

# An Introduction to Scrum



**Bob Tarne, PMP/SCM/CSSBB**  
**February 9, 2009**

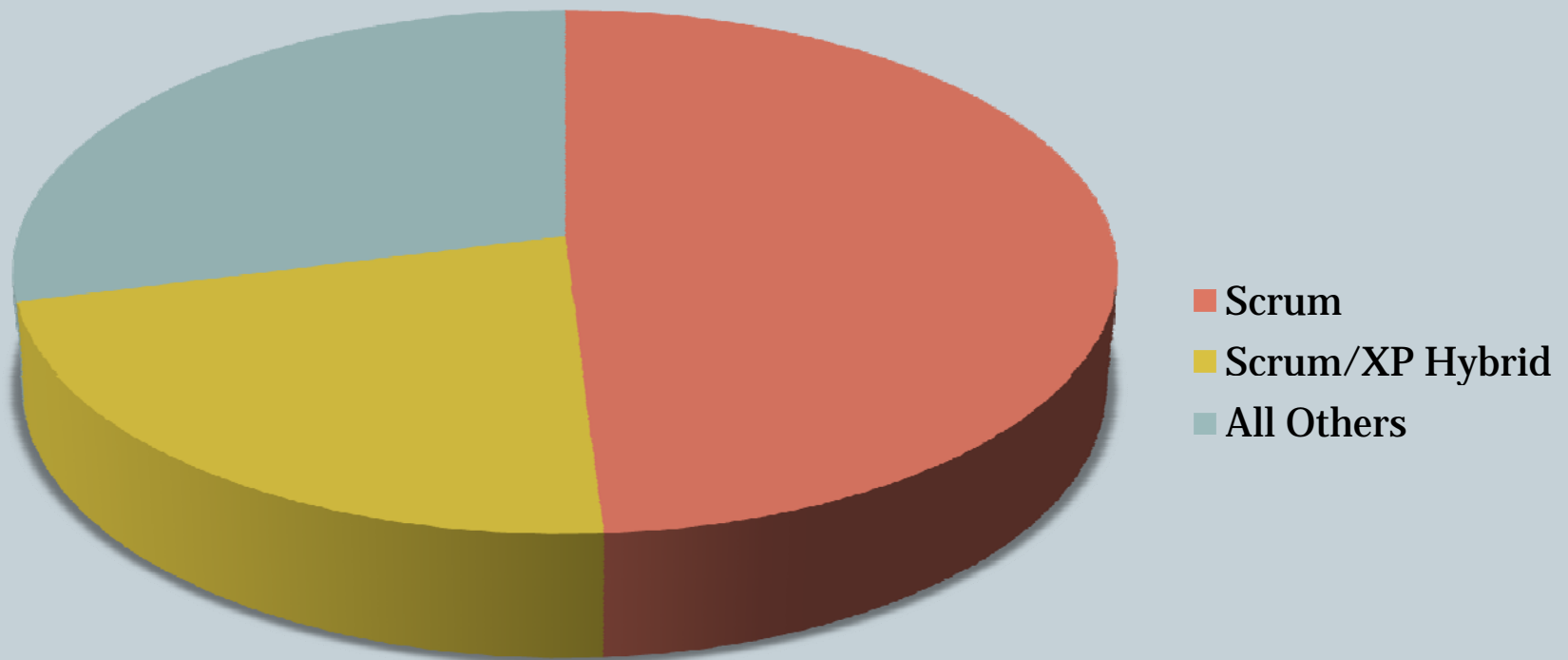
# Agenda



- **Why Scrum**
- **Agile Manifesto**
- **Background**
- **How it works**

# Why Scrum?

# Penetration



Taken From The Agile Development Survey 2008 by VersionOne

# Certification



# The Purple Cow



# Why Agile?

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- **Growth**
  - 40,000 agile certifications issued
  - Approximately 40,000 members of agile associations
- **PMI agile community to launch in May**
- **Agile can improve project performance**
  - 90% of users improve their ability to manage changes
  - 70% reported increased quality
  - 65% reported decreased time to market

# Manifesto for Agile Software Development



**We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:**

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

**That is, while there is value in the items on the right, we value the items on the left more.**

© 2001 Kent Beck, Mike Beedle, Arie van Bennekum, Alistair Cockburn, Ward Cunningham, Martin Fowler, James Grenning, Jim Highsmith, Andrew Hunt, Ron Jeffries, Jon Kern, Brian Marick, Robert C. Martin, Steve Mellor, Ken Schwaber, Jeff Sutherland, Dave Thomas

# Scrum

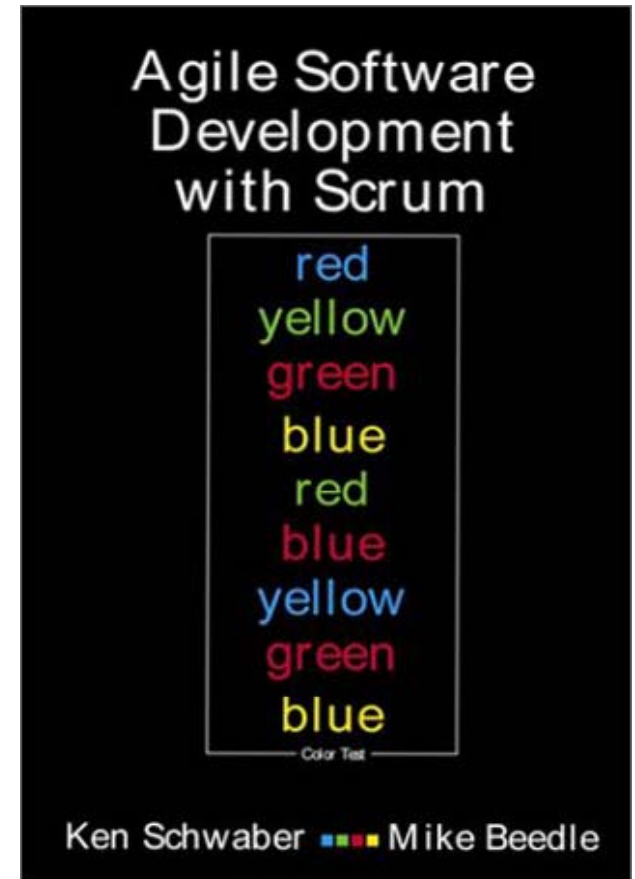


- “The New New Product Development Game” in *Harvard Business Review*, 1986.
  - “The... ‘relay race’ approach to product development...may conflict with the goals of maximum speed and flexibility. Instead a holistic or ‘rugby’ approach—where a team tries to go the distance as a unit, passing the ball 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 origins



- **Jeff Sutherland**
  - Initial Scrums at Easel Corp in 1993
- **Ken Schwaber**
  - ADM
  - Initial definitions of Scrum at OOPSLA 95 with Sutherland
- **Mike Beedle**
  - Co-author of 2001 book with Schwaber



# Scrum has been used in...



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

# Scrum has been used for...



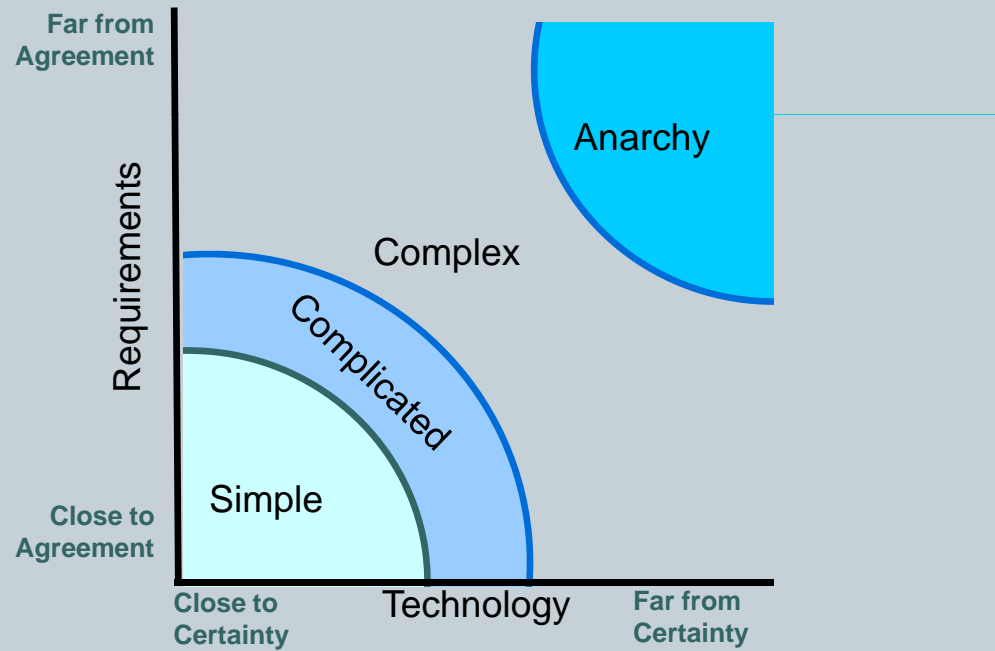
- FDA-approved, life-critical software for x-rays and MRIs
- Enterprise workflow systems
- Financial payment applications
- Biotech
- Call center systems
- Tunable laser subsystems for fiber optic networks
- Application development environments
- 24x7 with 99.99999% uptime requirements
- Multi-terabyte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

# Characteristics



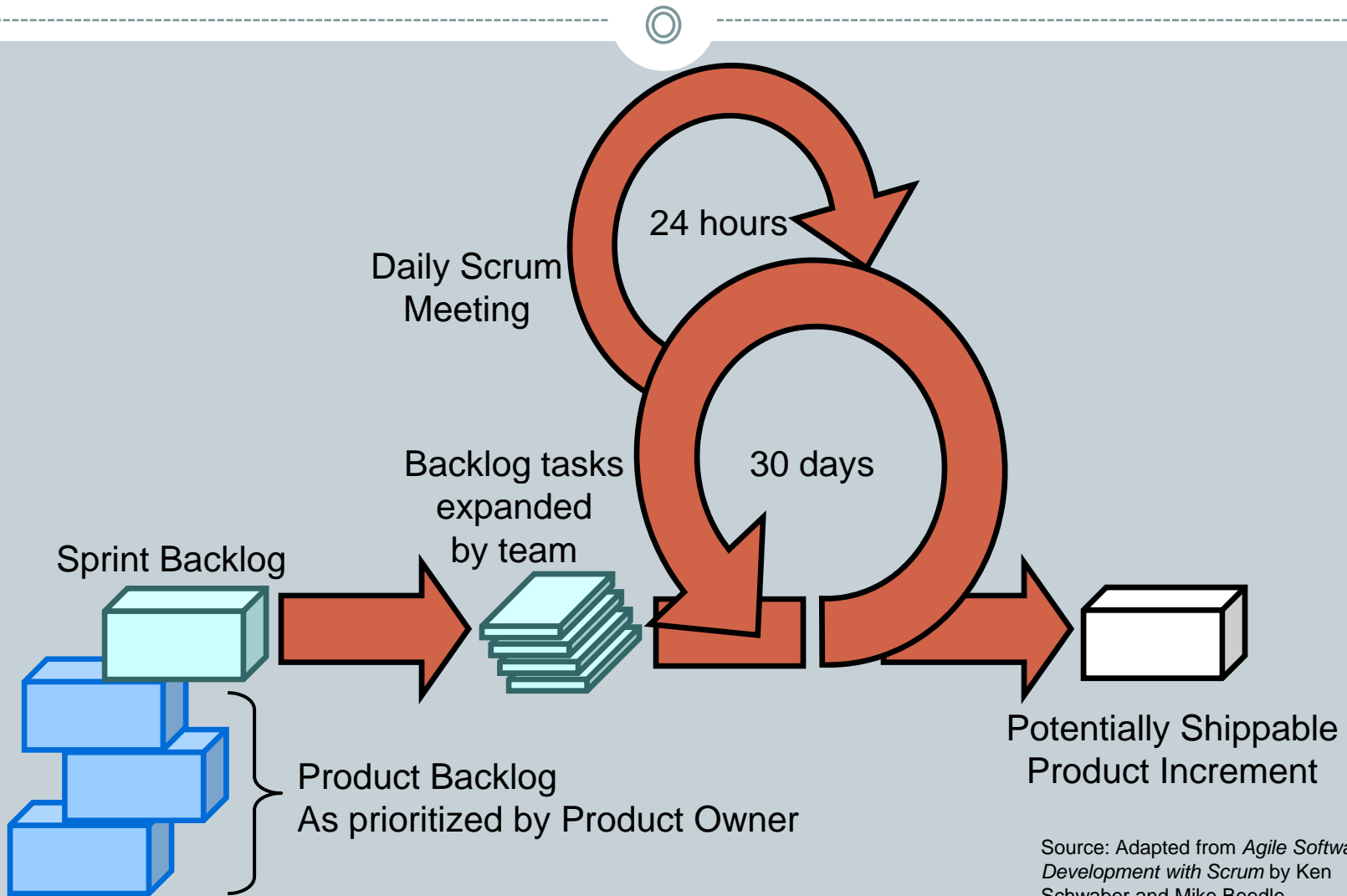
- One of the “agile processes”
- Self-organizing teams
- Product progresses in a series of month-long “sprints”
- Requirements are captured as items in a list of “product backlog”
- No specific engineering practices prescribed
- Uses generative rules to create an agile environment for delivering projects

# Project Noise Level



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

# Scrum in 1 Slide

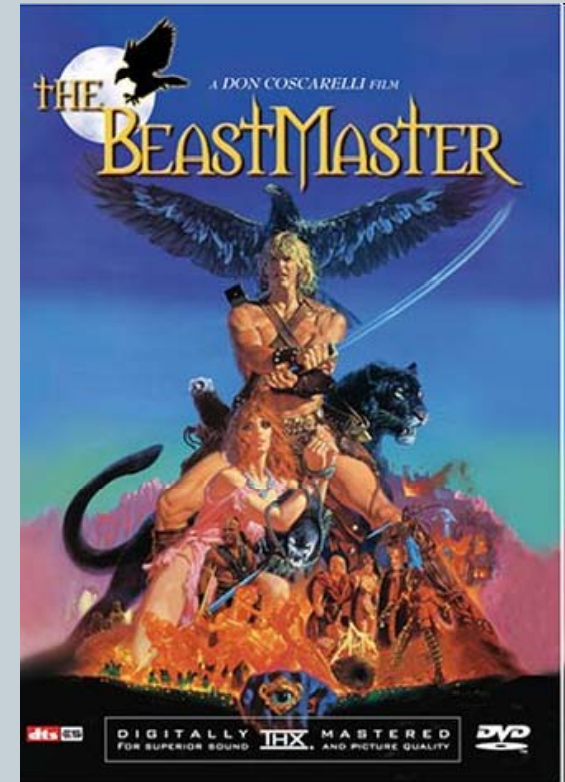


Source: Adapted from *Agile Software Development with Scrum* by Ken Schwaber and Mike Beedle.

# The Scrum Master



- Represents management to the project
- Typically filled by a Project Manager or Team Leader
- Responsible for enacting Scrum values and practices
- Main job is to remove impediments



# 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**
  - What to do if a team self-organizes someone off the team??
  - Ideally, no titles but rarely a possibility
- **Membership can change only between sprints**

# Workload Management



By Clark & Vizdos

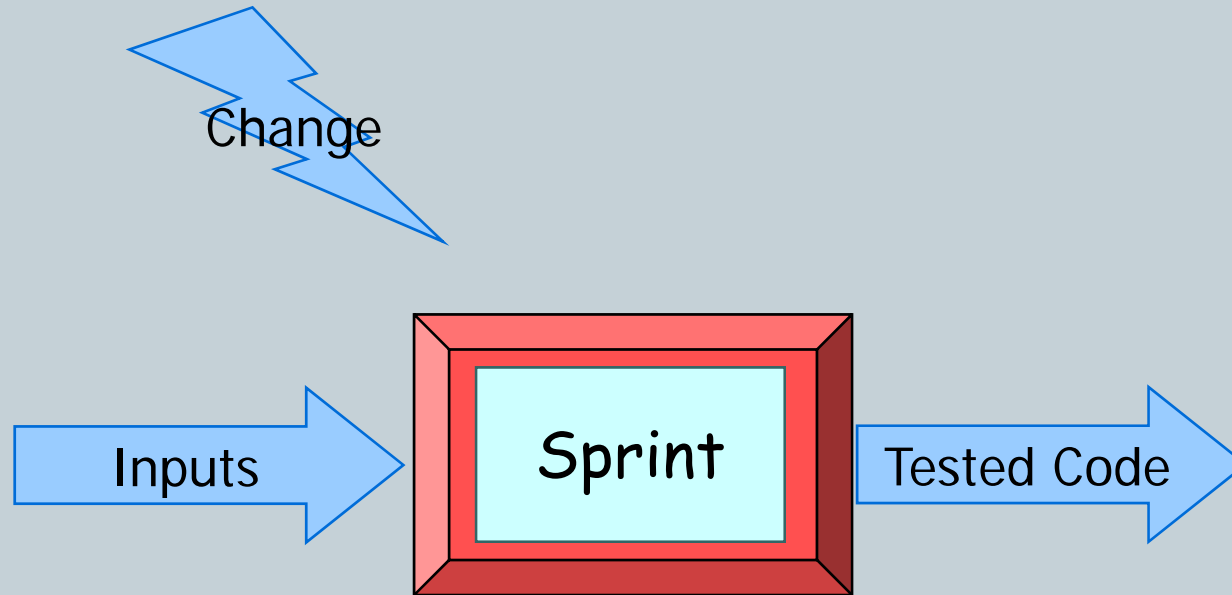
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# Sprints



- **Scrum projects make progress in a series of “sprints”**
  - Analogous to XP iterations
- **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**

# No changes during the sprint



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

# Product Backlog

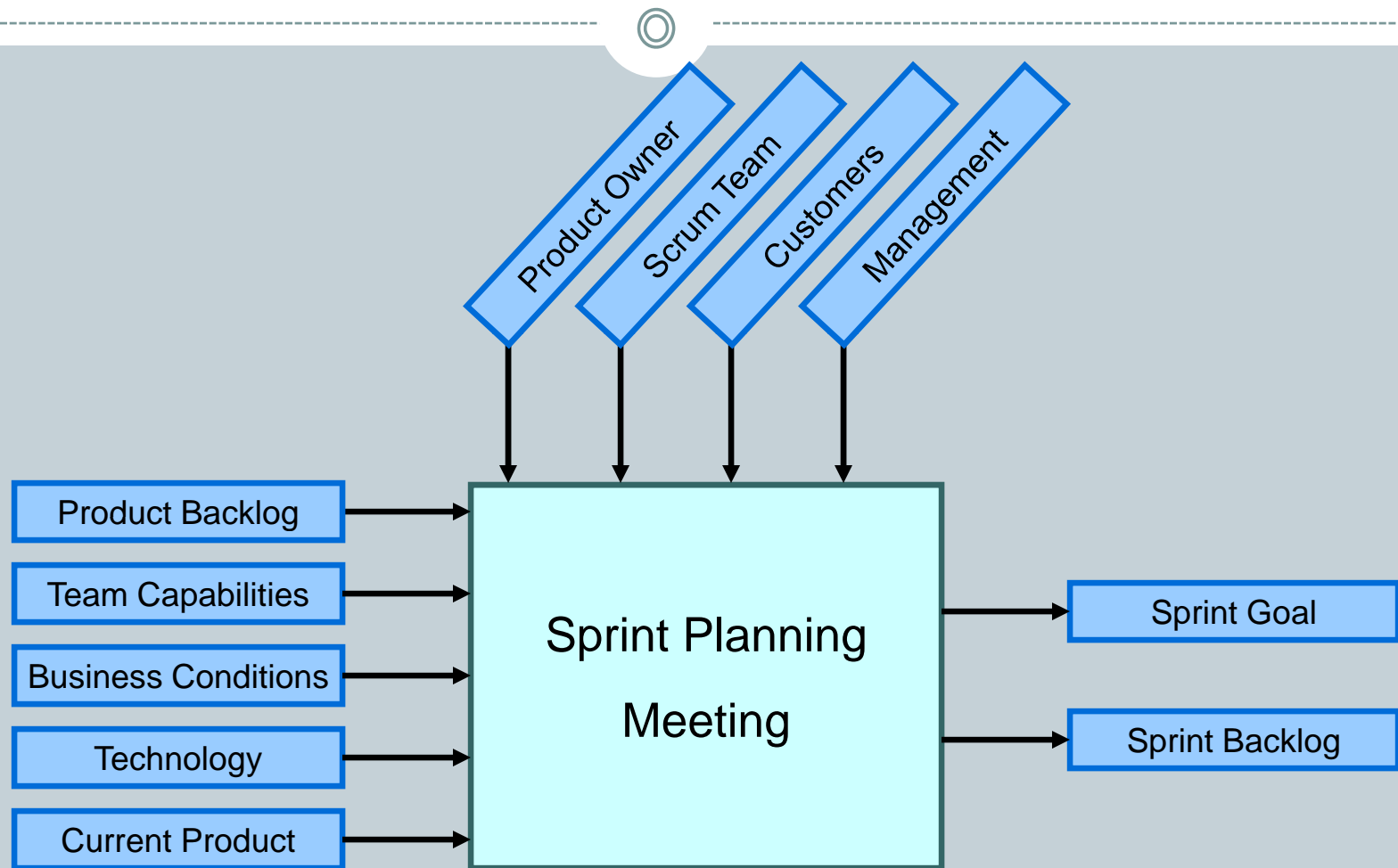


- **A list of all desired work on the project**
  - Usually a combination of
    - ✦ story-based work (“let user search and replace”)
    - ✦ task-based work (“improve exception handling”)
- **List is prioritized by the Product Owner**
  - Typically a Product Manager, Marketing, Internal Customer, etc.

# Sample Product Backlog

	Item #	Description	Est	By
<b>Very High</b>				
	1	<b>Finish database versioning</b>	16	KH
	2	<b>Get rid of unneeded shared Java in database</b>	8	KH
		- <b>Add licensing</b>	-	-
	3	Concurrent user licensing	16	TG
	4	Demo / Eval licensing	16	TG
		<b>Analysis Manager</b>		
	5	File formats we support are out of date	160	TG
	6	Round-trip Analyses	250	MC
<b>High</b>				
		- <b>Enforce unique names</b>	-	-
	7	In main application	24	KH
	8	In import	24	AM
		- <b>Admin Program</b>	-	-
	9	Delete users	4	JM
		- <b>Analysis Manager</b>	-	-
	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
		- <b>Query</b>	-	-
	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
		- <b>Population Genetics</b>	-	-
	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	<b>Add icons for v1.1 or 2.0</b>	-	-
		- <b>Pedigree Manager</b>	-	-
	20	Validate Derived kindred	4	KH
<b>Medium</b>				
		- <b>Explorer</b>	-	-
	21	Launch tab synchronization (only show queries/analyses for logged in users)	8	T&A
	22	Delete settings (?)	4	T&A

# Sprint Planning Meeting



# 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



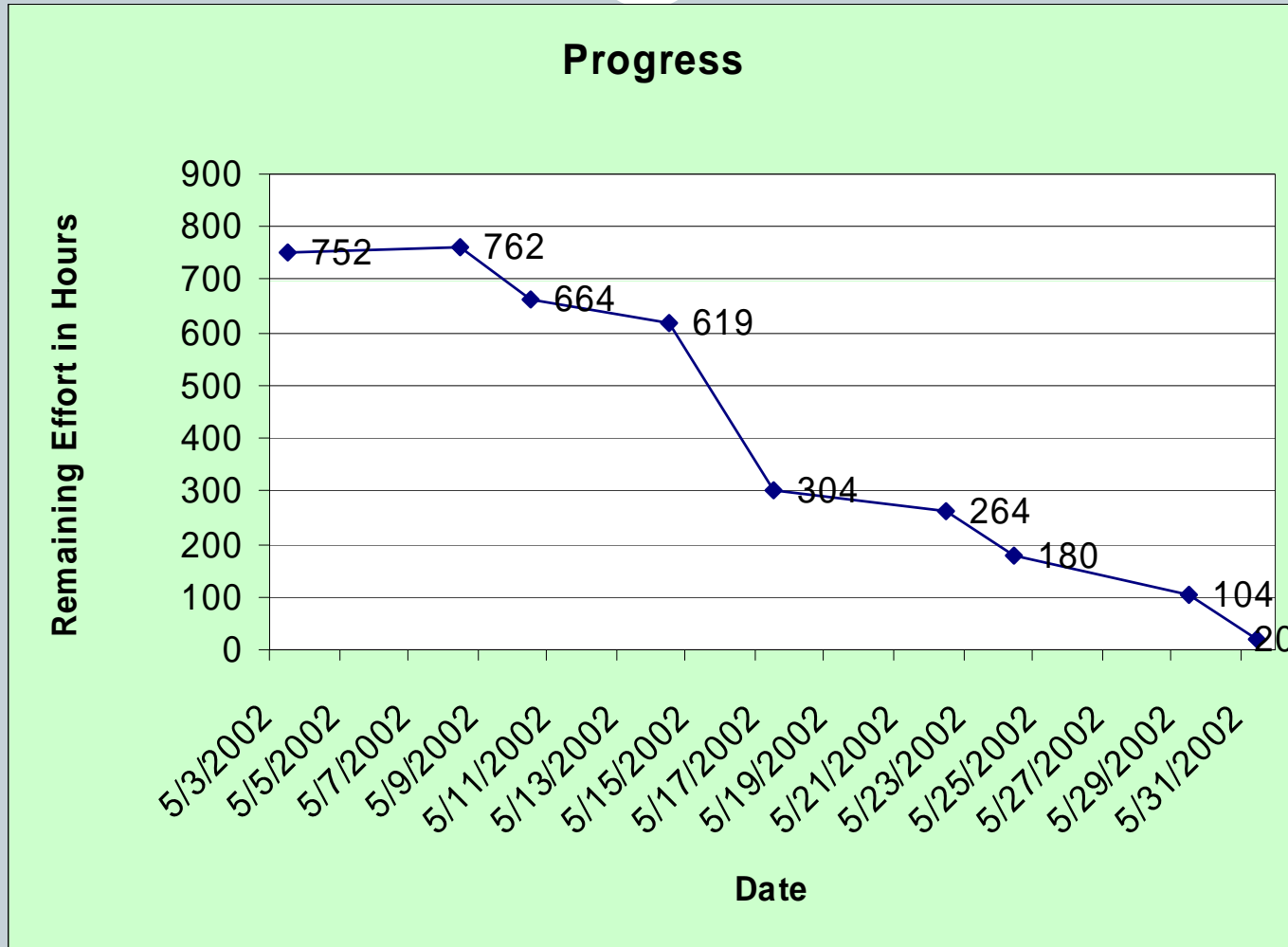
		Days Left in Sprint				
		15	13	10	8	
Who	Description	7/22/2002	7/24/2002	7/26/2002	7/31/2002	
<b>Total Estimated Hours:</b>		<b>554</b>	<b>458</b>	<b>362</b>	<b>270</b>	<b>0</b>
-	<b>User's Guide</b>	-	-	-	-	-
SM	Start on Study Variable chapter first draft	16	16	16	16	
SM	Import chapter first draft	40	24	6	6	
SM	Export chapter first draft	24	24	24	6	
<b>Misc. Small Bugs</b>						
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				
<b>Environment</b>						
TG	Install CVS	16	16			
TBD	Move code into CVS	40	40	40	40	
TBD	Move to JDK 1.4	8	8	8	8	
<b>Database</b>						
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



# Pigs & Chickens



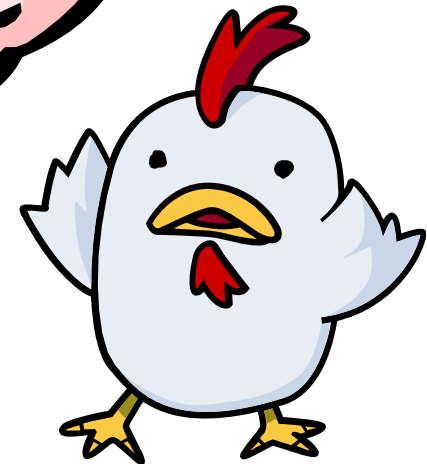
By Clark & Vizdos

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# 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

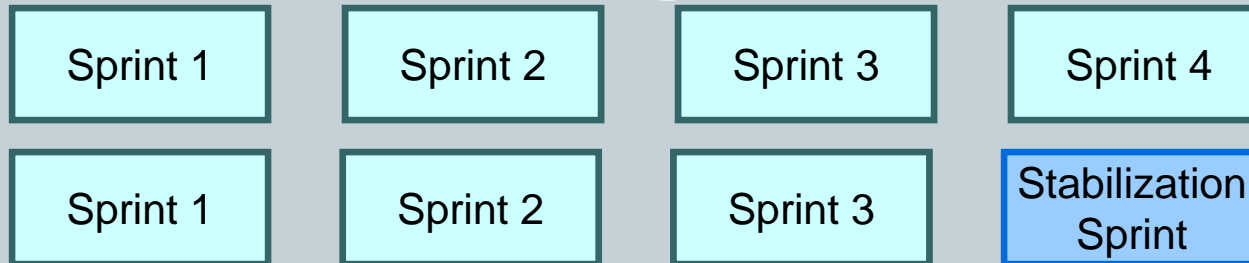
# Sprint Review Meeting



- 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



# Stabilization Sprints



- During “regular” sprints target *friendly first use*
  - Beta customers and similar can use immediately after sprint
- During “stabilization sprints”
  - 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

# Retrospectives

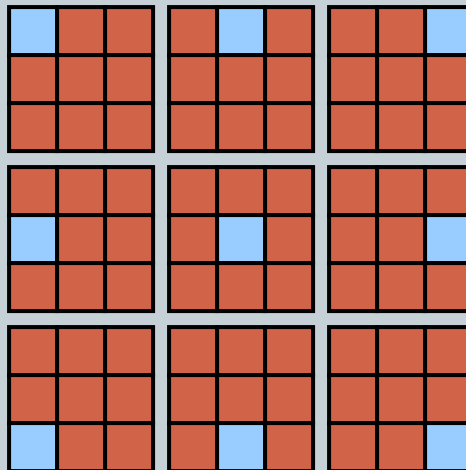
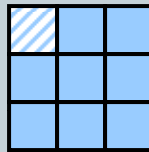


## **The Four Questions**

- What did we do well, that if we don't discuss we might forget?
- What did we learn?
- What should we do differently next time?
- What still puzzles us?

Taken from *Project Retrospectives: A Handbook for Team Reviews* by Norman L. Kerth

# Scrum of Scrums



# Where to go next?



Further Sources

- **Scrum**
  - [www.scrumalliance.org](http://www.scrumalliance.org)
  - [scrumdevelopment@yahoogroups.com](mailto:scrumdevelopment@yahoogroups.com)
  - *Agile Software Development with Scrum*
    - ✦ Ken Schwaber and Mike Beedle
  - *Agile Project Management with Scrum*
    - ✦ Ken Schwaber and Mike Beedle
  - *Agile Project Management*
    - ✦ Jim Highsmith

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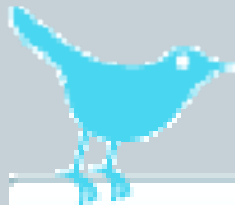


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