Scrum

Introducción a la Metodología

Pablo Tortorella
pablotortorella@gmail.com

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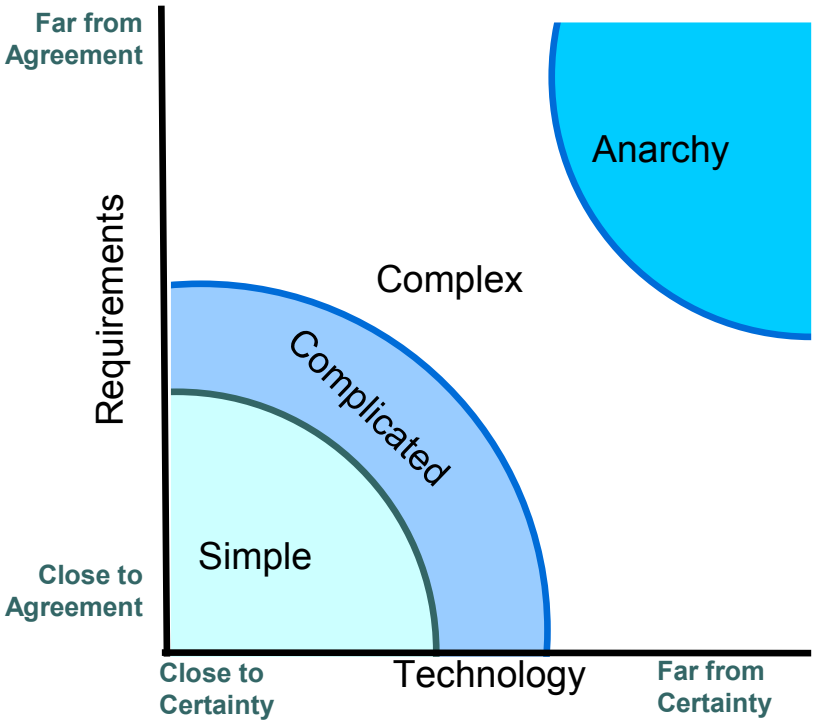
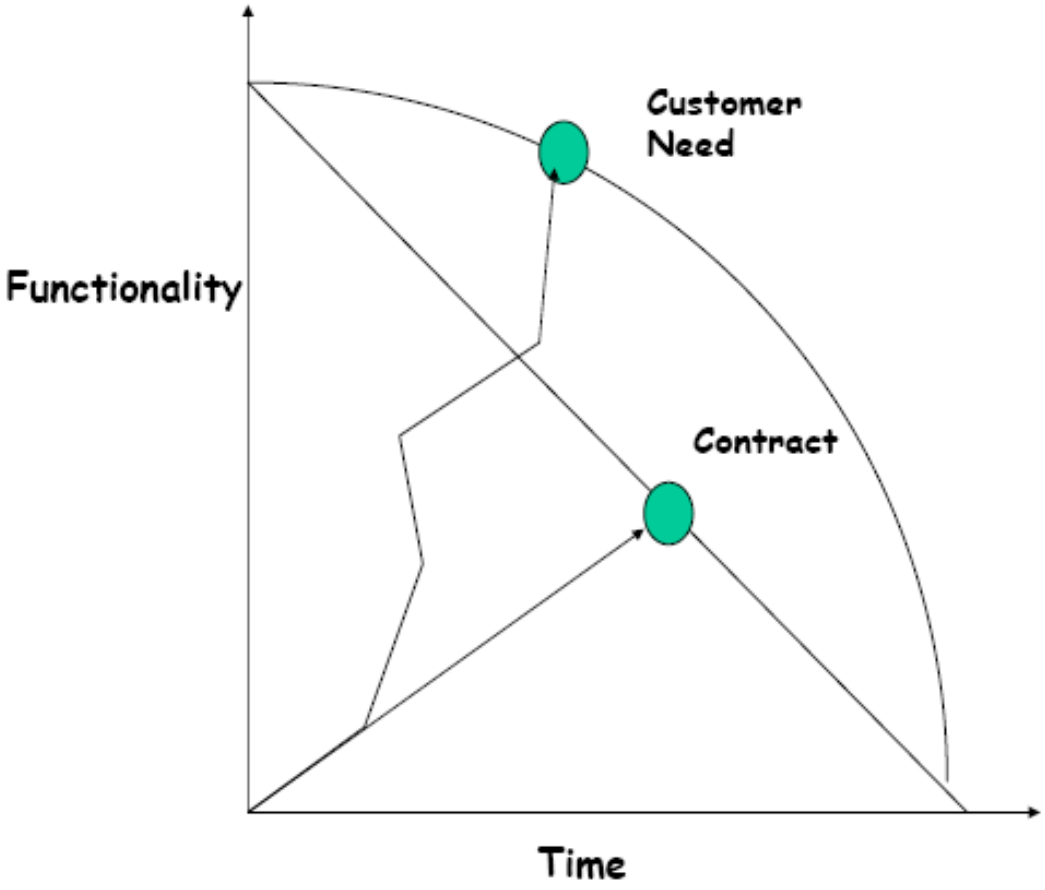
Facultad de Ingeniería - Universidad de Buenos Aires

Project Noise Level



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

What Customer wants



Agile Manifesto – a statement of values

- **Individuals and interactions** over processes and tools
- **Working software** over comprehensive documentation
- **Customer collaboration** over contract negotiation
- **Responding to change** over following a plan

http://www.agilemanifesto.org

Agile metodologies

- **Scrum**
- Lean Software
- Cristal
- XP (eXtreme Programming)
- TDD (Testing Driven Development)
- FDD (Feature Driven Development)
- BDD (Behavior Driven Development)
- ....

Scrum

- "The New New Product Development Game" in *Harvard Business Review*, 1986.
  - "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."
- *Wicked Problems, Righteous Solutions* by DeGrace and Stahl, 1990.
  - First mention of Scrum in a software context

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**. Our **teams self-manage** 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 for another iteration.

Scrum Origins

- Jeff Sutherland
  - Initial Scrums at Easel Corp in 1993
  - IDX and nearly 600 people doing Scrum
  - Not just for trivial projects
    - FDA-approved, life-critical software for x-rays and MRIs
- Ken Schwaber
  - ADM / PatientKeeper
  - Initial definitions of Scrum at OOPSLA 96 with Sutherland
- Mike Beedle
  - Scrum patterns in PLOPD4

"The Origins of Scrum", Ken Schwaber

Scrum has been used in…

- Independent Software Vendors (ISVs)
- Fortune 100 companies
- Small startups
- Internal development
- Contract development

- **Google**
- **Microsoft**
- **IBM**
- **HP**
- **Yahoo**
- **Nokia**
- **Motorola**
- **Xerox**
- **Adobe Systems**
- **Bank of America**
- **BBC New Media Dept**
- **Philips**
- **Novell**
- **SAP**
- **Sun**
- **....**

Fuente: http://scrumalliance.pbwiki.com/Firms%20Using%20Scrum

Scrum has been used for…

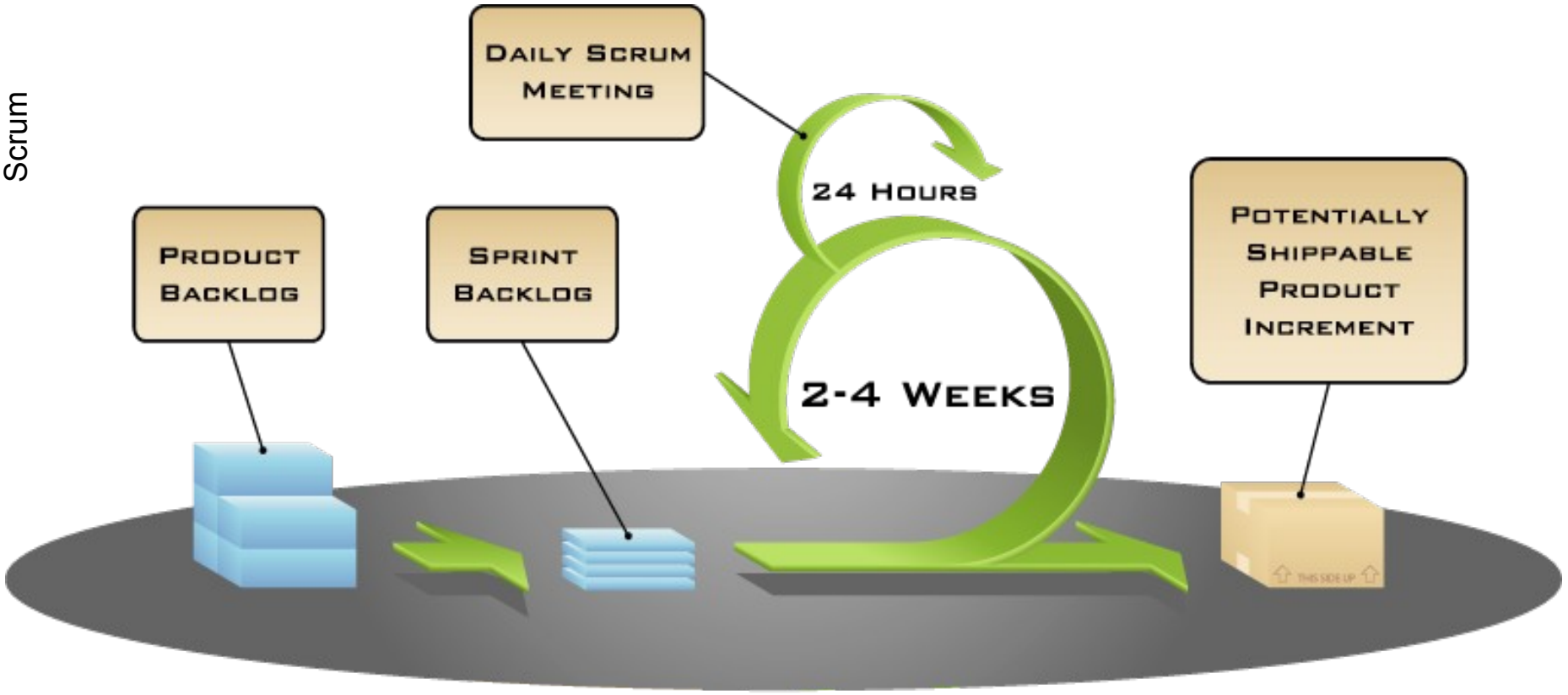
- FDA-approved, life-critical software for x-rays and MRIs
- Enterprise workflow systems
- Financial payment applications
- Biotech
- Call center systems
- Tunable laser subsystems for fiber optic networks
- Application development environments
- 24x7 with 99.99999% uptime requirements
- Multi-terabyte database applications
- Media-neutral magazine products
- Web news products

Characteristics

- Self-organizing teams
- Product progresses in a series of 2 weeks-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”

Overview

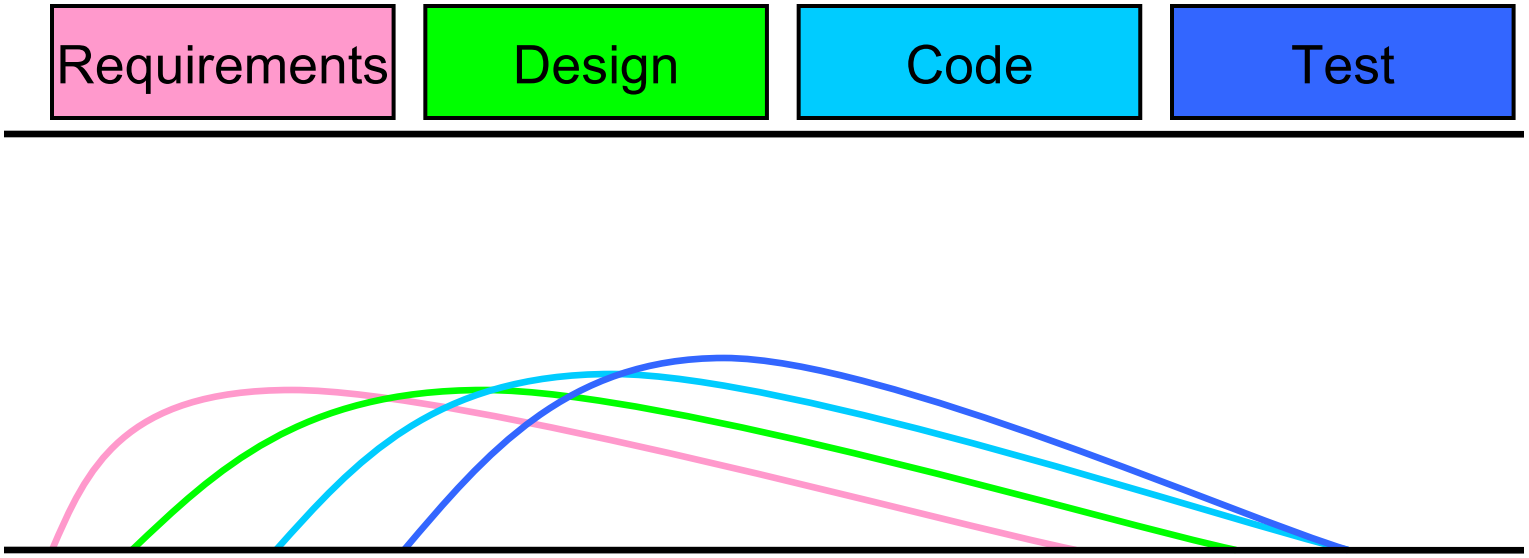
Scrum



Sprints

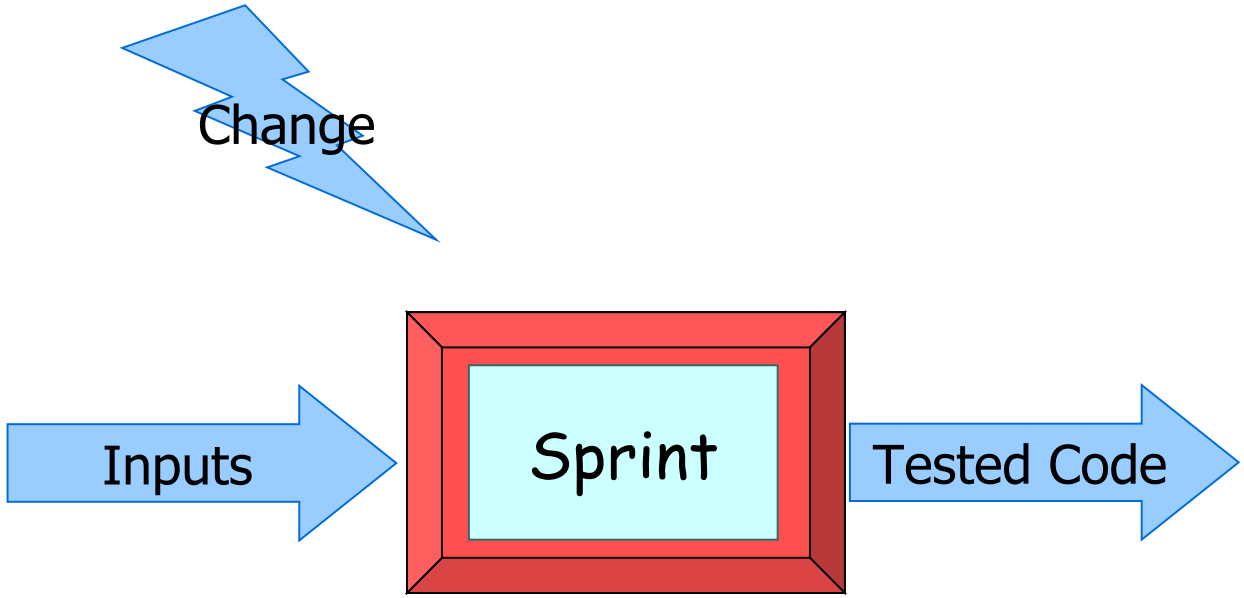
- Scrum projects make progress in a series of “sprints” or iterations.
  - Short, timeboxed, complete
- Target duration is one month
  - +/- a week or two
    - But, a constant duration leads to a better rhythm
- Product is designed, coded, and tested during the sprint

Sequential vs. Overlapping Development



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

No changes during the sprint



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

Constraints

- A complete list of constraints put on the team during a Sprint:

- </end of list>

Scrum Framework

- **Roles** : Product Owner, ScrumMaster, Team
- **Ceremonies** : Sprint Planning, Sprint Review, Sprint Retrospective, & Daily Scrum Meeting
- **Artifacts** : Product Backlog, Sprint Backlog, and Burndown Chart

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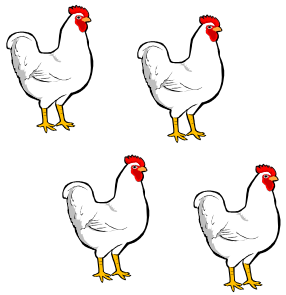
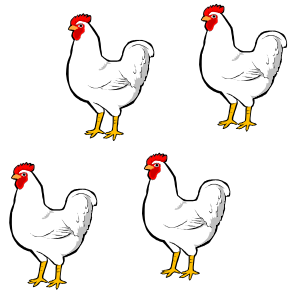
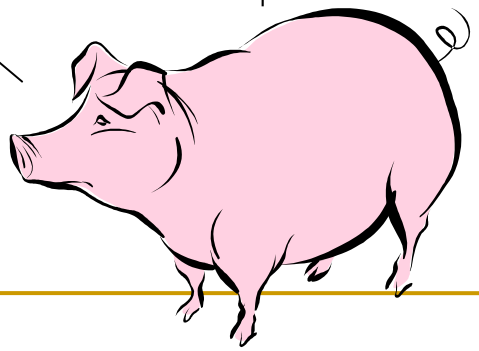
Roles

Scrum





Team



Scrum Master

Product Owner

Product Owner

- 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

- 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 Scrum Team

- Typically 5-10 people
- Cross-functional
  - QA, Programmers, UI Designers, etc.
- Members should be full-time
  - May be exceptions (e.g., System Admin, etc.)
- Teams are self-organizing
  - Ideally, no titles but rarely a possibility
- Membership can change only between sprints

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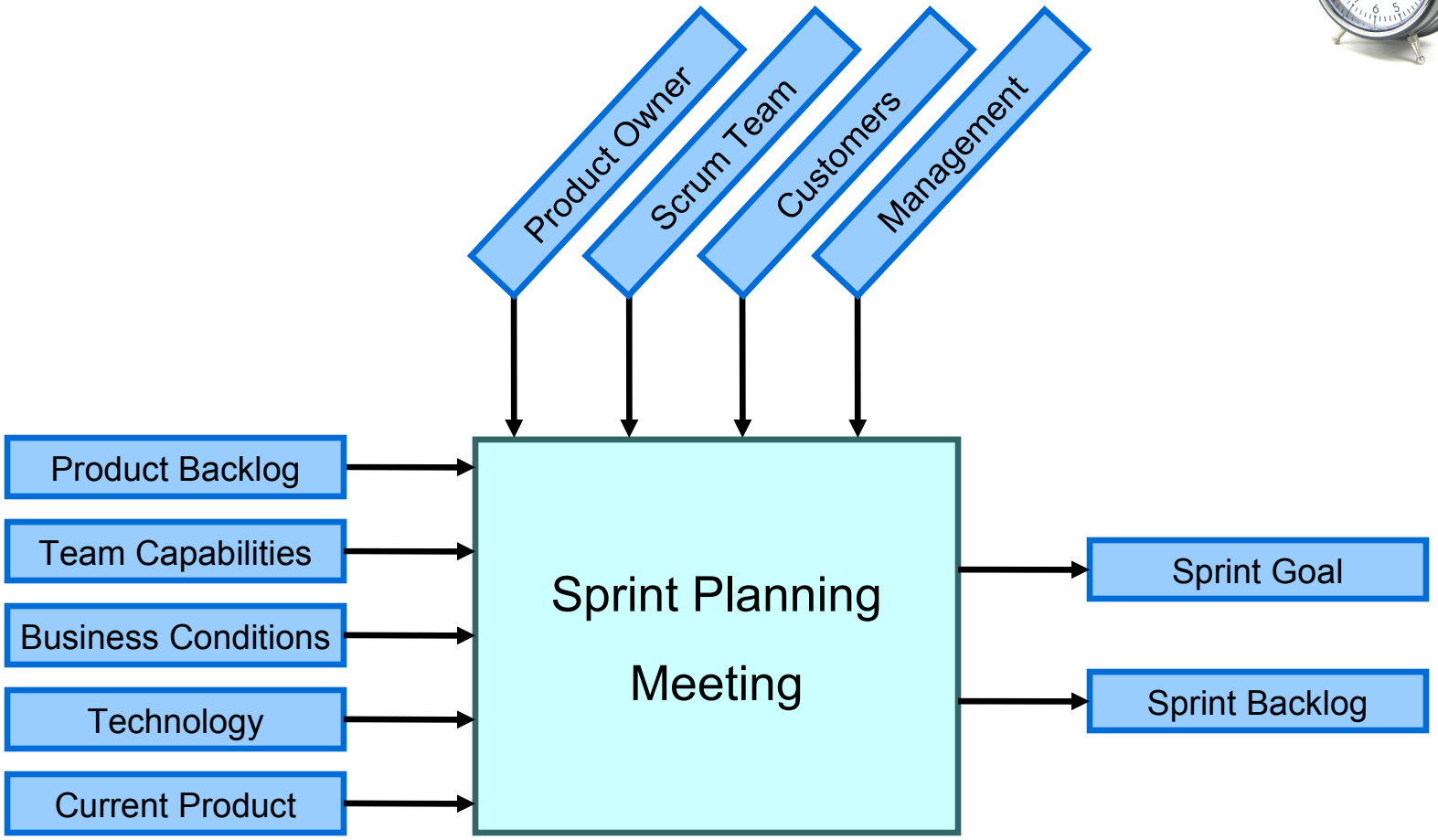
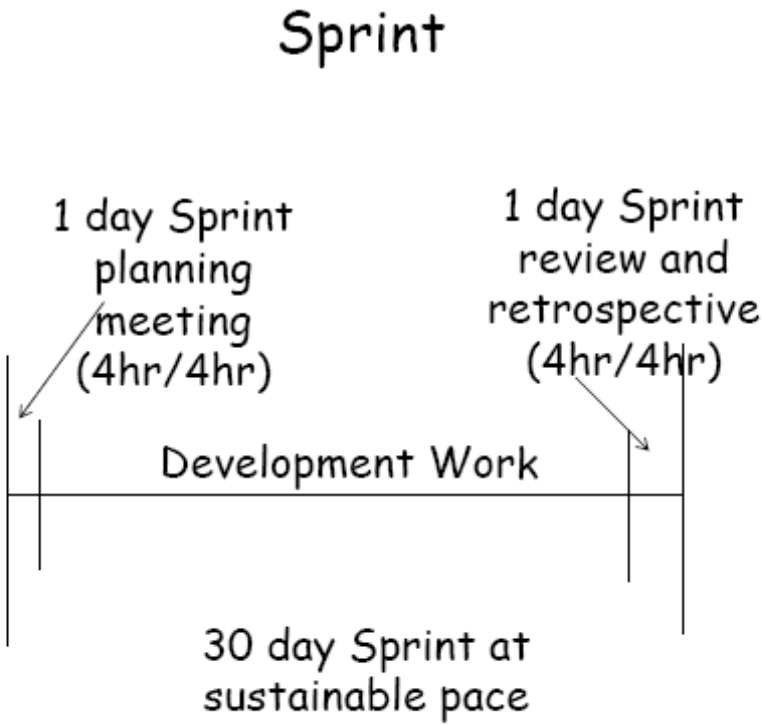
Sprint Planning Meeting

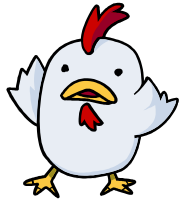


How much ceremony?



Daily Scrum meetings

- Parameters
  - Daily
  - 15-minutes
  - Stand-up
  - Not for problem solving
- Three questions:
  1. What did you do yesterday
  2. What will you do today?
  3. What obstacles are in your way?
- Chickens and pigs are invited
  - Help avoid other unnecessary meetings
- Only pigs can talk



Questions about Scrum meetings?

- Why daily?
  - "How does a project get to be a year late?"
    - "One day at a time."
      - Fred Brooks, *The Mythical Man-Month.*
- Can Scrum meetings be replaced by emailed status reports?
  - No
    - Entire team sees the whole picture every day
    - Create peer pressure to do what you say you'll do

Sprint Review Meeting

- 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
- Participants
  - Customers
  - Management
  - Product Owner
  - Other engineers

Sprint Retrospective Meeting

- Scrum Team only
  - Sometime the Product Owner is included
- Feedback meeting
- Three questions
  - Start
  - Stop
  - Continue
- … or two
  - Keep
  - Change

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Product Backlog

- A list of all desired work on the project
  - Usually a combination of
    - story-based work (“let user search and replace”)
    - task-based work (“improve exception handling”)
- List is prioritized by the Product Owner
  - Typically a Product Manager, Marketing, Internal Customer, etc.

Sample Product Backlog

Scrum

	Item #	Description	Est	By
Very High				
	1	**Finish database versioning**	16	KH
	2	**Get rid of unneeded shared Java in database**	8	KH
	-	**Add licensing**	-	-
	3	Concurrent user licensing	16	TG
	4	Demo / Eval licensing	16	TG
		Analysis Manager		
	5	File formats we support are out of date	160	TG
	6	Round-trip Analyses	250	MC
High				
	-	**Enforce unique names**	-	-
	7	In main application	24	KH
	8	In import	24	AM
	-	**Admin Program**	-	-
	9	Delete users	4	JM
	-	**Analysis Manager**	-	-
	10	When items are removed from an analysis, they should show up again in the pick list in lower 1/2 of the analysis tab	8	TG
	-	**Query**	-	-
	11	Support for wildcards when searching	16	T&A
	12	Sorting of number attributes to handle negative numbers	16	T&A
	13	Horizontal scrolling	12	T&A
	-	**Population Genetics**	-	-
	14	Frequency Manager	400	T&M
	15	Query Tool	400	T&M
	16	Additional Editors (which ones)	240	T&M
	17	Study Variable Manager	240	T&M
	18	Haplotypes	320	T&M
	19	**Add icons for v1.1 or 2.0**	-	-
	-	**Pedigree Manager**	-	-
	20	Validate Derived kindred	4	KH
Medium				
	-	**Explorer**	-	-
	21	Launch tab synchronization (only show queries/analyses for logged in users)	8	T&A
	22	Delete settings (?)	4	T&A

The Sprint Goal

- A short “theme” for the sprint:

Life Sciences

“Support features necessary for population genetics studies.”

Database Application

“Make the application run on SQL Server in addition to Oracle.”

Financial Services

“Support more technical indicators than company ABC with real-time, streaming data.”

From Sprint Goal to Sprint Backlog

- Scrum team takes the Sprint Goal and decides what tasks are necessary
- Team self-organizes around how they'll meet the Sprint Goal
  - Manager doesn't assign tasks to individuals
- Managers don't make decisions for the team
- Sprint Backlog is created

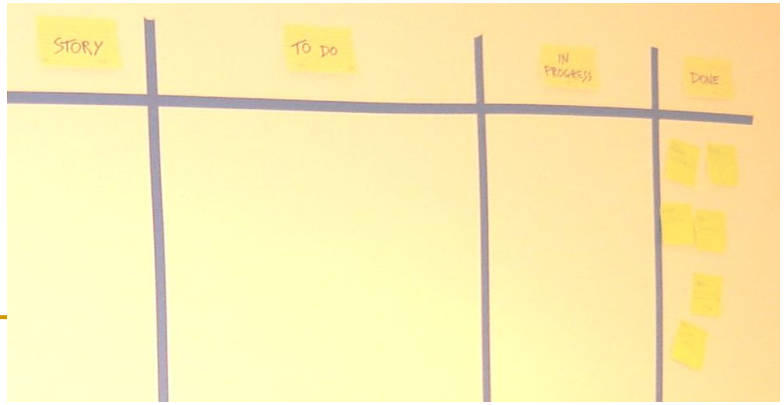
Sample Sprint Backlog

Scrum

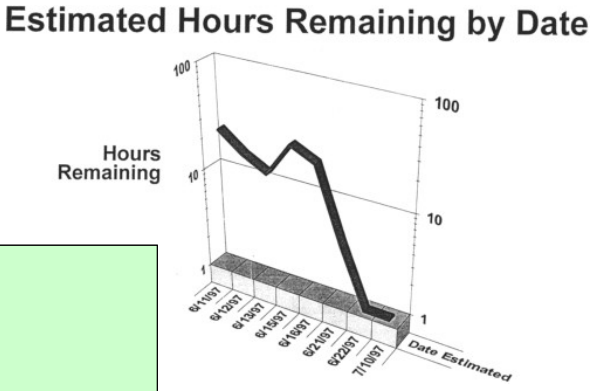
		Days Left in Sprint	15	13	10	8	
Who	Description		7/22/2002	7/24/2002	7/26/2002	7/31/2002	
		Total Estimated Hours:	**554**	**458**	**362**	**270**	**0**
-	**User's Guide**		-	-	-	-	-
SM	Start on Study Variable chapter first draft		16	16	16	16	
SM	Import chapter first draft		40	24	6	6	
SM	Export chapter first draft		24	24	24	6	
	Misc. Small Bugs						
JM	Fix connection leak		40				
JM	Delete queries		8	8			
JM	Delete analysis		8	8			
TG	Fix tear-off messaging bug		8	8			
JM	View pedigree for kindred column in a result set		2	2	2	2	
AM	Derived kindred validation		8				
	Environment						
TG	Install CVS		16	16			
TBD	Move code into CVS		40	40	40	40	
TBD	Move to JDK 1.4		8	8	8	8	
	Database						
KH	Killing Oracle sessions		8	8	8	8	
KH	Finish 2.206 database patch		8	2			
KH	Make a 2.207 database patch		8	8	8	8	
KH	Figure out why 461 indexes are created		4				

Sprint Backlog during the Sprint

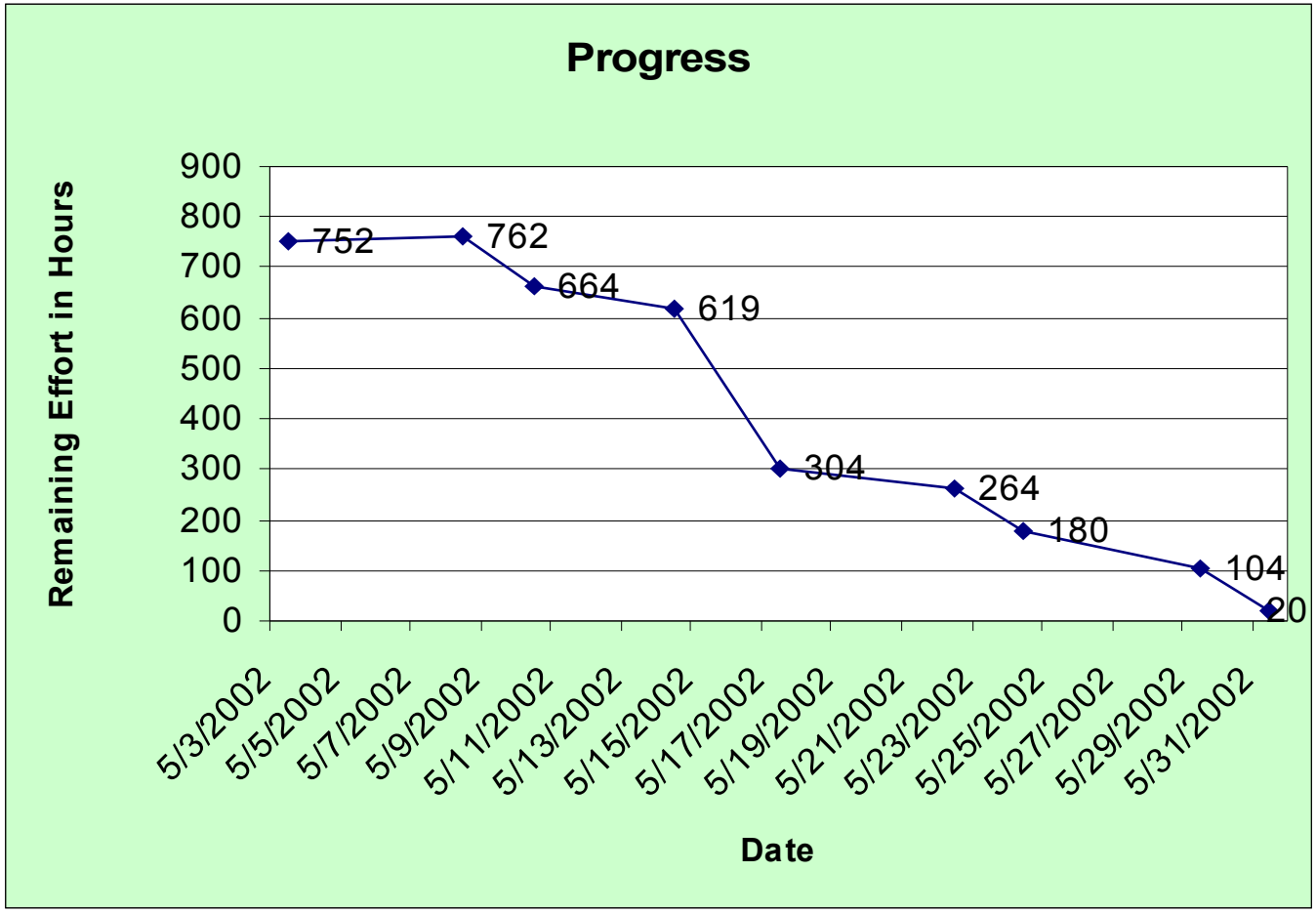
- Changes
  - Team adds new tasks whenever they need to in order to meet the Sprint Goal
  - Team can remove unnecessary tasks
  - But: Sprint Backlog can only be updated by the team
- Estimates are updated whenever there's new information



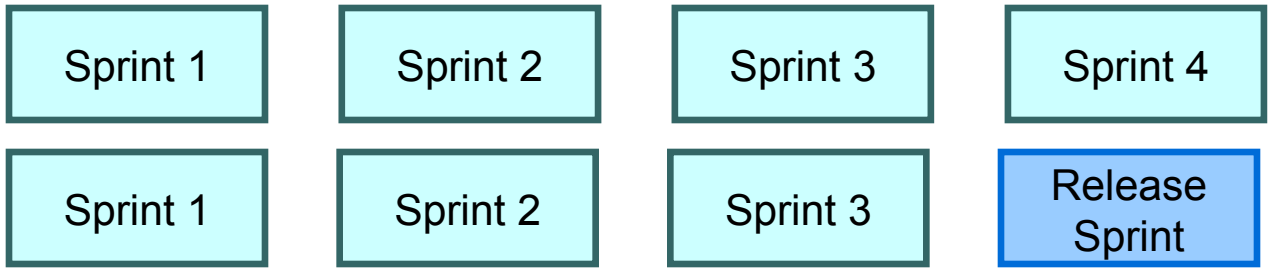
Sprint Burndown Chart



Scrum

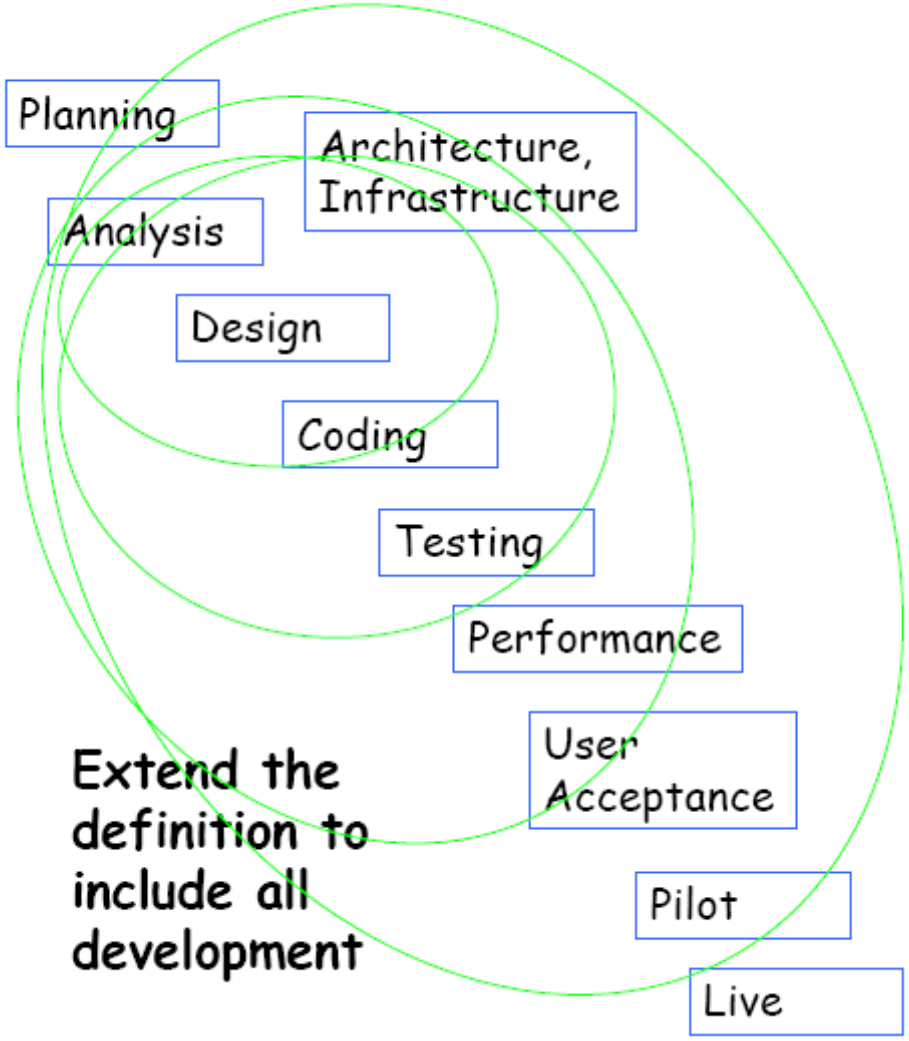


Release Sprints



- If necessary, during “regular” sprints target *friendly first use*
  - Beta customers and similar can use immediately after sprint
- During a “release sprint”
  - Team prepares a product for release
  - Useful during
    - active beta periods
    - when transitioning a team to Scrum
    - if quality isn’t quite where it should be on an initial release
- Not a part of standard Scrum, just something I’ve found useful

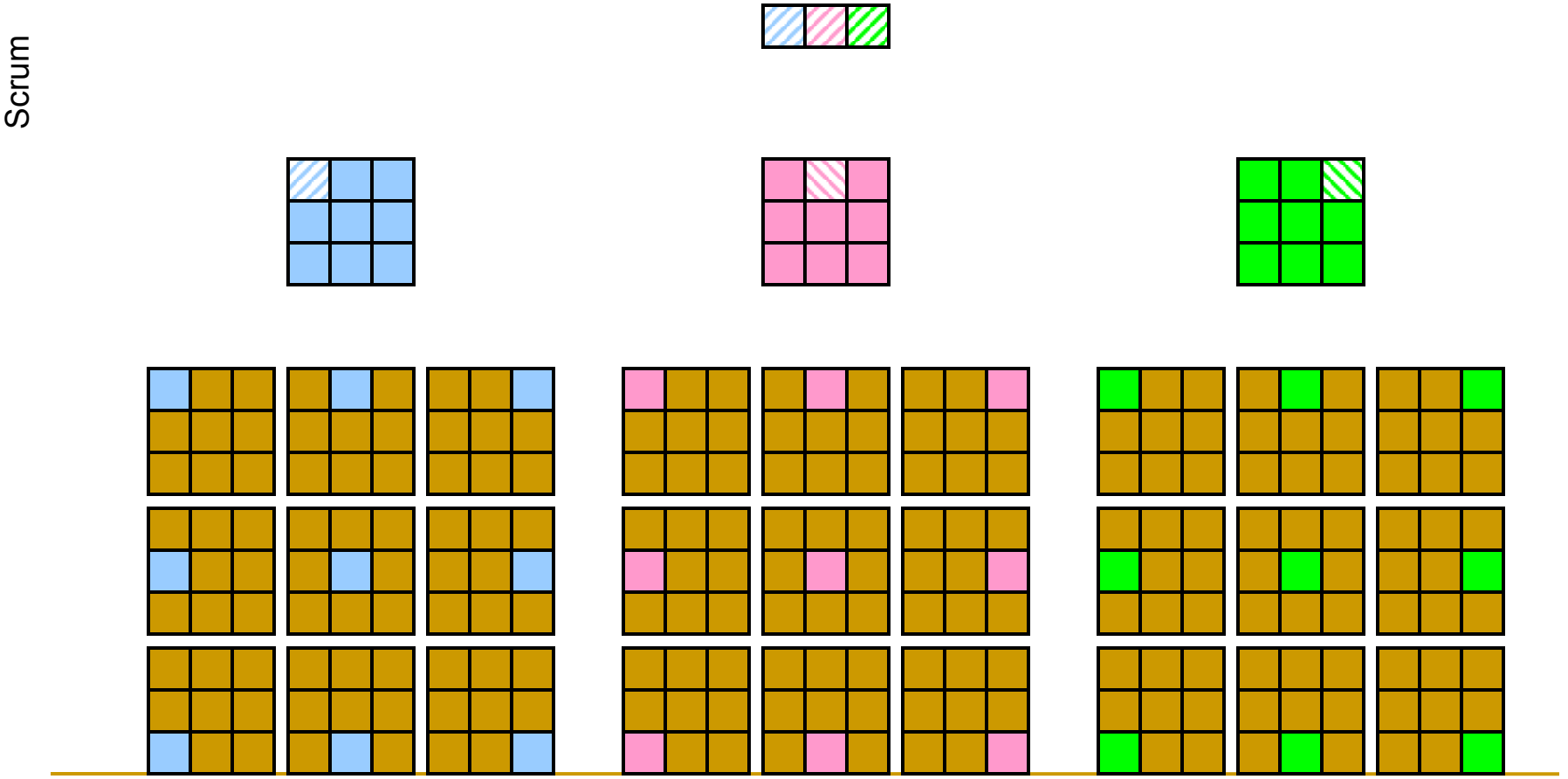
Scope of "Done" changes



Scalability of Scrum

- Typical Scrum team is 5-10 people
- Sutherland used Scrum in groups of 500+
- Mike Cohn has used Scrum in groups 100+

Scrum of Scrums / Meta-Scrum



Questions?

Where to go next? Groups

- http://groups.yahoo.com/group/scrumdevelopment/
  This is the place to ask questions and hear from others who have run into the same kind of problems. Try not to be put off by the volume of emails, you'll no doubt find ways to filter appropriately over time.

  http://tech.groups.yahoo.com/group/agileplanning/
  Mike Cohn's group set up to discuss Agile Estimation and Planning. Mike is active on this list, and will respond to questions personally.

  http://finance.groups.yahoo.com/group/retrospectives/
  The retrospectives group

  http://groups.yahoo.com/group/agile-usability/
  This group is aimed at writers, designers, interaction analysts, etc.

  http://groups.yahoo.com/group/agile-testing/
  For testers, and anyone interested in testing. Again lots of traffic.

  http://groups.yahoo.com/group/laasd
  Latin american agile software development (en español)

Where to go next? Introductory Books

"Agile & Iterative Development: A Managers Guide", Craig Larman
http://www.amazon.com/gp/product/0131111558/
The beginners guide to Agile: good overviews of the whole paradigm, and summaries of the different approaches.

"Agile Software Development with Scrum", Ken Schwaber & Mike Beedle
http://www.amazon.com/gp/product/0130676349
The original Scrum book. Good, clear overview of the practices and principles of Scrum. It is somewhat out-of-date now, as Scrum has progressed since the book was written, but it is still a valuable read.

"Extreme Programming Explained: Embrace Change", Kent Beck
http://www.amazon.com/gp/product/0321278658/
One of the first Agile books. Focuses mainly (but not solely) on the engineering practices, and supplies good overall context for creating an Agile organization.

“Agile Project Management with Scrum”, Ken Schwaber

Where to go next? Web sites

http://agilealliance.org
The Agile Alliance site, for all Agile things.

http://scrumalliance.org
The Scrum Alliance site - improving... Consider how to contribute.

http://controlchaos.com
Ken Schwaber's site.

http://mountaingoatsoftware.com/scrum
Mike Cohn's introduction to Scrum. May be helpful for a quick overview/reminder of the practices/roles/artifacts

http://agilemanifesto.org & http://agilemanifesto.org/principles.html
The Agile Manifesto and Agile Principles

http://danube.com
Danube Technologies' web site. Home of the free ScrumWorks tool.
Danube Technologies and Agile Thinking partner frequently on CSM training and other consulting engagements.

http://agilethinking.net
Tobias Meyer's web site.

Product/Project Management Material

A good starting paper for product managers is "Want Better Software? Just Ask" by Mike Cohn
http://www.mountaingoatsoftware.com/articles/WantBetterSoftware.pdf

Also take a look at Mike's other available papers. Mike Cohn has a very pragmatic approach to Scrum and writes in a very clear and succint way:
http://www.mountaingoatsoftware.com/articles?page=1

I'd also recommend Mike Cohn's first book, "User Stories Applied"
http://www.amazon.com/gp/product/0321205685/
It covers the aspects of writing, estimating, prioritizing and commiting to product requirements that we covered on this course.

Jim Highsmith: Agile Project Management - Creating Innovative Products
http://www.amazon.com/gp/product/0321219775/
Good overview of Agile approaches to project management. This is more "managerial" than I like, personally, but offers some good ideas for working with customers.

Configuration Management

Brad Appleton's home page is at http://www.cmcrossroads.com/bradapp/ and his blog is at http://bradapp.blogspot.com/ - some very interesting posts here.

RUP and Agile

David Chilcott at http://outformations.com -- info@outformations.com
He was a RUP guy for years and has recently become involved in the Scrum/Agile world.

Scott Ambler at http://ambysoft.com/
Scott has written many articles on this topic. You can find links to all on his web site.

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