

A Brief Introduction to SCRUM

An Agile Methodology

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Presentation Outline

- Introduction to Scrum
- Origins of Scrum
- Definitions & Principles
- Benefits & Risks

An “agile” methodology

Supports the Agile Manifesto:

Individuals and interactions over processes and tools

Working software over comprehensive documentation

Customer collaboration over contract negotiation

Responding to change over following a plan

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Why Talk About Scrum?

- Popular
- Powerful
- Easy to learn

But.....

misunderstandings abound

Agile Methodologies

Extreme Programming

MSF for Agile Software Development

Crystal

Scrum

• Feature Driven Development

Adaptive Software Development

Dynamic Systems Development Method

“All models are wrong, some are useful.....”

George Box, industrial statistician

Popularity of the Scrum Model

- Basic principles are easy to understand
- Technology and tool agnostic
- Built on several time-tested techniques
- Utilizes currently popular approach team management

History of Scrum

- Inspired from approach defined in 1986 by H. Takeuchi and I. Nonaka
- Term “scrum” used in “Wicked Problems, Righteous Solutions” by DeGrace and Stahl in 1991
- Used as a methodology name in the book “Agile Software Development with SCRUM” by K. Schwaber and M. Beedle published in 2001.

A Rugby Scrummage



Scrum Principles

- Time-boxed
- Cross-functional teams
- Open communications
 - Within team
 - With stakeholders
- Demonstrable results
- Responsive to change

The Process

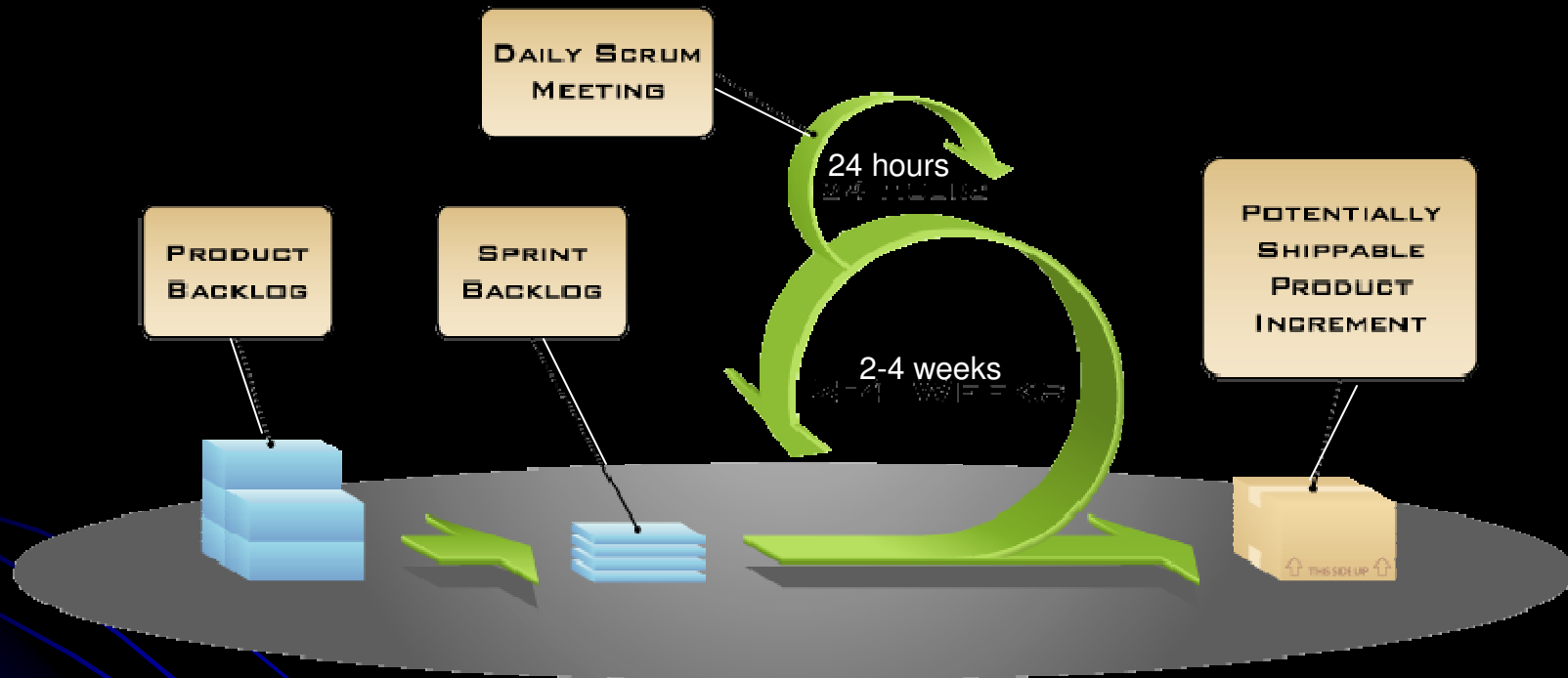


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Scrum Terms

- Team
 - Scrum Master
 - Scrum Team
 - Product Owner
 - Users & Stakeholders
- Sprint
- Backlog
 - Product
 - Sprint
- Meetings
 - Daily scrum
 - Planning
 - Review
 - Retrospective
- Burndown
 - Chart
 - Velocity

The Team

- Scrum Master
 - Not “command & control” project manager
 - Process coach
 - Team facilitator
 - Remover of roadblocks
- Scrum Team
 - Individuals responsible for the release
 - Mix of skills representing multiple disciplines
 - Usually 6-8 individuals
- Product Owner
 - Individual responsible for product
- Users & Stakeholders
 - Interested in results but not responsible for deliverables

The Sprint

- Time boxed effort
 - Usually 2 weeks to 1 month
 - Can be longer or shorter
- Defined workload
 - No changes once Sprint is begun
 - If workload changes, Sprint restarted
- Begins with Planning Meeting
- Ends with demonstrable Release

Backlogs

- Product Backlog
 - All features and functions for final product
 - Prioritized by Product Owner
- Sprint Backlog
 - Features and functions for a single Sprint
 - Tasks prioritized by Sprint Team

Meetings

- Spring Planning
- Sprint Task Definition
- Daily Scrum
- Sprint Review
- Sprint Retrospective

Scrum meetings are time-boxed!

Sprint Planning

- Product Owner and Team
- Review of Product Backlog
- Product Owner provides definition and details of features and functions
- Negotiation of what will be in Sprint
 - May identify new Product Backlog needs
 - Results in Sprint Goals

Sprint Task Definitions

- Sprint Team meeting
- Immediately follows Sprint Planning
- Breaks work into tasks
 - 4-16 hours of effort each
 - Identifies interdependencies
- Results in Sprint Backlog

Daily Scrum

- Standup 15 minute meeting
- Each team member answers 3 questions:
 - What have you done since the last meeting?
 - What will you do before the next meeting?
 - What is preventing you from accomplishing your tasks?

Sprint Review

- Results of Sprint are demonstrated to Product Owner
- Results are input to:
 - Next Sprint Planning meeting
 - Sprint Retrospective

Sprint Retrospective

- Meeting with Product Owner and Sprint Team
- Process review and modification
- Lessons learned applied in following Sprints

Scrum Estimation Technique

- Team effort
- Real time Delphi method
- Evaluate relative complexity of functions
- Assign effort to each function
- Track progress against effort estimate

Delphi Process

- Review and discuss a list of functions
- Evaluate and compare each function
- Compare evaluations and work to an agreement on estimate

Relative Estimation

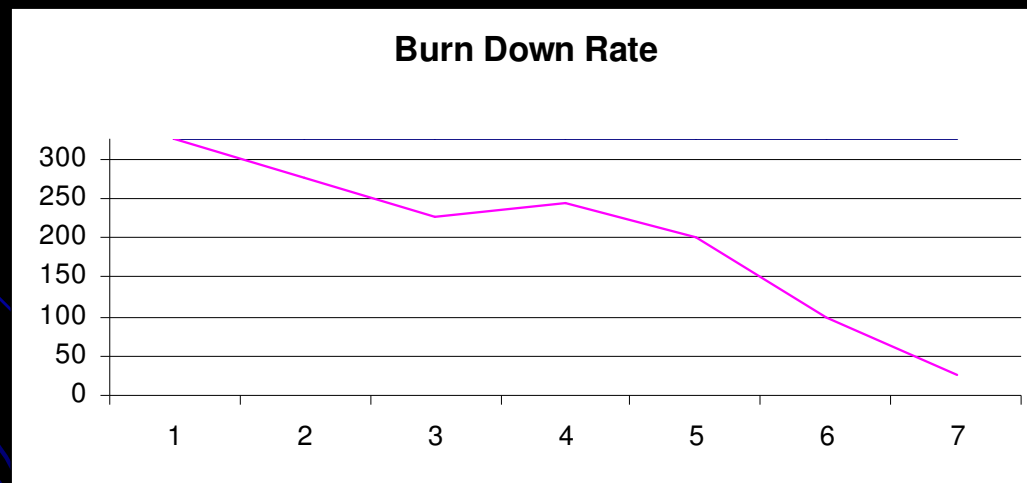
- Define relative complexity & effort
 - Much larger, larger, equal, smaller, much smaller
 - Several “fun” techniques (Number of pizzas, T-shirt sizes, buckets)
- Assign numeric value to each category
 - Numbers have no intrinsic value; only relative value
- Estimators discuss results and continue re-estimating until everyone in agreement
- Results in Work Points

Using Work Points

- At end of iteration total Work Points achieved by adding estimates for all completed functions
- Track number of Work Points earned in each iteration to determine
 - Burndown
 - Velocity
- Difficult to carry Work Point estimations over to other projects
 - Different teams, tools, technologies, etc.

Burndown

- Measurement of accomplishments
 - Product Backlog Burndown
 - Sprint Task Burndown
- Burndown Chart



Velocity

- Compare Velocity to total Estimated Work Points to estimate project duration
- Need several Sprints to determine team's velocity
- Same technique is used to estimate Sprint Burndown
 - Track tasks instead of functions

Benefits of Scrum

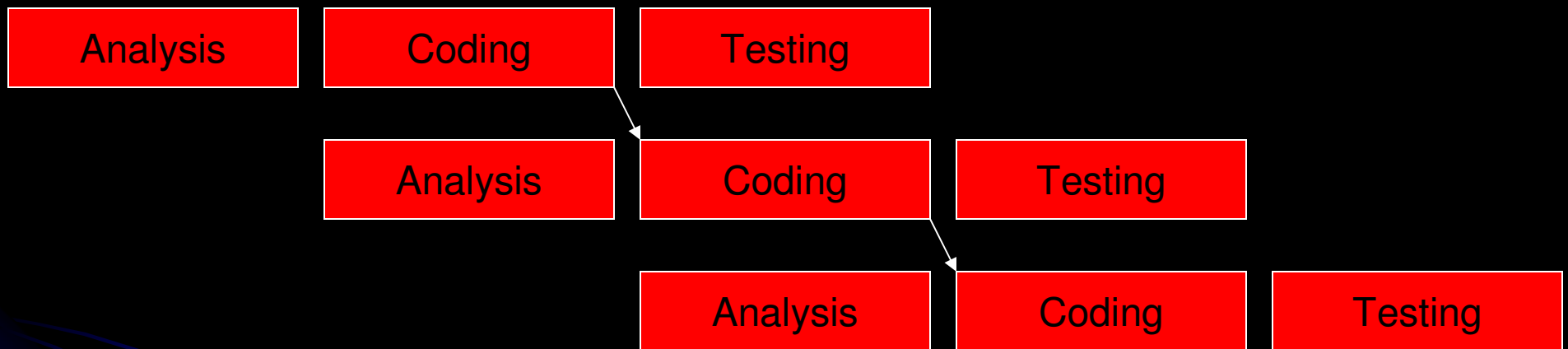
- Focus on team communications
 - Frequent and ready access to knowledge
 - Co-location improves communications
- Frequent demonstrations for early feedback from stakeholders
- Team spirit and camaraderie
- Sense of accomplishment
- Quality of product

But keep the following in mind.....

Sprint Process

- Sprint is not a “mini-waterfall”
- Must result in quality, demonstrable function(s) of value to Product Owner
 - Beware of “defect build-up”
- Sprints will include requirements clarification, development, and testing
 - Sprints may include architectural design
 - Full regression testing may parallel next Sprint

A Phase Is Not A Sprint



Time-boxed coding phases following on the footsteps of each other is not Scrum and violates several principles of the methodology.

Team Roles – Scrum Master

- Lacks many Project Manager responsibilities as defined by Project Management Book of Knowledge
 - Someone needs to perform these responsibilities
 - May be PM overseeing several related Scrum teams
- Lacks authority given to some Project Managers – which may be needed on large scale or difficult projects
- Scrum Master certification is achieved by attending a 2-day lecture

Team Roles – Product Owner

- Role filled by prime user or sponsor
- Role may be filled by Business Analyst
 - Representing the interests of users and stakeholders
 - Must be careful not to become a wall between users and Sprint Team
 - Should be a “communication enabler”
 - Facilitate communications between users and team

Team Roles – Team Members

- Choose their own tasks
 - Not assigned by Scrum Master
 - Works better with a “process mature” team
- However, may perceive themselves as filling a traditional role rather than co-owner of Sprint Release

“I’m a QA guy. Call me when you’re ready to test.....”

Intense Iterations

- Full team is “always on” during a Sprint
- Must be cautious of team burnout
- Limit overtime
- Set a sustainable pace

Project Duration Estimates

- In order to estimate project duration you need to know
 - Full inventory of Product Backlog
 - Know enough about each function to perform estimation technique
- Address this by using Product Releases
 - Break large projects down to several production releases
- Do not rely solely on the Delphi estimation technique.
 - Experience and common sense should not be ignored

Suggestions For Further Study

- Scrum Alliance www.scrumalliance.org
- Mountain Goat Software *Mike Cohn is the founder and great presenter on the topic!* www.mountaingoatsoftware.com
- ProcessExchange *Don't forget other time-boxed methodologies like the 30-day Blitz:*
www.process-exchange.com

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