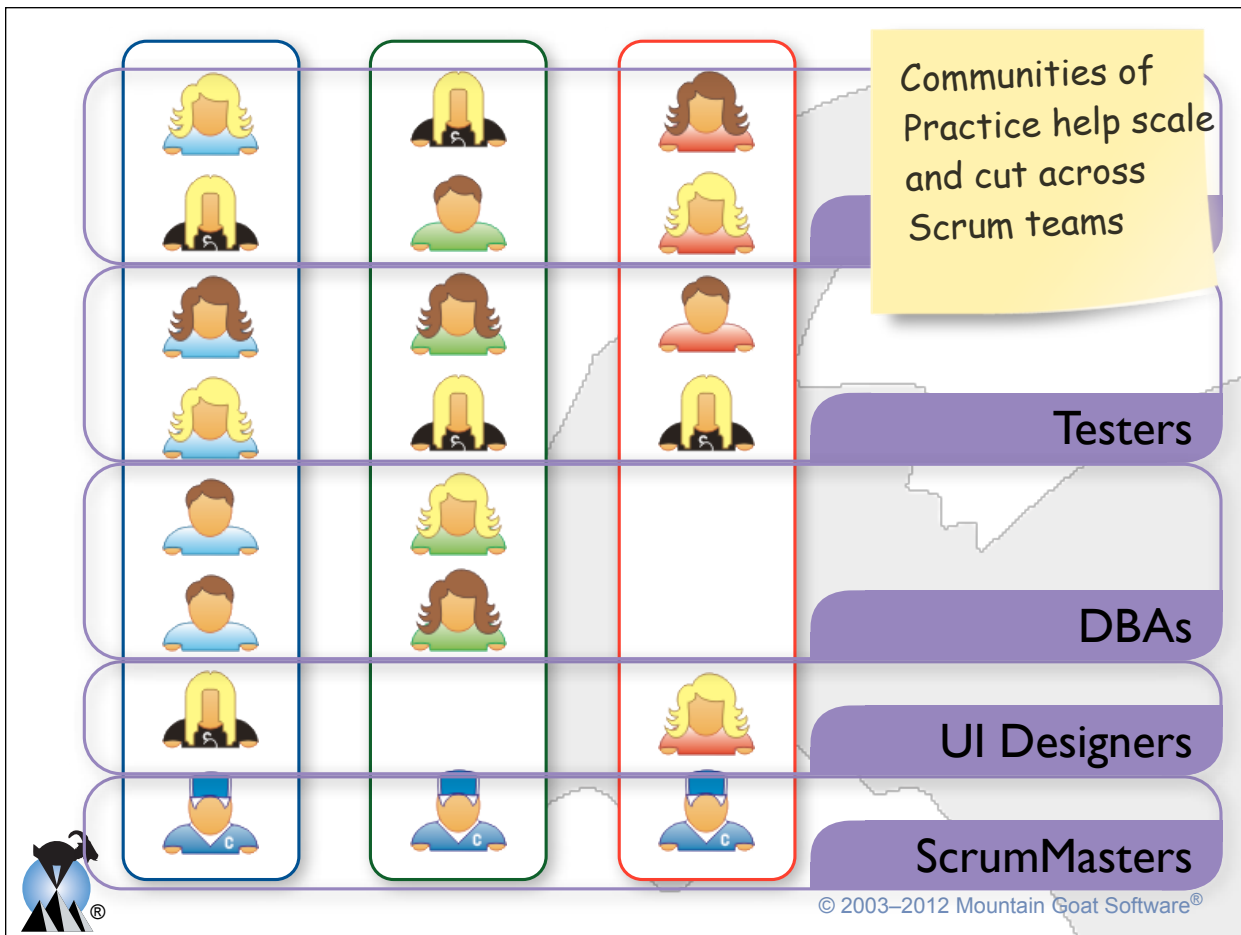
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# Scaling through the Scrum of scrums



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## A Scrum reading list

- *Agile Estimating and Planning* by Mike Cohn
- *Agile Game Development with Scrum* by Clinton Keith
- *Agile Product Ownership* by Roman Pichler
- *Agile Retrospectives* by Esther Derby and Diana Larsen
- *Agile Testing: A Practical Guide for Testers and Agile Teams* by Lisa Crispin and Janet Gregory
- *Coaching Agile Teams* by Lyssa Adkins
- *Essential Scrum* by Kenneth Rubin
- *Succeeding with Agile: Software Development using Scrum* by Mike Cohn
- *User Stories Applied for Agile Software Development* by Mike Cohn



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# About this presentation...

- A Creative Commons version of this presentation is available at:  
[www.mountangoatsoftware.com/scrum-a-presentation](http://www.mountangoatsoftware.com/scrum-a-presentation)
- Available in Keynote and PowerPoint format
- Translated into 25 languages (so far!)



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## Mike Cohn

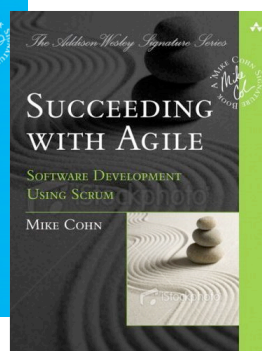
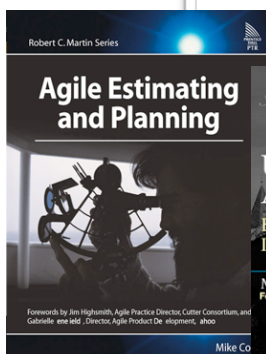
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