Using SCRUM as a Test Management method

ASTA conference 2007
Seoul, Korea

Presented by Klaus Olsen
softwaretest.dk
Introduction

Scrum

Agile Estimation

Test management
Klaus Olsen, biography

- Founder and owner of the company Softwaretest.dk
- Has used the past 15 years to focus on software testing, test process improvements and teaching
- Author of “Softwaretest – how to get started” in Danish
- Certified ScrumMaster
- Trustee in TMMi Foundation
- Member of ISTQB Board, representing Denmark
- Co-author of ISTQB Foundation and Advanced Syllabus
- Other presentations:
  - EuroSTAR ’98 in Münich
  - Second World Congres on Software Quality 2000 in Yokohama, Japan
  - EuroSTAR ’2001 in Stockholm
  - Quality Week 2001 in San Francisco, USA
  - EuroSTAR ’2003 in Amsterdam.
    - Advanced Workshop
      "Boost Your Testing, Go on a Bug Hunt!"

- Contact Klaus by mail klaus@softwaretest.dk
Introduction

- Scrum is an Agile method to create software in iteration of 30 days. In this tutorial you will learn how to use Scrum as a Test Manager.
- At the same time you will be introduced to the method, Scrum, which has shown productivity improvements of 100%, 200% and up till 300% in companies who are using this method as the way they build software.
- You can be certified as a ScrumMaster, but this is not a certification class, read more about this on www.controlchaos.com
Agile Manifesto

1. Individuals and interactions over processes and tools
2. Working software over comprehensive documentation
3. Customer collaboration over contract negotiation
4. Responding to change over following a plan

While there is value in the items on the right, we value the items on the left more.

Read more on www.AgileAlliance.org
Use Agile to

- Increase control of a project
- Reduce the risk
- Maximize Return on Investment, and
- Increase probability of success
Agile Practices

- Agile lays out a vision and then nurtures project resources to the best possible to achieve the plan.
- Agile is the “art of the possible.”
- Scrum maximized communication through daily status meetings, open workspaces, and optimal size teams.
- Focus time during an iteration when the team is protected from interference and distractions.
3 key points of this presentation

1. You will learn how to create a Product Backlog where all the work you need to get done within your test team should be listed.

2. You will learn why Daily Meetings of 15 minutes are more valuable to you and your team than a once a week status meeting.

3. You will learn how to create a Burndown Chart of remaining work within each iteration.
Agenda

- Introduction
- Scrum
- Agile Estimation
- Test management
Scrum Metaphor

A part of a rugby game when players from both sides link themselves together in a group, with their heads down, and push against the other side.

The ball is then thrown between them and each side tries to get it.

Just before this, each team has agreed there tactics to be used in the next play.
Scrum Skeleton

24-hour Inspection

Iteration

Product Backlog

Increment of product backlog

Read more about Scrum on www.controlchaos.com
Scrum Roles

Product Owner

ScrumMaster

Team
Product Owner

- One person
- Sets development schedule by prioritizing backlog
- Responsible for ensuring that the most important business value is developed first
- Represents all stakeholders
ScrumMaster

- Test (Project) Manager
- Coach
- Responsible for the process
- Responsible for maximizing team productivity
- Sets up meetings
- Conducts meetings
- Representative to management
- Representative to team
Team

- Self-organizing
- Seven +/- 2 members
- Best experts available
- Has the business and technical domain skills to test an increment of functionality
- Responsible for committing to work
- Authority to do whatever is needed to meet commitment
Scrum Team Self Organization

- Team decides who will do what
- As more is known, team continues to adjust work and assignments
- Team self-organizes at beginning of Sprint
- Each team member self-organizes himself or herself every day
- Team self-organized itself every Daily Scrum
Scrum

3 Roles

3 Meetings

3 Artifacts
Scrum Meetings

Sprint Planning Workshop

Daily Scrum

Sprint Review Meeting
Scrum Meetings

- **Daily Scrum**
- **Sprint Iteration**
- **Product Backlog**
- **Sprint Planning Workshop**
- **Increment of product backlog**
- **Sprint Review Meeting**

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Sprint Planning Meeting

- 1st. - 4 hours meeting max. for team to select Product Backlog and sets goal with Product Owner
- Team selects as much Product Backlog as it believes it can handle during the next Sprint
- 2nd. - 4 hours meeting max. for team to define Sprint Backlog to agree functionality to be tested
- Anyone can attend, but primary conversation and work is between team and Product Owner
Daily Scrum

- Daily 15 minutes status meeting
- Same place and time every day
- Chickens and Pigs
- Three questions:
  1. What have you done since last meeting?
  2. What will you do before the next meeting?
  3. What is in your way?
- Impediments
- Decisions
A chicken and a pig are together when the chicken says, "Let’s start a restaurant!"

The pig thinks it over and says, "What would we call this restaurant?"
The chicken says, "Ham n’ Eggs!"
The pig says, "No thanks. I’d be committed, but you’d only be involved!"
Daily Scrum

- First meeting take more time as team learns how to Scrum
- Keep meetings crisp
- Use “Stand Up Meetings”
- Focus on answering the three question
- Let each person have 2 minutes to answer
- Keep chickens quite, and
- Don’t allow discussions regarding what has been reported
- Setup meetings following the Daily Scrum as needed
Don’t be late for Daily Scrum

- One team started with a $1 fine for the late person, but later decided that it made it feel almost OK to be late -- "I've paid my fine, I'm in the clear".

- So they tried a different approach: when one person is late, everyone pays a $1 fine -- to reflect the fact that the lateness costs everyone. People pretty much stopped being late after that.

- Make sure the fine isn't used to buy doughnuts or things like this for the team - because in a weird way you're actually rewarding the behavior.

- Make the suggestion of the $1 fine for charity.

Nicholas Cancelliere at scrumdevelopment@yahoogroups.com
1. ScrumMaster provides review of Sprint goals, functionality chosen and functionality actually tested and to be demonstrated.
2. Team provides overview of the Sprint and functionality tested.
3. Team demonstrates the functionality on various workstations. Sometimes, if the audience is large, various team members demonstrate different pieces of functionality simultaneously until everyone has seen everything.
4. Meeting reconvenes and ScrumMaster facilitates a discussion of impressions and observations on what was just demonstrated.
5. ScrumMaster facilitates Sprint retrospective, a discussion of what went right and what went wrong in the Sprint, and what can be done to improve the next Sprint.
6. ScrumMaster facilitates a discussion of the impact and implications of the demonstrated functionality of the schedule and product backlog.
7. ScrumMaster announces time and place of Sprint Planning meeting that will initiate the next Sprint.
Sprint Review Meeting Rules

- 2-3 hours
- Maximum 1 hour preparation
- No PowerPoint presentations
- Use equipment where software was developed and tested
- Presented by team to Product owner and customer/users
- Basis for planning the next Sprint
- Must represent potentially shippable increment of product functionality
Scrum

3 Roles

3 Meetings

3 Artifacts
Scrum Artifacts

- Product Backlog
- Sprint Backlog
- Burndown Chart
**Scrum**

**Sprint Backlog:**
- Tasks selected for a Sprint
- Tasks selected by each member

**Product Backlog:**
Everything included within testing, prioritized and estimated

**Functionality ready to ship at end of Sprint**

Scrum: 15 minute daily meeting. Team members respond to:
1) What did you do since last Scrum Meeting?
2) Do you have any obstacles?
3) What will you do before next meeting?

Read more on [www.controlchaos.com](http://www.controlchaos.com)
Product Backlog

- List of tasks that need to be done
- Issues are placeholders that are later defined as work
- More detail on higher priority backlog
- One list for multiple teams
- Product owner responsible for priority
- Anyone can contribute
- Maintained and posted visibly
# Product Backlog Example

<table>
<thead>
<tr>
<th>ID</th>
<th>Description</th>
<th>Estimate</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Define roles and responsibility within project</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Define Test Levels in project</td>
<td></td>
<td></td>
</tr>
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<td>3</td>
<td>Define Goals for each Test Level in project</td>
<td></td>
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<tr>
<td>4</td>
<td>Write Test Plan for project</td>
<td></td>
<td></td>
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<tr>
<td>5</td>
<td>Review Requirement documentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Structure System Test into Test Areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Create and document test cases</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Define requirement for test environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Define requirement for test data</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Investigate how test data can be created</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Execute test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Create defect reports</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Scrum Artifacts

- Product Backlog
- Sprint Backlog
- Burndown Chart
List of highest priority task from Product Backlog
- Tasks are estimated in hours, usually 1-16
- Task with more than 16 hours are broken down later
- Team members sign up for tasks, they aren´t assigned (be patient, just wait)
- Estimate work remaining is updated daily
- If work is unclear, define a Sprint Backlog with a larger amount of time ... break it down later
- Update work remaining as more is known, as items are worked
**Sprint Backlog Example**

- The Sprint Backlog is an extract of the Product Backlog with estimated work for 30 calendar days / 22 workdays for a team 7 +/- 2

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<td>3</td>
</tr>
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<td>8</td>
<td>Define requirement for test environment</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>9</td>
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<td></td>
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<td>6</td>
<td>Structure System Test into Test Areas</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>10</td>
<td>Investigate how test data can be created</td>
<td></td>
<td>9</td>
</tr>
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</table>
The Scrum Team has decided what it will accomplish during the upcoming Scrum. It now Sprints to accomplish the Sprint Goal.

A Sprint is conducted in a vacuum, totally protected from outside noise and interference. This allows the team to get their collective minds around a problem and creatively solve it.
Sprint Practice – Sprint

- Thirty calendar day iteration
- Team work on task defined in Sprint Backlog
- Team self-organizes to do work
- Team conforms to existing standards and conventions
Roles during Sprint

- Team: Execute task listed in Sprint Backlog
- ScrumMaster: Maintain the Sprint Backlog
- Team, + ScrumMaster: Assess Sprint Burndown
- ScrumMaster: Stop External Interference
- ScrumMaster: Remove Impediments
Stop External Interference

- The primary tool for the ScrumMaster monitoring for outside interference is the Daily Scrum meeting.
- Most organizations tolerate continual interference which result in reduced productivity.
- The ScrumMaster is a change agent who must politely but firmly enforce the rule of no interference.
ScrumMaster responsibility

Remove Impediments

- Obstacles reported at Daily Scrum meeting must be dealt with by the ScrumMaster.
- The ScrumMaster must work to optimize the team productivity during the Sprint by removing impediments.
Common Impediments

- Workstation, network, and/or server are down.
- Network or server are slow.
- Test environment are not ready when planned.
- Test data are not in place when testing should start.
- Unsure about the exact requirement that must be tested.
- Required to attend status meeting with management.
- Asked by management to something other than what this team member committed to do for this Sprint.
Scrum Artifacts

Product Backlog

Sprint Backlog

Burndown Chart
Work remaining on each task is reported during the Daily Scrum meeting, and updated by the ScrumMaster.

Notice that this is different than measuring how many hours have been spent on a task.

Time reporting is not part of Scrum.

Scrum is results oriented, not effort driven.
Burn Down Chart Example
Burndown Chart Example

Show in Excel tool
Questions?
What is an Estimate

- The most common view, an estimate is a number.
- An estimate is a prediction about the future which has an equal probability of being above or below the actually result.
- An estimate always has a level of uncertainty. Estimates should always be accompanied with an explanation of uncertainty.
Agile Estimation

An Agile way to estimate is a technique with cards:

1. Each team members select a set of cards (13)
2. Decide if estimates is in hours or days
3. The facilitator reads the task to be estimated
4. The task is discussed
5. Each person selects a card with a value they believe the task need in order to be completed
6. All cards are turned over and put on the table with value facing up
7. If agreement on estimate this is the estimate
8. If values are diverse the person with the highest and lowest value explains the reason for there estimates
9. Repeat process from step 5 until agreement in step 7
Using the "Fibonacci numbers" - each number is the sum of the two preceding numbers.
Agile Estimation Example I

5 Scrum team members estimates a task
Agile Estimation Example II

5 Scrum team members estimates a task
Agile Estimation Example II close-up

- Cards are turned over with value facing up

- People with estimate of 5 and 21 hours explains the reason why they have the estimate they have
Agile Estimation Example III

- A new game of estimating is played
Consensus on Estimate, 3 hours is used as an estimate for this task.
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<th>Description</th>
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<tr>
<td>1</td>
<td>Plan functional test of Selling Tickets</td>
<td>13 h</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Plan functional test of selling food and drinks</td>
<td>8 h</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Plan functional test of being picked up</td>
<td>8 h</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Plan test of other products – blankets etc.</td>
<td>8 h</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Plan test of usability</td>
<td>21 h</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Plan test of security</td>
<td>34 h</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Plan test of Performance</td>
<td>34 h</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Plan test of Browser</td>
<td>13 h</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Set requirement for test environment</td>
<td>34 h</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Set requirement for test data (get data)</td>
<td>21 h</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Execute test of Usability – low cost</td>
<td>13 h</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Execute test of functionality Selling Tickets</td>
<td>8 h</td>
<td></td>
</tr>
</tbody>
</table>
Questions?
Agenda

- Introduction
- Scrum
- Agile Estimation
- Test management
Test Management using Scrum

- Use the parts of Scrum that are feasible in your organisation
- Many parts are common sense, but through Scrum they have been put together, and they have proven to work
- If not all, I suggest you use:
  - Product Backlog
  - Sprint Backlog
  - Agile Estimating
  - Daily Scrum meetings
  - Burndown Chart
Scrum: 15 minute daily meeting. Team members respond to:
1) What did you do since last Scrum Meeting?
2) Do you have any obstacles?
3) What will you do before next meeting?

Scrum Backlog:
Tasks selected for a Sprint
Tasks selected by each member

Functionality ready to ship at end of Sprint

Product Backlog:
Everything included within testing, prioritized and estimated

Read more on www.controlchaos.com
Benefits of Daily Scrum Meetings

- As a test manager you will once each 24 hours know the status of your teams test progress.
- Your team members will experience they are moving things forward, they will have a small success everyday, when they are able to report there progress since the last meeting.
- You will during the daily 15 minutes be able to measure the temperature of your team. *Instead of once a week status meeting of 1 or 1½ hour*
- You will be able to notice team members who needs support/coaching within a few days, instead of weeks.
Scrum – How to get started

1. Create a Product Backlog
2. Estimate each task the Agile way, with your team
3. Prioritize each task, together with your Product Owner, or together with your test team
4. Create a Sprint Backlog with work for an iteration of 30 calendar days
5. Start with a Daily Scrum meeting, and let each team member set their own goal for the next 24 hours
6. Update your Burndown Chart each day with remaining work
Questions?
More information - Links

- www.controlchaos.com

- www.scrumalliance.org
More information - Links

- www.agilealliance.org
- www.softwaretest.dk