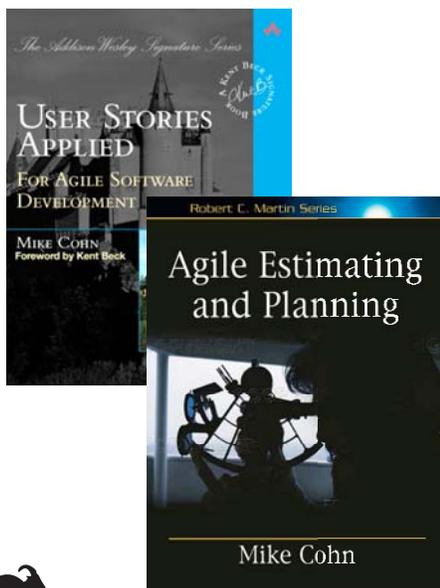


Scrum for Video Game Development



1

Mike Cohn - background



Consultant, author,
and speaker

- Founding member and director of Agile Alliance, Scrum Alliance, and Agile Project Leadership Network
- Founder of Mountain Goat Software

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What is Scrum?

- One of the agile processes
- Iterative and incremental
- Produces demonstrable working software every two to four weeks
- Results- and commitment-oriented
- Not a silver bullet
- Has a long history of success on a wide variety of projects, including video game development

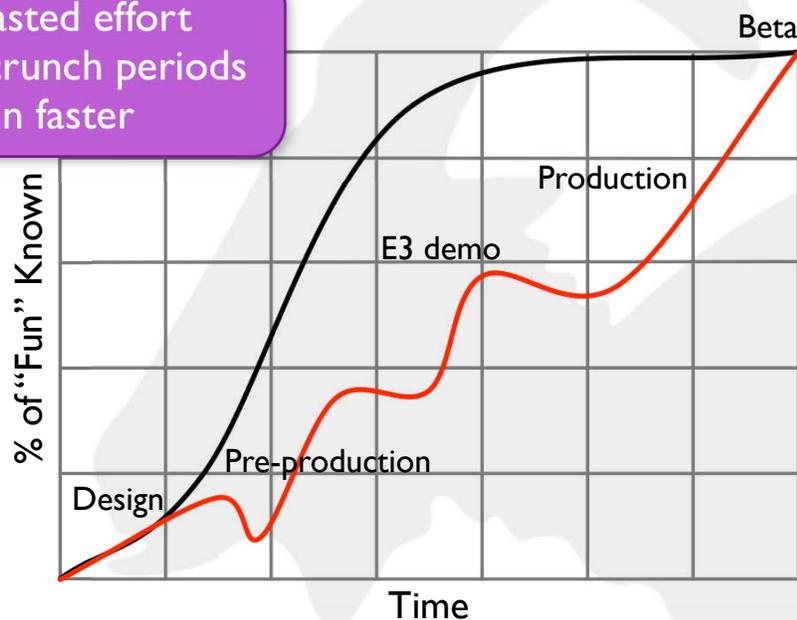


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Why Scrum for game development?

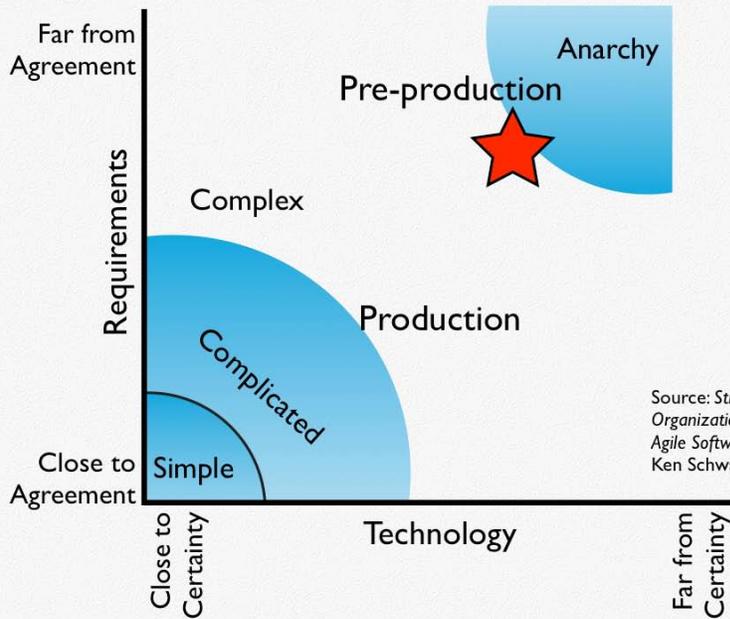
- Reduce wasted effort
- Minimize crunch periods
- Find the fun faster



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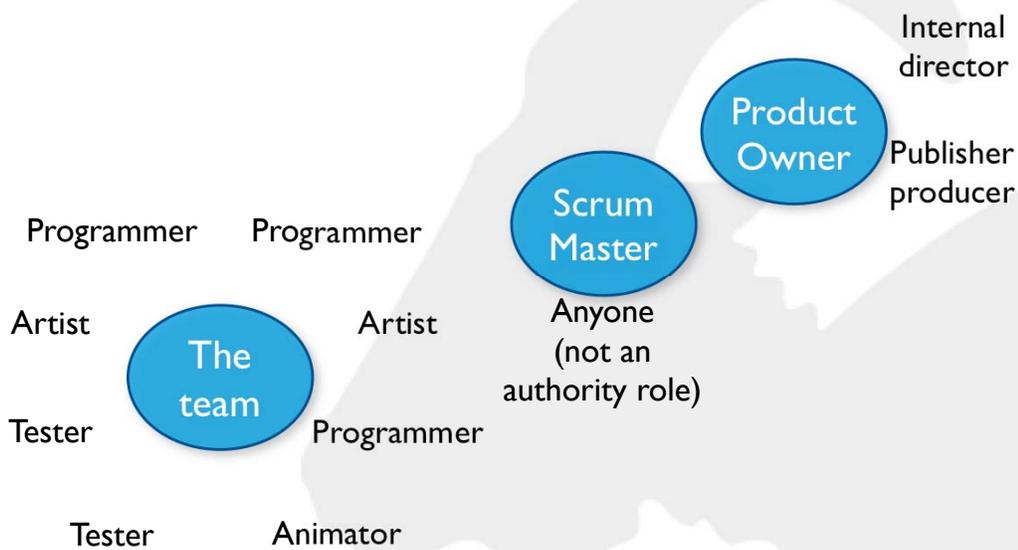
Project noise level



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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The Scrum project community



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Scrum roles and responsibilities



Product Owner

- Defines the features of the product, decides on release date and content
- Is responsible for the profitability of the product (ROI)
- Prioritizes features according to market value
- Can change features and priority every sprint
- Accepts or rejects work results



Scrum Master

- Ensures that the team is fully functional and productive
- Enables close cooperation across all roles and functions and removes barriers
- Shields the team from external interferences
- Ensures that the process is followed. Participates in daily scrum, sprint review and planning meetings



Team

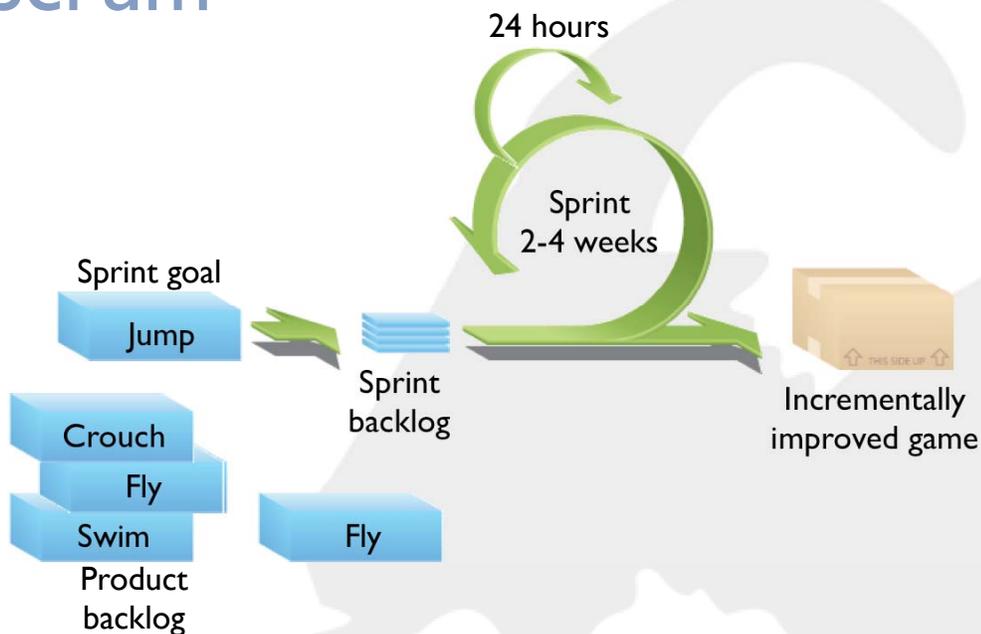
- Cross-functional, seven plus/minus two ideally full-time members
- Selects the sprint backlog
- Has the right to do everything within the boundaries of the project guidelines to reach the sprint goal
- Organizes itself and its work
- Demos work results to the Product Owner



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Scrum



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Scrum is iterative

“Scrum facilitates feature iteration, allowing teams to deliver polished, tuned and integrated features which can be used to test the creative quality of the game throughout its development, allowing the team to incorporate audience feedback as early as possible in the development process.”

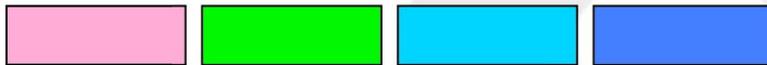
Chris Ulm
Chief Design Officer
High Moon Studios



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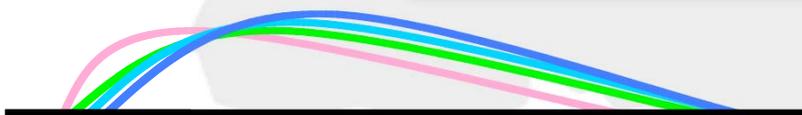
9

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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A sample product backlog

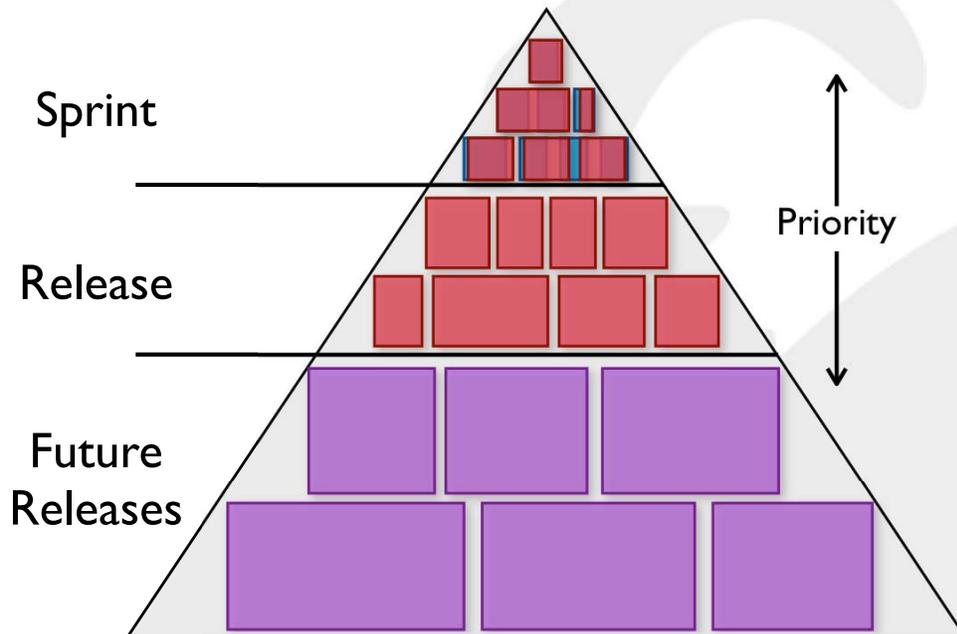
Backlog item	Estimate
As a player, I want the camera to stay oriented when it collides with bushes.	3
As a player, I want to perform a false compliance within the apprehend window to defeat the cop and avoid arrest.	5
As a player, I want punches, reactions and blocks synchronized, so that fighting looks natural and realistic	3
As a player, I want to see a clear representative HUD that is art directed to match the game's universe.	8
As a CTO, I want an easy to use functional test framework so that programmers / testers can write tests.	5
As a player I want to see enemies get knocked down and get back up.	30



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The product backlog iceberg



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Detail is added as an item moves up the iceberg

Often by first splitting the backlog item

As a player I want to see enemies have hit reactions when I melee them.

As a player, I want enemies to have animated reactions when I hit them.

As a player, I want enemies to have physical reactions when I hit them.

As a player, I want there to be collision detection when I melee an enemy.



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And then later by adding “Conditions of Satisfaction” to the backlog item

As a player, I want enemies to have physical reactions when I hit them.

- An enemy twists left when hit on the left and right when hit on the right.
- The enemy staggers back when hit in the center.
- The enemy tilts back when hit in the head.



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Additional examples

As a player I want to see enemies get knocked down and get back up.

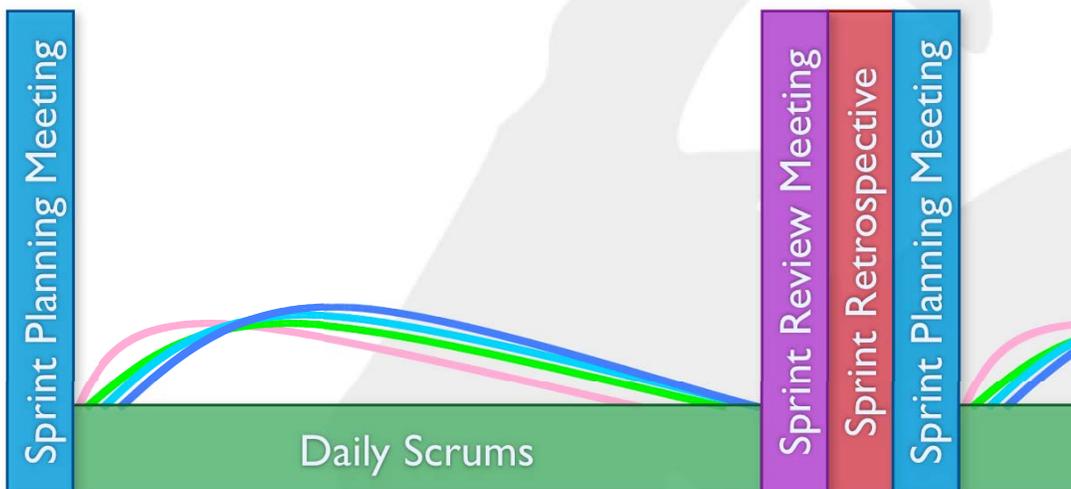
- ✓ Head shots knock AI down
- ✓ AI can get back up from any position and continue fighting

As a player, I want to be able to melee the vampire boss.

- ✓ Can melee with a button press using existing assets
- ✓ Same hit reactions as being shot in the area of the body

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The sprint cycle



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Sprint planning meeting

- Product owner describes priorities
- Team breaks product backlog items (features) into tasks
- Team commits to some amount of work

Daily scrum

- Three questions:
 - What did you do yesterday?
 - What will you do today?
 - What's in your way?
- A commitment between peers, not a management status meeting



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Sprint review meeting

- Team demonstrates what was accomplished
- 2-hour prep time rule
- No PowerPoint!
- Anyone can attend

Sprint retrospective

- Focus on continuous improvement
- Look back at the last sprint and ask what would we like to:
 - Start doing
 - Stop doing
 - Continue doing



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A sprint backlog

Tasks	Mon	Tues	Wed	Thur	Fri
Create close punch animations for attackers	8	4	8		
Create close punch animations for responders	16	12	10	4	
Adjust fight navigation	8	16	16	11	8
Fix camera bouncing off walls	12				
Polish audio	8	8	8	8	8
Tune attack percentage in AI			8	4	

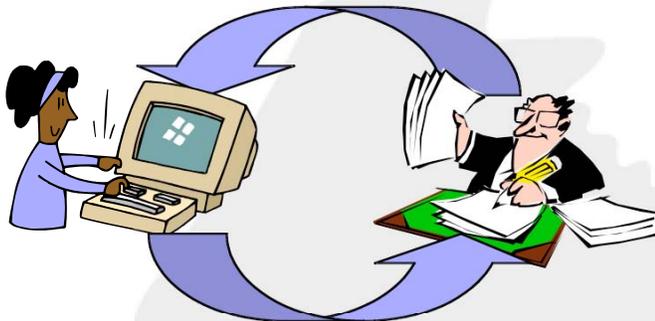


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Reciprocal commitments

The team commits to delivering some amount of functionality



The business commits to leave priorities alone during the sprint



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No changes during a sprint

- What the team commits to—and what the product owner agrees to—during sprint planning should be what is delivered

However, keep in mind that...

- We start with vague requirements
- Our understanding of those requirements is refined during the sprint



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Abnormal terminations

- If change cannot be kept out of a sprint...
 - The sprint may be abnormally terminated
- An extreme circumstance, not done very often
- Raises visibility of priority changes

Team can abnormally terminate if...

...they feel they cannot meet the goal of a sprint.

Business can abnormally terminate if...

...priorities change.



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Burndown charts

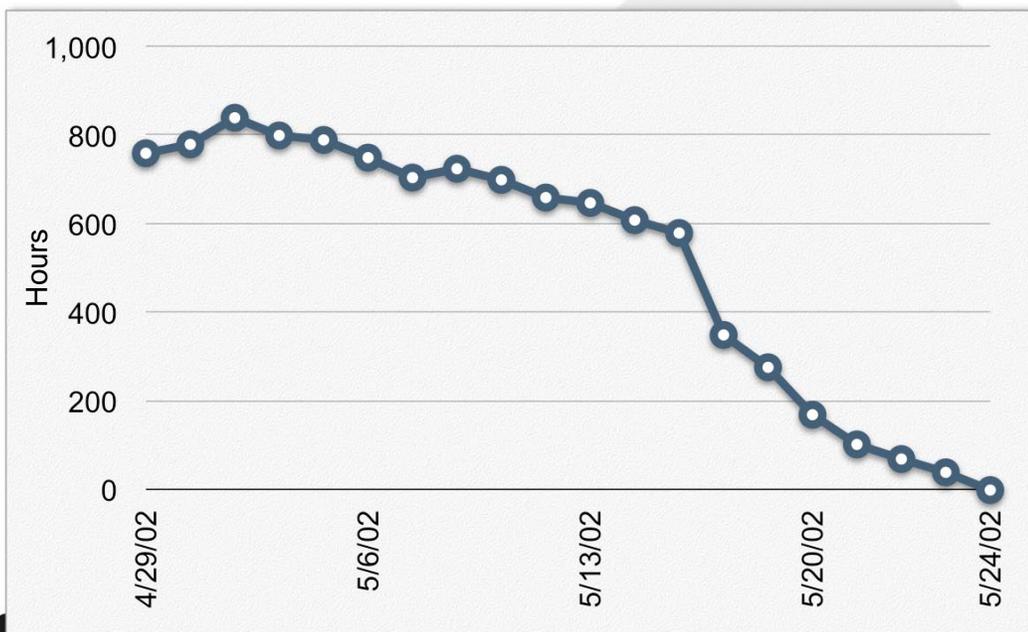
- Primary method of tracking progress
- A burndown chart shows how much work is left as of various dates
- Two types
 - Release burndown
 - Sprint burndown



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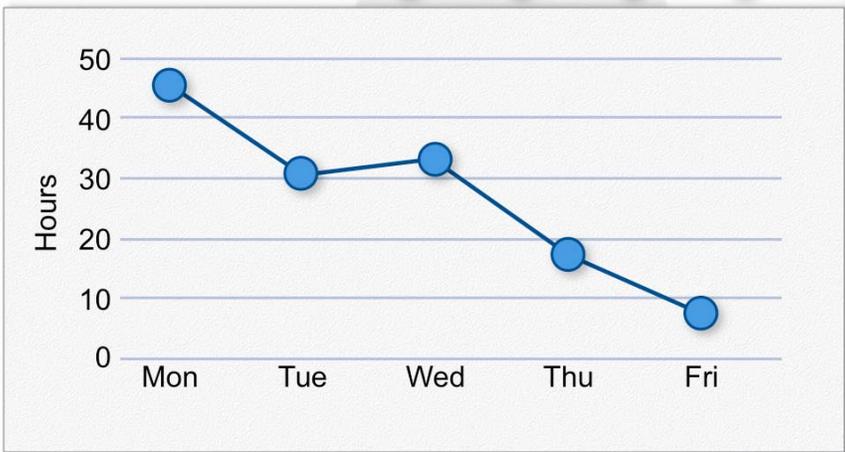
A sprint burndown chart



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Tasks	Mon	Tues	Wed	Thur	Fri
Create punch animations	8	4	8		
Fix camera bouncing off walls	16	12	10	7	
Polish audio	8	16	16	11	8
Tune attack percentage in AI	12				



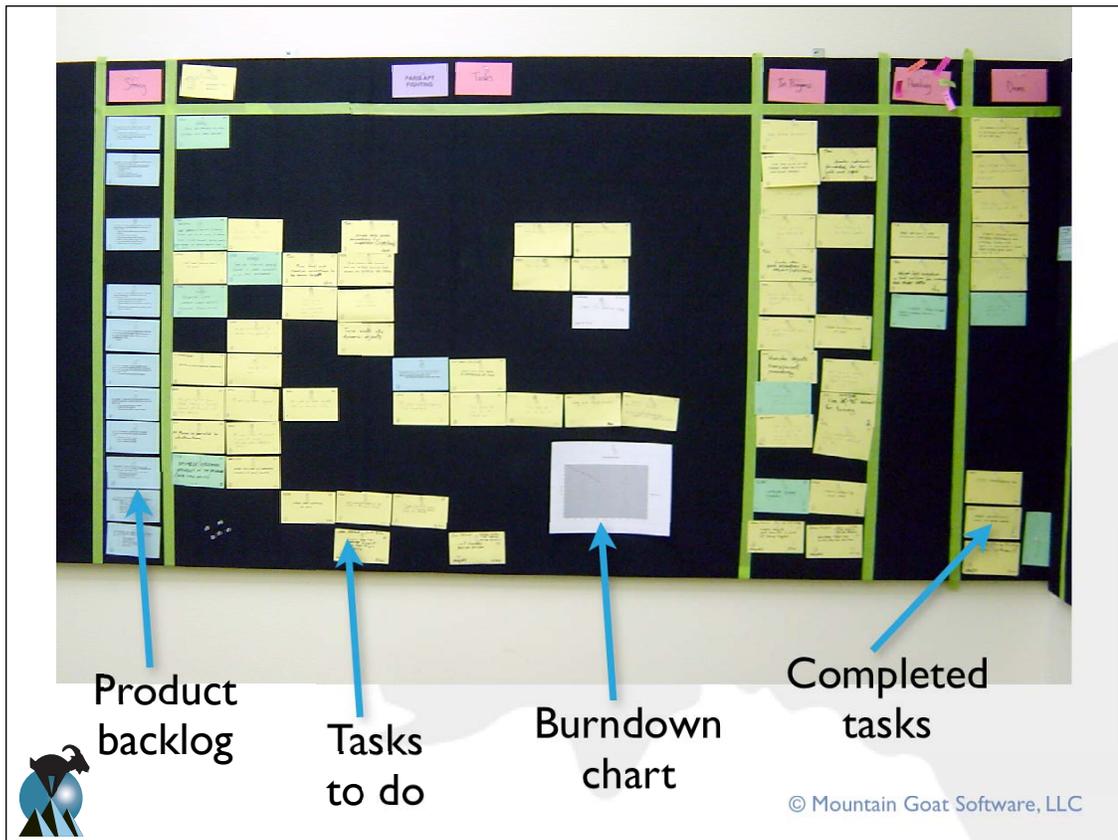
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Task boards

Story	To Do	In Process	To Verify	Done
As a user, I... 8 points	Code the... Test the... 8 Code the... 4 Code the... 8 Animate th... Test the... 4	Code the... MC 4 Test the... SC 8	Code the... LC 8	Test the... MC 8 Test the... SC 4
As a user, I... 5 points	Code the... Code the... Model the...	Test the... 8 Code the... DC 8		Test the... SC 8



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Release planning on long projects

- On a multi-year game, break the total project into a series of shorter interim internal “releases”
- Three months is a good horizon
- For each release, establish one or a few BHAGs (Big Hairy Audacious Goals)



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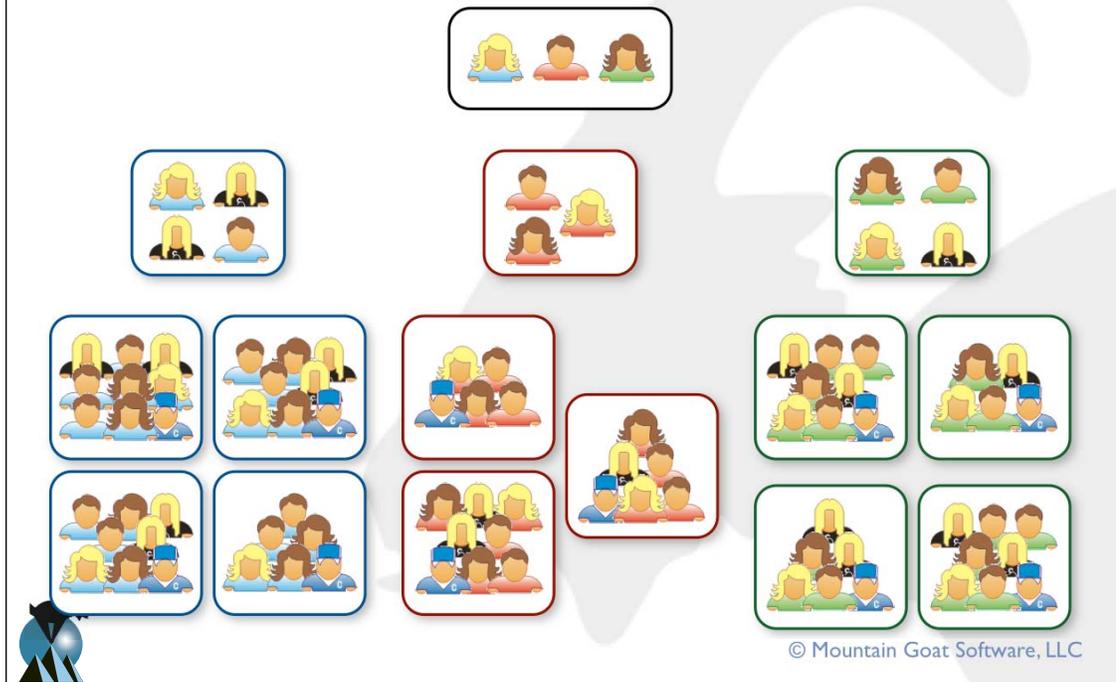
Scrum of scrums



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Scrum of scrums of scrums



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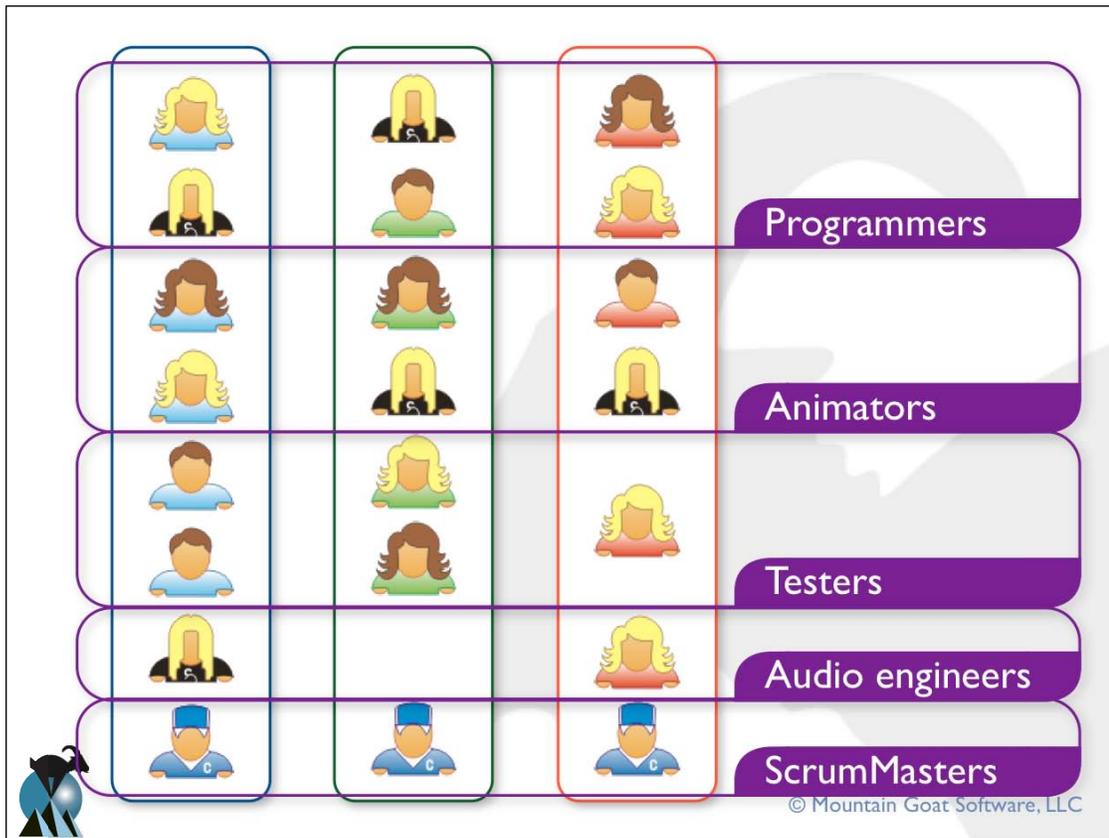
Augment with orthogonal teams

- Beyond a certain team size, augment the team structure with orthogonal, virtual teams
 - Programming team
 - Audio team
 - AI team
- Informal or semi-formal at best
- Meet periodically
- Discuss and resolve issues related to their specialty
 - May want to work off their own team backlog



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Upcoming public classes

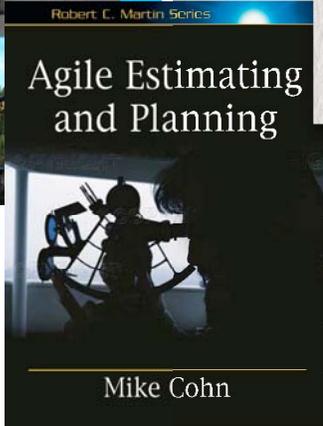
Date	What	Where
February 26-27 February 28	Certified ScrumMaster Agile Estimating and Planning	Seattle
April 8-9 April 10	Certified ScrumMaster Agile Estimating and Planning	Dallas
June 3-4 June 5	Certified ScrumMaster Agile Estimating & Planning	Reston, VA (DC area)
July 29-30 July 31	Certified ScrumMaster Agile Estimating & Planning	San Diego
European classes in London, Oslo, Stockholm in 2008		

Register at
www.mountaingoatsoftware.com

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