Scrum, but…? Scrum, and…!
Using Scrum and Requirements Engineering Successfully

Susanne Muehlbauer
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Content

Aims & Basics

• Why Agile SW-Development?
• Some Basics for Scrum
• Is RE necessary in an agile Environment?

Scrum & RE

• Where can we find RE in Scrum?
• Which RE-Methods can we use in Scrum?

Questions & Answers
Aims & Basics

• Why Agile SW-Development?
• Some Basics for Scrum
• Is RE necessary in an agile Environment?
Good idea, but...

... the wrong Analogy!
Software-Development is complex

Heavyweight goes agile

Float like a butterfly,
and sting like a bee
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

Source: nach http://agilemanifesto.org/iso/de/
Agile Values

Courage, Communication, Simplicity, Feedback, Transparency, Openness, Trust, Respect

Source: www.burn-out-forum.de/forum/viewtopic.php?f=3...
And now...?

The Agile Manifesto does not tell us about Methods and Processes

The Agile Manifesto – Implementations

Known agile Methods:
- Pair Programming
- Refactoring
- Personas
- Continuous Integration
- ...

Known agile Frameworks:
- XP
- FDD
- Crystal
- Scrum
- ...

Scrum

Source: nach http://agilemanifesto.org/de/
The idea of Scrum

Product Backlog → Sprint Backlog → Sprint → Daily Scrum → Potentially releasable Product Increment

- DB structure
- Set-up defect tracking system
- maximum 30 days
- 24 hours

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* "Agile Software Development with scrum", Ken Schwaber, Microsoft Press, 2004
## 3 Roles

### Product Owner
- Product
- Backlog
- Value/ ROI
- Order/ Prioritisation

### Development Team
- Implementation
- Cross functional
- Self organizing

### Scrum Master
- Servant-Leader
- Techniques, Practices, Rules
- Impediments
3 Artifacts

Product Backlog
- Backlog Items
- Ordered/Prioritized
- Estimated

Sprint Backlog
- Selected Backlog Items
- unchangeable
- Committed

Burndown Chart
- Progress

Source: "http://blog.mountaingoatsoftware.com/improving-on-traditional-release-burndown-charts"

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3 Meetings/ Events

Sprint Planning

Why
What
How

Daily Scrum

Inspect & Adapt
Communication
Focus

Review Retro

Results
Development Process
Inspect & Adapt
Scrum Documentation [SUT10]:

- […] refining (or “grooming”) the Product Backlog:
- This includes detailed requirements analysis, […]
- Scrum is silent on how this work is done […]
The Product Owner in the project organisation

Stakeholders

Requirements Engineering

Product Owner

Requirements Engineering

Scrum Master

Scrum Team

Development Team
Responsibilities of the Product Owner

- Product Backlog
- Clarification of Backlog Items
- Value of the work (ROI)
- Prioritization and Order of Backlog Items
- Inspection of product increments
- Release Planning

Being a Product Owner is a full-time job
Capabilities of the Product Owner

- Project Management
- Communication skills
- Know How within the Business Domain
- Requirements Engineering

Being a Product Owner is a challenging job
Some Principles for Requirements Engineering in Scrum

<table>
<thead>
<tr>
<th>1: Time boxing</th>
<th>2: Face-to-face</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reducing the scope of the work to a sprint of between two to four weeks</td>
<td>Communicating the requirements through face-to-face conversation of the Scrum team with the product owner, who is available at all times</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3: Deferred Decisions</th>
<th>4: Embrace Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evolutionarily developing the requirements as late as possible (‘deferred decisions’ applied)</td>
<td>Product Backlog does change, Selected Backlog does not change during the sprint</td>
</tr>
</tbody>
</table>
Where can we find RE in Scrum?

Product Vision

Product Backlog

Sprint Backlog

Sprint

Daily Scrum

DB structure

Set-up defect tracking system

Potentially releasable Product Increment
Product Vision - Example

„All my music is in my pocket“

Apple
Agile Methods for the Product Vision

Elevator Statement

Product
• Feature
• Feature
• Feature

Vision Box

Press Release
Requirements Engineering: Define Scope

System Context and Interfaces

Stakeholder Analysis

Stakeholders

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Where can we find RE in Scrum?

Product Backlog → Sprint Backlog → Sprint → Daily Scrum

- Business and System Requirements
- Set-up defect tracking system
- DB structure
- GIAufsetzen

Requirements Acceptance

Potentially releasable Product Increment
From Vision to Product Backlog

Vision

Business Plan

Business Drivers

Minimum Marketable Product

Release Planning

Product Backlog

Release 1
Feature
User Story

Release 2
Feature
User Story

Release 3
Feature
User Story

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From Vision to Product Backlog

Vision

Business Plan

Business Drivers

Organization

Constraints

Minimum Marketable Product

Feature

User Story

Feature

User Story

Feature

User Story

Feature

User Story
Requirements Engineering: Goal Modelling

- Goal
  - And-Decomposition
    - Subgoal
    - Subgoal
    - Subgoal

- Or-Decomposition
  - Subgoal
  - Subgoal
RE: Activities

Elicit

Time boxing

Specify

Face-to-face

User Story
Stakeholder/ User-Analysis

Interest in Product/ Business Value

Influence to Product Success

Stakeholder Influence/ Power

High

Low

High

Low
User Story Template

**Story Title**

I as a X
I want Y
So that Z

X is the person who will benefit from this story being delivered.

Y is the content of the story.

Z is the benefit the story will deliver.
3 C’s for User Stories

**Card**
Just enough text to identify the requirement

**Story Title**
I as a X
Want Y
So that Z

**Conversation**
Promise for a conversation between customer and programmer

**Confirmation**
Needs acceptance criteria

**Back side**
Acceptance Criteria
“Grooming the Backlog”

- Detailed Requirements Analysis
- Splitting large items
- (Re-) Estimation
- (Re-) Prioritization

Quelle: http://www.pfotenundco.de/fotos/pflegePferd.jpg
Level of Detail and Prioritization

Evolution of Requirements from Iteration to Iteration

Current Iteration

Current Version

Later Versions

In Detail Analyzed Requirements

Roughly analyzed Requirements

Deferred Decisions

Embrace Change

Order/ Priority of Requirements

Source: WENN DER KUNDE NICHT WEISS, WAS ER WILL: TIPPS FÜR DEN AGILEN UMGANG MIT ANFORDERUNGEN, OBJEKTspektrum September/Oktober2009
Prioritization

- By Business Value
  - For the Customer
  - For the company (avoid costs, reduce costs)
- By Stakeholders
- By Themes
- By MuSCoW
- By Eisenhower (urgent/ important)
- By risk
- By Kano
- Non-Functionl Aspects/ Architecture
- Dependencies
- Organizational requirements (e.g. Suppliers)
- Time Restrictions (Launch Date)
Quality Check

„INVEST in Good Stories“

Bill Wake
INVEST (Bill Wake)

I  Independent
N  Negotiable
V  Valuable/ Vertical
E  Estimable
S  Small → Sized right
T  Testable

Who is responsible for the compliance to the criteria?
Story Splitting

User Interface

Business Logic

Database
The Example also works with Pizza...
Where can we find RE in Scrum?

- Product Backlog
- Sprint Backlog
- Sprint
- Daily Scrum

Implementation

Requirements

DB structure
Set-up defect tracking system

Potentially releasable Product Increment
Team selects Backlog Items for Sprint Backlog

Current Iteration

READY
State

Selected
Product
Backlog

In Detail
Analyzed
Requirements

Current
Version

Time boxing

Roughly
analyzed
Requirements

Embrace
Change

Later
Versions

Sprint
Backlog:
- User Story
  - Task
  - Task
  - Task

Source: WENN DER KUNDE NICHT WEISS, WAS ER WILL: TIPPS FÜR DEN AGILEN UMGANG MIT ANFORDERUNGEN, OBJEKTspektrum September/Oktober2009
Embrace Change

The Content of the Sprint Backlog is stable!

- No Changes/ no new requirements during the current spring (Iteration)
- Short Iterations
- Changes/ new requirements become part of the product backlog and will be prioritized
Agile Information Model

Levels
- Problem
  - Why?
  - What?

Artifacts
- Vision
- Product Backlog
- Sprint Backlog
- SW Design Tasks

Activities
- Backlog Grooming
- Planning I
- Planning II

Responsible: PO
Involved: Team

Responsible: Team
Involved: PO
Where can we find RE in Scrum?
The Potentially releasable Product Increment

➢ Every sprint must deliver a potentially releasable Product Increment
  ➢ Every user story must be „Done“
  ➢ The product increment must be „Done“

➢ Definition of Done
  ➢ Quality of the product increment
    ➢ Non-functional requirements
    ➢ Unit Tests
    ➢ Refactoring
  ➢ Deliverables oft the product increment, e.g.
    ➢ Documentation
    ➢ Installation Routine
  ➢ Team-Specific
Release-Planning

Vision

Roadmap

Minimum Marketable Product

Release

Feature

Story 1

Story 2

Story 7

Story 3

Story 4

Story 9

...
„Only Done is Done“
(Ralf Wirdemann)
Can we find Requirements Engineering in Scrum?

1: Time boxing
Focus on a small amount of requirements
Higher priority requirements are clearer and have more detail than lower priority requirements

2: Face-to-face
Communicating the requirements through face-to-face conversation

3: Deferred Decisions
Evolutionarily developing the requirements as late as possible

4: Embrace Change
… but before a requirement can be taken into a sprint it has to have enough detailed information and

Yes, Requirements Engineering is an important part of Scrum.
Are you ready for questions or are you done?
Thank You!

Susanne Muehlbauer
HOOD GmbH
Office Munich
Keltenring 7
82041 Oberhaching
Germany
Tel: 0049 89 4512 53 0
Susanne.Muehlbauer@HOOD-Group.com
www.HOOD-Group.com
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