Getting Agile with Scrum

Mike Cohn

9 November 2009

1

Mike Cohn - background
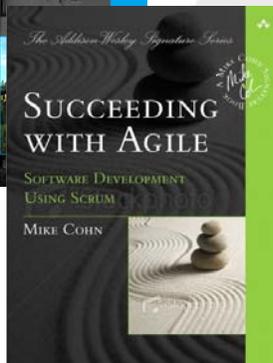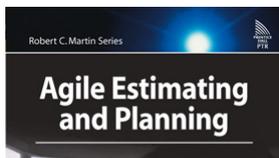
Agile coach and trainer

O Founding member and director of Agile Alliance and Scrum Alliance

O Founder of Mountain Goat Software

O Ran my first Scrum project back in 1995

O Typical programmer to manager etc. progression

2

The Agile Manifesto

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

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It shouldn't be all-or-nothing

Anticipation — Traditional — Adaptation

Anticipation — Scrum — Adaptation
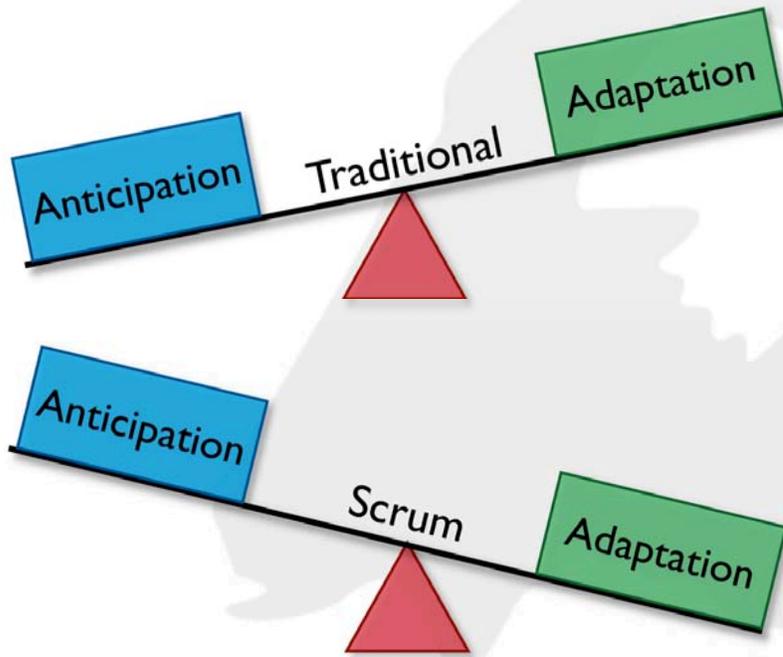
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Scrum Overview

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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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7

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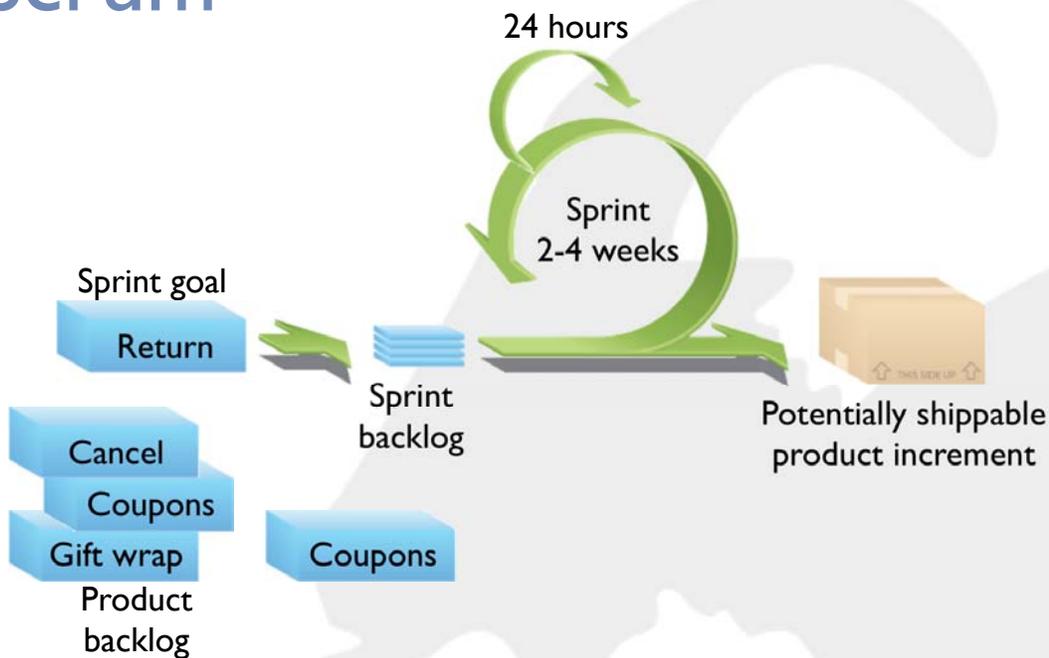
Team
- Cross-functional, seven plus/minus two members
- Selects the sprint backlog
- Has the right to do everything within the boundaries of the project guidelines to reach the iteration goal
- Organizes itself and its work
- Demos work results to the Product Owner

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Scrum

24 hours

Sprint
2-4 weeks

Sprint goal

Return

Sprint backlog

Potentially shippable product increment

Cancel

Coupons

Gift wrap

Coupons

Product backlog

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Scrum

- Is results-oriented

- Is commitment-driven

- Is value-focused

- Empowers and respects teams

Product Backlog

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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13

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 a run RevPAR (Revenue-Per-Available-Room) report	8
Improve exception handling	8
...	30
...	50

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User stories as backlog items

Card
- Stories are traditionally written on note cards.
- May be annotated with notes, estimates, etc.

Conversation
- Details behind the story come out during conversations with product owner

Confirmation
- Acceptance tests confirm the story was coded correctly

Source: XP Magazine 8/30/01, Ron Jeffries.

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Samples from a travel website

As a user, I want to reserve a hotel room.

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

As a frequent flyer, I want to rebook a past trip, so that I save time booking trips I take often.

Use this template:

As a <type of user>,
I want <some goal>
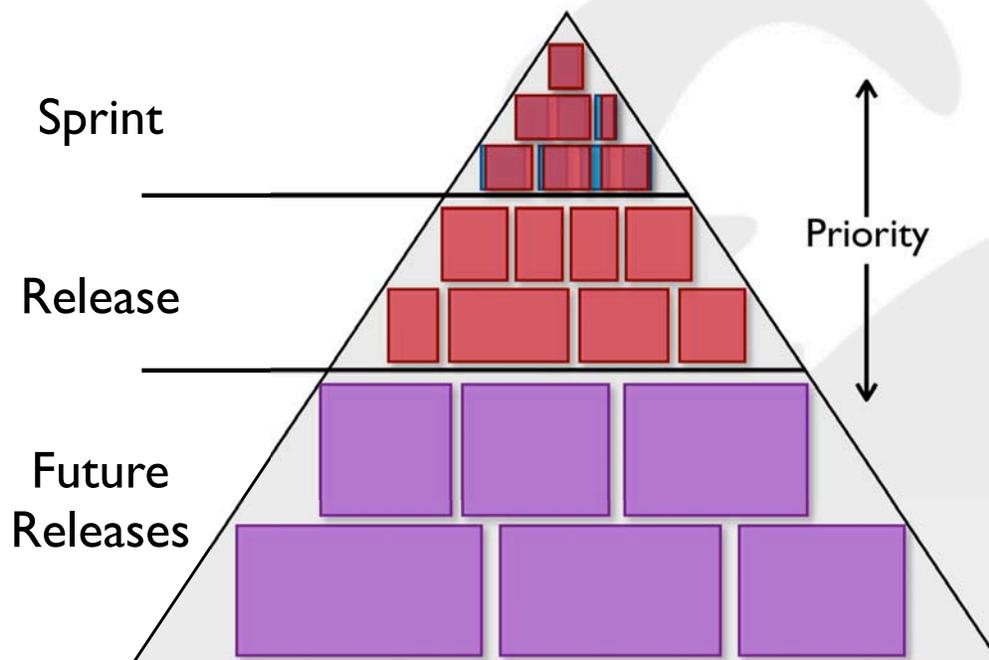so that <some reason>.

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Write some user stories about things some "users" of the software development process would want

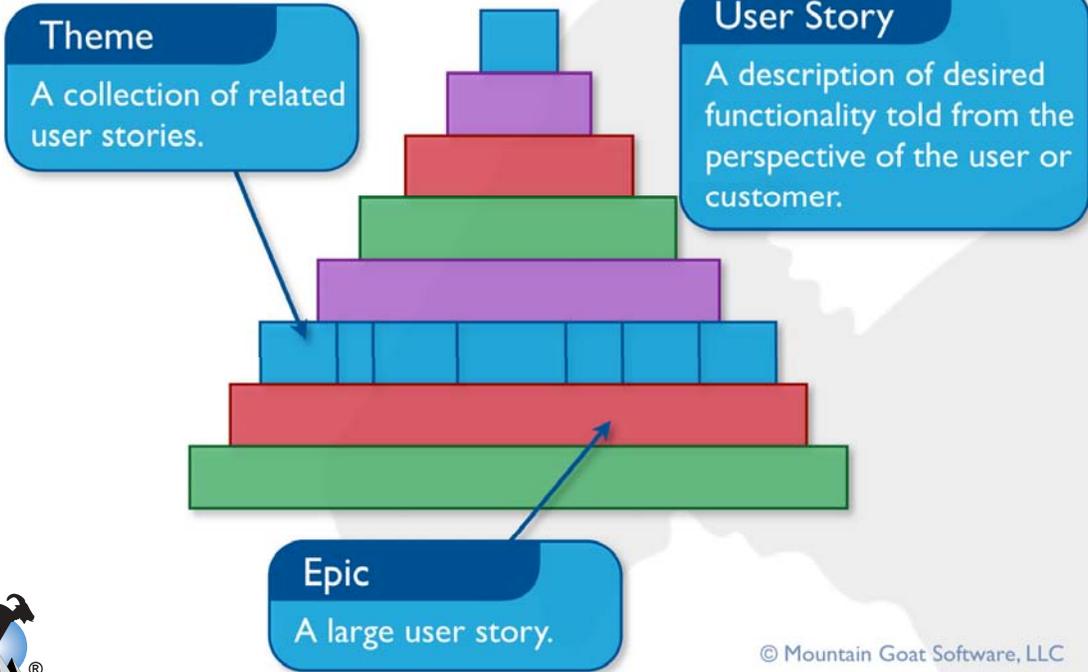As a developer, I do not want to be forced to work inordinate or prolonged amounts of overtime.

As a customer, I want a high degree of predictability of scope and date.

The product backlog iceberg

Sprint

Release

Future Releases

Priority

Some useful terms

Theme — A collection of related user stories.

User Story — A description of desired functionality told from the perspective of the user or customer.

Epic — A large user story.

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An example

As a VP Marketing, I want to review the performance of historical promotional campaigns so that I can identify and repeat profitable ones.

Clearly an epic

As a VP Marketing, I want to select the timeframe to use when reviewing the performance of past promotional campaigns, so that I can identify and repeat profitable ones.

Epics??

As a VP Marketing, I can select which type of campaigns (direct mail, TV, email, radio, etc.) to include when reviewing the performance of historical promotional campaigns.

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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	

Potentially shippable product increment

- At the end of each sprint, the team must produce a potentially shippable product increment

  - High quality, tested, complete, done, what it does it does well

- Potentially shippable ≠ shippable

- Product increment may not be cohesive

  - Print preview but no print

Always deliver

- You must have a potentially shippable product increment at the end of each sprint

- Do not miss the end of the sprint

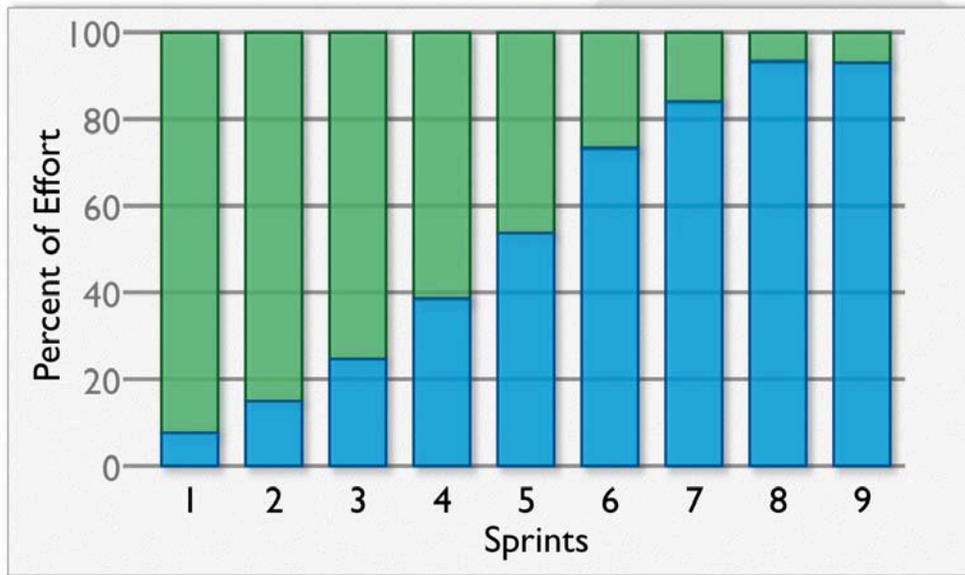   - The deadline is sacred

    - Functionality may vary

Sprints

1 Is there such a thing as an "analysis sprint" where requirements are pulled together?

2 Is there such a thing as a "testing sprint"?

3 What is a "stabilization sprint" and what should be done with it?

Architecture built over time

Percent of Effort — Sprints 1 through 9
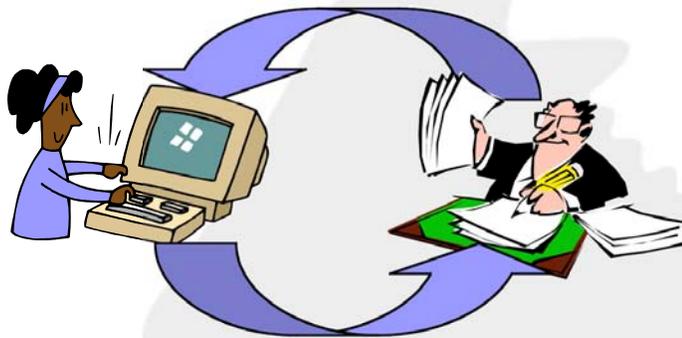
Architecture | User-visible functionality

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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

STOP

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Deciding to abnormally terminate

- Team can abnormally terminate if…
  - They feel they cannot meet the sprint goal
- Management can abnormally terminate if…
  - Business priorities change

After abnormally terminating...
- All work from the current sprint is undone
- Code reverts to where it was at the end of the prior sprint
- Next step is to plan a new sprint

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Release sprints

- Always target a potentially-shippable product increment
- But, some polishing can occur in a **release sprint**
  - Mean Time Between Failure (MTBF) testing
  - Some stress, performance or usability testing
  - Compliance
 - Documentation touchups (final screen shots)

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Tracking
Progress
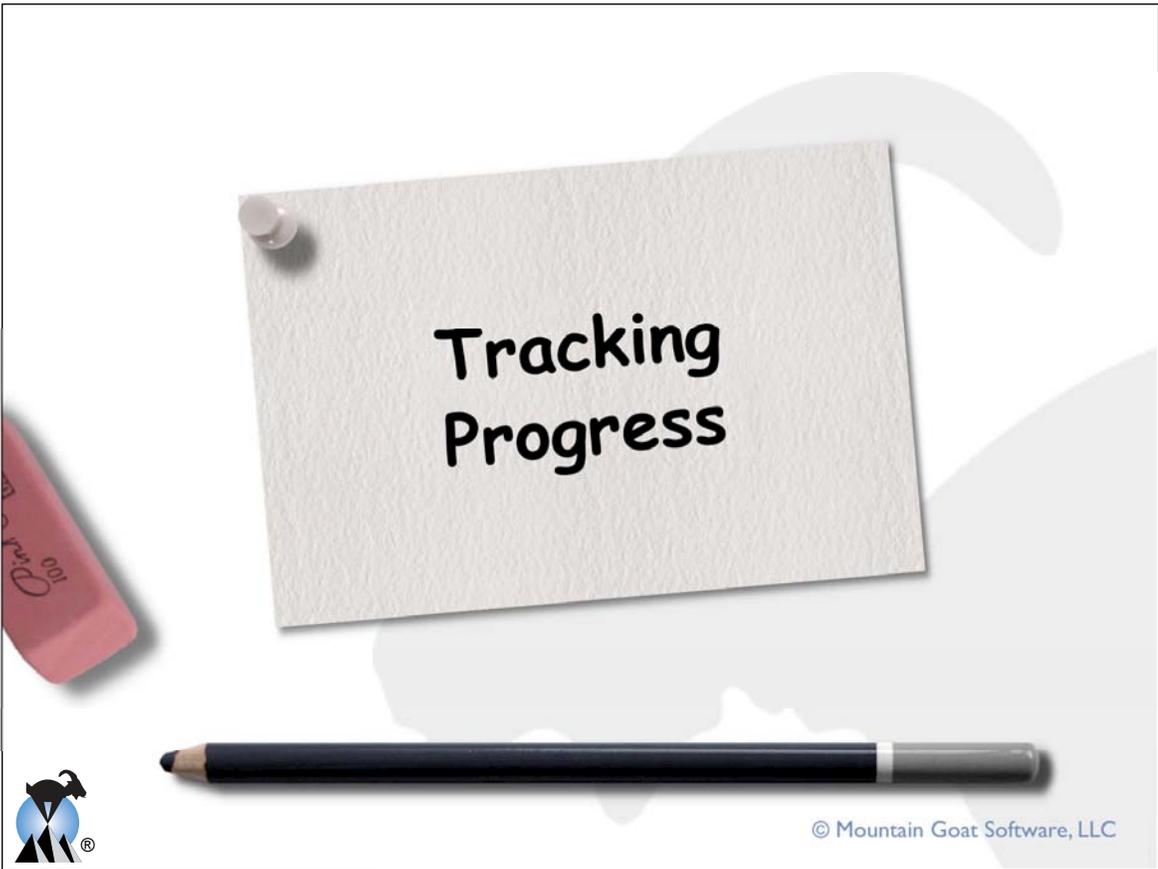
A product backlog

| Story	Points	Done
As the site editor, I can add an article to the site.	5	✔
As a site visitor, I want to read a new article on the front page about once a week.	5	✔
As the site editor, I can include a teaser with each article.	3	
As a site member who has read a teaser on the front page, I want to read the entire article.	5	
As a site visitor, I can do a full-text search of article body, title, and author name.	8	
As a site visitor, I can subscribe to an RSS feed of articles.	5	
As a site visitor, I can post comments about articles so that others can read them.	13	

Velocity

- A useful long-term measure of the amount of work completed per sprint
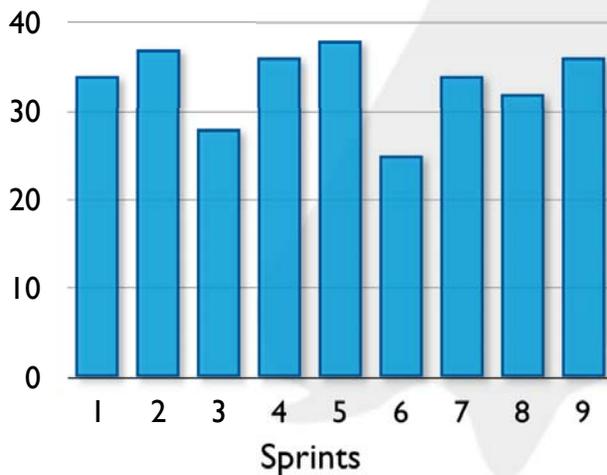
Velocity is measured in the units you use to estimate product backlog items

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When will this project be released?
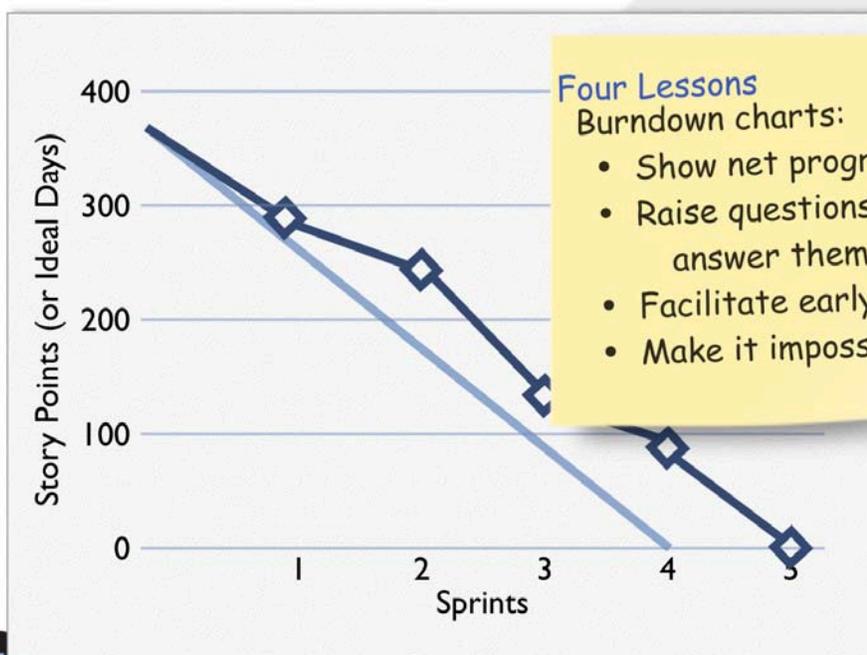
Four Lessons
Burndown charts:
- Show net progress
- Raise questions; they don't answer them
- Facilitate early discussions
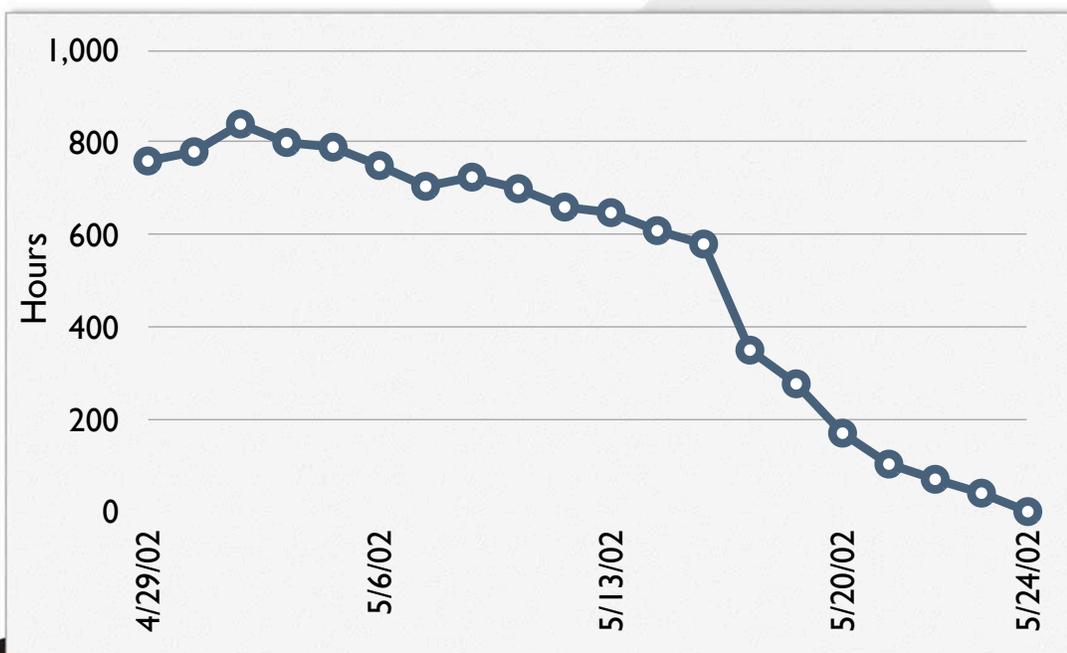- Make it impossible to lie

Knowing more precisely where we are at the end of sprint is very powerful.

? What would be the impact in your organization of knowing how the project is going each sprint?

A sprint burndown chart

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				

Task boards

Story	To Do	In Process	To Verify	Done
As a user, I... 8 points	Code the... Test the... 8 / Code the... 8 / ...he... 4 / Code the... 8 / ...he... 8 / Test the... 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... 8 / Code the... C / Code the... 8 / Test the... 8	Code the... DC 8		Test the... SC 8

A sample task board
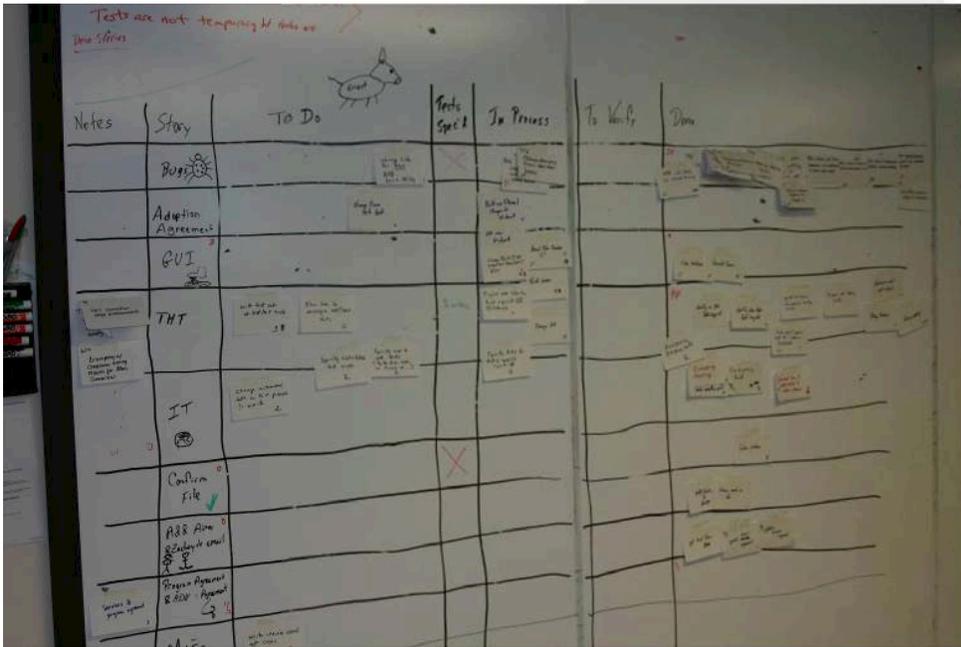
A cork task board

43

Velcro in a team room

44

Scrum Meetings

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45

Scrum meetings

Sprint Planning Meeting

Sprint Review Meeting

Sprint Retrospective

Sprint Planning Meeting

Daily Scrums
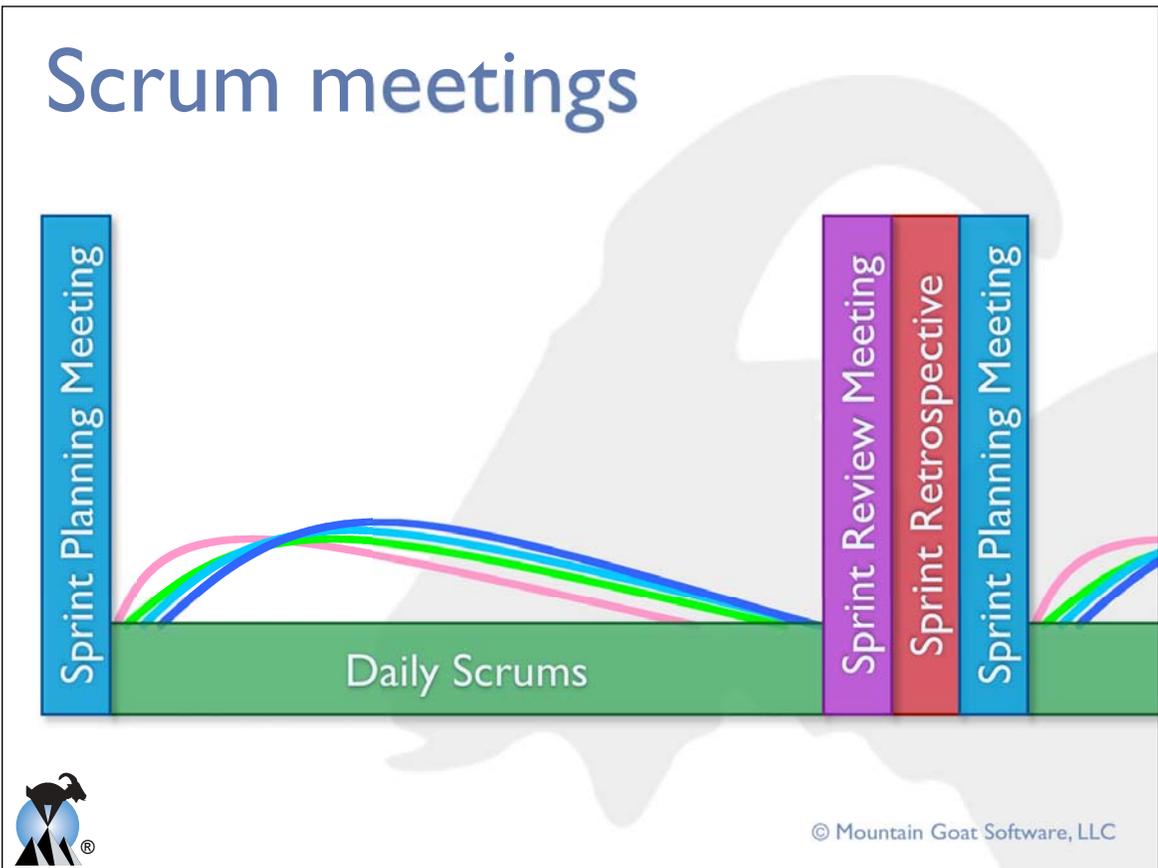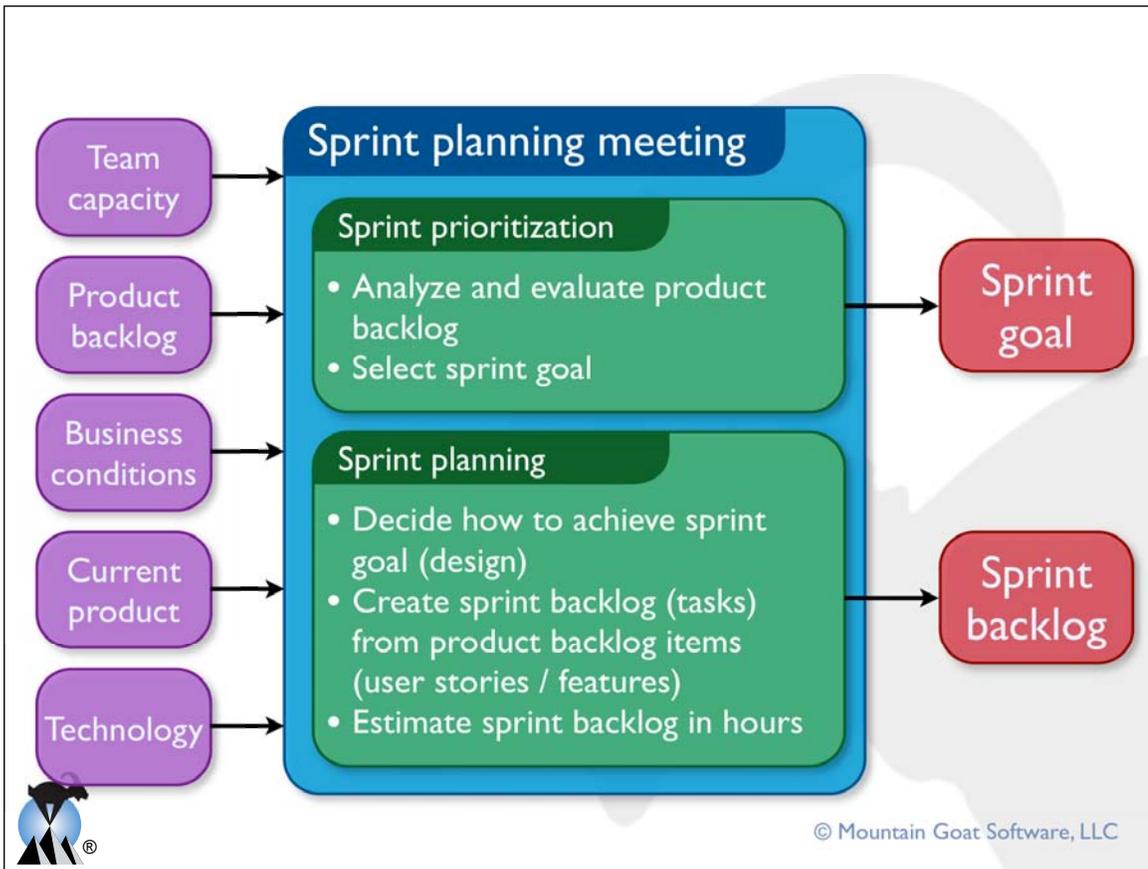
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46

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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
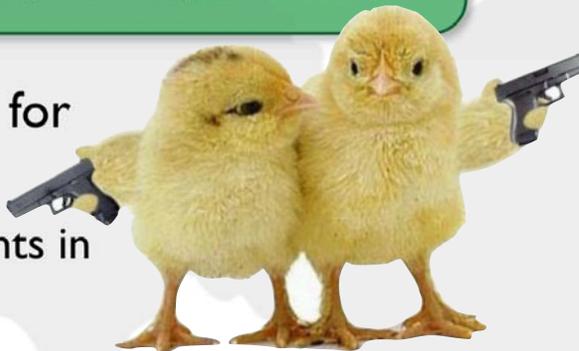- Helps avoid other unnecessary meetings

49

Everyone answers 3 questions

1. What did you do yesterday?

2. What will you do today?

3. What, if anything, is in your way?

- These are *not* status for the ScrumMaster
  - They are commitments in front of peers

50

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
  - No slides
  - 2-hour prep time guideline
- Whole team participates
- Invite the world

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51

Sprint retrospective

- Periodically take a look at what is and is not working
- Typically 15–30 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

Continue doing

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

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A start, stop, continue list

Start
- Showing the software to customers early
- Specifying acceptance tests early and with customers
- Doing code inspections
- Getting FitNesse into the nightly builds
- Trying to finish one story before moving to the next

Stop
- Being disrespectful of QA

Continue
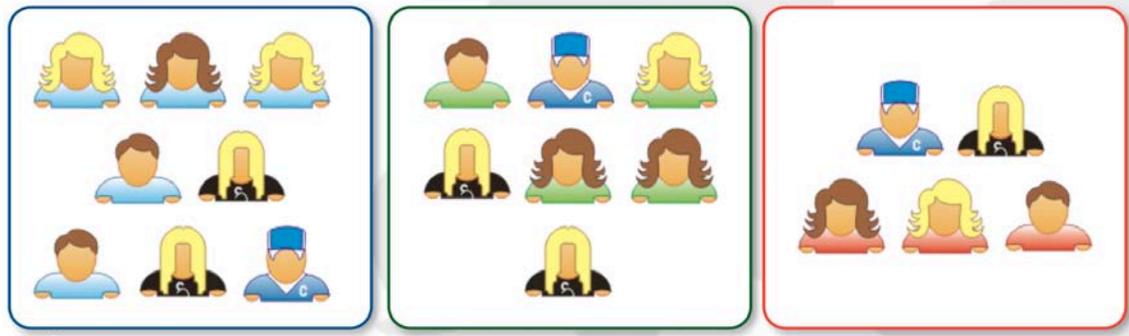- Making progress with the canonical database
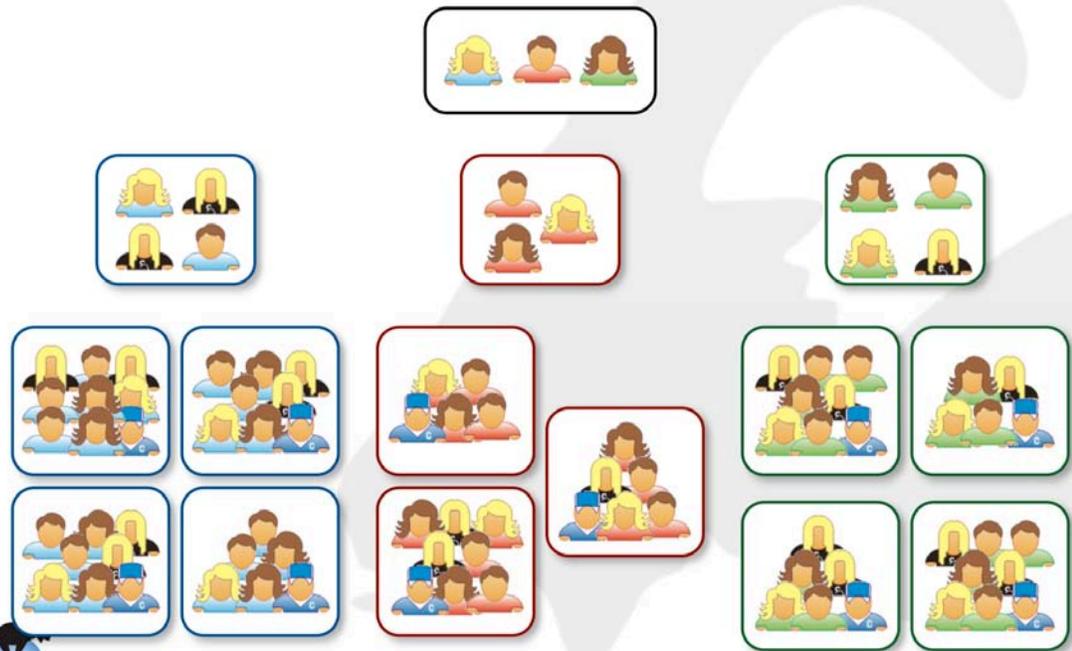- Emphasizing test automation

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Is Scrum right for you?

Yes, probably. But...

- Remember that Scrum requires empowered teams
  - Can you allow the team the freedom to self organize?
- Do your teams have the discipline to be agile or do they equate agile to lazy?
- Will you have the courage and stamina to resolve the issues that Scrum surfaces?
  - The problems were always there, but now they're more visible
- Remember, Scrum is an approach, not a list of rules
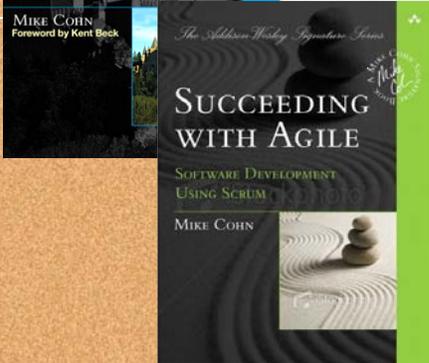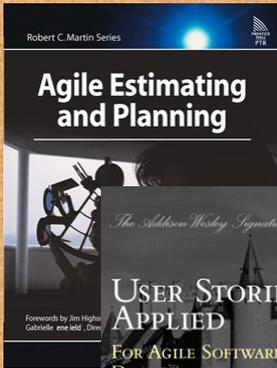
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Upcoming public classes

Date	What	Where
Feb 1–2 Feb 3–4	Certified ScrumMaster Certified Scrum Product Owner	Dallas
March 1 March 2–3 March 4	User Stories for Agile Requirements Certified ScrumMaster Agile Estimating & Planning	Boulder
April 12 April 13–14 April 15	User Stories for Agile Requirements Certified ScrumMaster Succeeding with Scrum (new!)	San Diego

See
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for details

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59