Sprint Backlog
Specified by
Example

Ralph Jocham
effective agile.

www.effectiveagile.com
ralph@effectiveagile.com
@rjocham
Ralph Jocham

- Started as programmer; discovered process as a problem early on
- First Unified Process with UML
- Agile since 2000 with XP
- Scrum in 2003
- Oracle, LinkedIn, Roche, Google, The Gap, Swisscom, Texas Instruments, Siemens Medical, ThoughtWorks, JPMorganChase
- Did come around, different cultures and domains
- Founder of effective agile.
- Trainer and Engagement Manager with Scrum.org
Right Quality – No!

(source: Mary Poppendieck)
Right Quality - Yes!

If you want effective programmers, you will discover that they should not waste their time debugging – they should not introduce bugs to start with (Edgar W. Dijkstra 1972)
What is the Product Backlog

The Product Backlog lists all features, functions, requirements, enhancements, and bug fixes that constitute the changes to be made to the product in future releases. Product Backlog items have the attributes of a description, order, and estimate.

Scrum Guide Page 12
What is a Sprint Backlog

The Sprint Backlog is the set of Product Backlog items selected for the Sprint, plus a plan for delivering the product Increment and realizing the Sprint Goal.

Scrum Guide Page 14
Roles, Artifacts and Events in Action

Roles
Product Owner
Development Team
Scrum Master

Artifacts
Product Backlog
Sprint Backlog
Increment

Events
Sprint Planning
Sprint
Daily Scrum
Sprint Review
Retrospective

(source: ADM)

effective agile.
Product Backlog

- Product Backlog Item
- Product Backlog Item
- Product Backlog Item
- Product Backlog Item
- Product Backlog Item
- Product Backlog Item
- Product Backlog Item
- Product Backlog Item

Sprint Backlog

- Product Backlog Item
- Product Backlog Item
- Product Backlog Item

Plan

- Task
- Task
- Task

effective agile.
effective agile.
Right Quality – Yes!

Define Spec Details Incrementally as Tests and Scripts

Implement incrementally to satisfy the next test plus all those from previous increments

Code and Executable Images

(source: Mary Poppendieck)

effective agile.
3 C's

Card

Conversation (Understand the Why)

Confirmation

Ron Jeffries, http://xprogramming.com/articles/expcardconversationconfirmation/
Agile Testing Quadrants

Business-Facing

Functional Tests
  Story Tests
  Integration Tests

Exploratory Testing
  Usability Testing
  User Acceptance Testing

Supporting the Team

Q1
  Unit Test
  Component Tests

Q2
  Q3
  Q4

Technology-Facing

Performance & Load Testing
  Security Testing
  'ility' Testing

Automated / Manual

Automated

Manual

Critique Product / Process

Tools

(source: Brian Marick)
effective agile.
Agile Testing Quadrants

**What Validation**
- Exploratory Testing
- Usability Testing
- User Acceptance Testing

**How Verification**
- Performance & Load Testing
- Security Testing
- NFR Testing

**Acceptance Criteria**
- Functional Tests
- Story Tests
- Integration Tests

**Supporting the Team**
- Unit Tests
- Component Tests

**Business-Facing**
- Q1
- Q2
- Q3
- Q4

**Technology-Facing**
- Automated / Manual
- Automated
- Manual
- Tools

(source: Brian Marick)

effective agile.
Here lies the power of the Triad & 3 C’s to drive out the examples.
effective agile.
How to get there

Refinement

effective agile.
Title: Derive race time for new distance from other distance
Title: Derive race time for new distance from other distance

As a runner

I want to be able to derive the race time for a new distance based on the time of another distance

So that I can get a feeling for what time to expect and to better plan my training
Title: Derive race time for new distance from other distance

Acceptance Criteria:

• Calculated time is correctly rounded to 1 second for all distances of less than 1 hour racing time
• Calculated time is correctly rounded to 10 seconds for all distances of more than 1 hour racing time
• Time of calculation is < 1 second
Title: Derive race time for new distance

Acceptance Criteria:

- Calculated time is correctly rounded to 1 second for all distances of less than 1 hour racing time
- Calculated time is correctly rounded to 10 seconds for all distances of more than 1 hour racing time
- Time of calculation is < 1 second
- \textit{Maximal allowed extrapolated distance is Marathon}

- \textit{McMillan is the used algorithm}
- \textit{We have a license agreement with McMillan}
Title: Derive race time for new distance

Acceptance Criteria:

Examples:

<table>
<thead>
<tr>
<th>Formula Examples</th>
<th>5K</th>
<th>2K</th>
<th>3K</th>
<th>5K</th>
<th>10K</th>
<th>15K</th>
<th>20K</th>
<th>½ M</th>
<th>25K</th>
<th>30K</th>
<th>1M</th>
</tr>
</thead>
<tbody>
<tr>
<td>0:15.00</td>
<td>0:05.29</td>
<td>0:08.33</td>
<td>0:15.00</td>
<td>0:31.09</td>
<td>0:48.16</td>
<td>1:05.40</td>
<td>1:09.30</td>
<td>1:23.30</td>
<td>1:41.30</td>
<td>2:26.10</td>
<td></td>
</tr>
<tr>
<td>0:20.00</td>
<td>0:07.19</td>
<td>0:11.23</td>
<td>0:20.00</td>
<td>0:41.32</td>
<td>1:04.30</td>
<td>1:27.40</td>
<td>1:32.40</td>
<td>1:51.20</td>
<td>2:15.20</td>
<td>3:15.00</td>
<td></td>
</tr>
<tr>
<td>0:30.00</td>
<td>0:10.50</td>
<td>0:17.04</td>
<td>0:30.00</td>
<td>1:02.20</td>
<td>1:36.40</td>
<td>2:11.20</td>
<td>2:19.00</td>
<td>2:47.00</td>
<td>3:23.00</td>
<td>4:52.20</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10K</th>
<th>2K</th>
<th>3K</th>
<th>5K</th>
<th>10K</th>
<th>15K</th>
<th>20K</th>
<th>½ M</th>
<th>25K</th>
<th>30K</th>
<th>1M</th>
</tr>
</thead>
<tbody>
<tr>
<td>0:35.00</td>
<td>0:06.09</td>
<td>0:09.35</td>
<td>0:16.51</td>
<td>0:35.00</td>
<td>0:54.14</td>
<td>1:13.50</td>
<td>1:18.10</td>
<td>1:33.50</td>
<td>1:54.00</td>
<td>2:44.20</td>
</tr>
<tr>
<td>0:40.00</td>
<td>0:07.03</td>
<td>0:10.58</td>
<td>0:19.16</td>
<td>0:40.00</td>
<td>1:02.00</td>
<td>1:24.20</td>
<td>1:29.10</td>
<td>1:47.10</td>
<td>2:10.20</td>
<td>3:07.40</td>
</tr>
<tr>
<td>0:50.00</td>
<td>0:08.48</td>
<td>0:13.42</td>
<td>0:24.05</td>
<td>0:50.00</td>
<td>1:17.30</td>
<td>1:45.30</td>
<td>1:51.30</td>
<td>2:14.00</td>
<td>2:43.00</td>
<td>3:54.40</td>
</tr>
</tbody>
</table>

Error Examples:

<table>
<thead>
<tr>
<th>5K</th>
<th>0K</th>
<th>42.195K</th>
<th>42.196K</th>
<th>5000K</th>
</tr>
</thead>
<tbody>
<tr>
<td>0:15.00</td>
<td>F: negative</td>
<td>F: zero</td>
<td>2:26.10</td>
<td>F: too long</td>
</tr>
<tr>
<td>-1K</td>
<td>0K</td>
<td>42.196K</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F: negative</td>
<td>F: zero</td>
<td>F: negative</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
V-Model

- Requirements
- Architecture
- Detailed Design
- Code
- Acceptance Test
- Integration Test
- System Test
- Unit Test

Effective Agile.
V-Model?

requirements

architecture

detailed design

code

acceptance test

integration test

system test

unit test

effective agile.
V-Model?
V-Model Logically Applied

- Requirements
- Acceptance Test
- Architecture
- Integration Test
- Detailed Design
- System Test
- Code
- Unit Test

effective agile.
V-Model Timely Applied

- Requirements
- Acceptance Test
- Architecture
- Integration Test
- Detailed Design
- System Test
- Code
- Unit Test
V-Model Timely Applied in Sprint

1 Sprint

- Requirements
- Acceptance Test
- Architecture
- Integration Test
- Detailed Design
- System Test
- Code
- Unit Test

effective agile.
Sprint Backlog

Product Backlog Item

Plan

Task
Example
Test

Task
Example
Test

Task
Example
Test

effective agile.
effective agile.
Simplify & Standardize Validation

As the world's first commercially available automated validation software solution, VALID™ Software is designed to help support, simplify and standardize validation studies while meeting SWG DAM/DAB recommendations. VALID™ Software dramatically reduces the amount of time and labor required to validate new technologies and:

- Simplifies experimental design
- Imports instrument set-up files and imports results from Applied Biosystems software and instrumentation
- Automates data analysis and reduces time to interpret results
- Creates validation reports
- Stores results in a central location

VALID™ Software also manages quality assurance and control activities including performance checks, material modification testing, and qualifying testing.

effective agile. Click here to receive your free VALID™ Software desk organizer.
### Table: Create New Project Excel Sheet

<table>
<thead>
<tr>
<th>Month</th>
<th>Project</th>
<th>Project Name</th>
<th>Start Date</th>
<th>End Date</th>
<th>Duration</th>
<th>Status</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>November</td>
<td>Project 1</td>
<td>Project Name</td>
<td>2022-11-01</td>
<td>2022-11-30</td>
<td>30 days</td>
<td>On</td>
<td>Notes</td>
</tr>
<tr>
<td>December</td>
<td>Project 2</td>
<td>Project Name</td>
<td>2022-12-01</td>
<td>2022-12-31</td>
<td>30 days</td>
<td>On</td>
<td>Notes</td>
</tr>
<tr>
<td>April</td>
<td>Project 3</td>
<td>Project Name</td>
<td>2023-04-01</td>
<td>2023-04-30</td>
<td>30 days</td>
<td>On</td>
<td>Notes</td>
</tr>
</tbody>
</table>

**Related Notes:**
effective agile.
effective agile.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Slope</th>
<th>Intercept</th>
<th>R²</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>50</td>
<td>22.9</td>
<td>0.698970004</td>
<td>-3.22796</td>
<td>28.519628</td>
<td>0.967112</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>50</td>
<td>22.99</td>
<td>0.698970004</td>
<td>-3.22796</td>
<td>28.519628</td>
<td>0.967112</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>16.7</td>
<td>24.5</td>
<td>1.222718471</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>16.7</td>
<td>24.04</td>
<td>1.222718471</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>5.56</td>
<td>26.09</td>
<td>0.749074792</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>5.56</td>
<td>26.27</td>
<td>0.749074792</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>1.85</td>
<td>27.75</td>
<td>0.287171228</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>1.85</td>
<td>27.91</td>
<td>0.287171228</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>0.52</td>
<td>29.27</td>
<td>-0.207068911</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>0.52</td>
<td>29.24</td>
<td>-0.207068911</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>0.21</td>
<td>30.48</td>
<td>-0.677780705</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>0.21</td>
<td>30.67</td>
<td>-0.677780705</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>0.068</td>
<td>32.1</td>
<td>-1.107401087</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>0.068</td>
<td>31.89</td>
<td>-1.107401087</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>0.023</td>
<td>34.25</td>
<td>-1.838272164</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>0.023</td>
<td>33.8</td>
<td>-1.838272164</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From Excel:

Actual:

-3.22796  28.519628  0.967112
### Quantitative Dilution Calculations

<table>
<thead>
<tr>
<th>Dilution</th>
<th>Number of Dilution</th>
<th>Dilution Factor</th>
<th>Volume of Dilution</th>
<th>Total Volume of Dilution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:10</td>
<td>10</td>
<td>10</td>
<td>10 mL</td>
<td>100 mL</td>
</tr>
<tr>
<td>1:100</td>
<td>100</td>
<td>100</td>
<td>100 mL</td>
<td>1000 mL</td>
</tr>
</tbody>
</table>

### Preparing Standards

<table>
<thead>
<tr>
<th>Standards</th>
<th>Dilution Factor</th>
<th>Volume of Standards</th>
<th>Total Volume of Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:10</td>
<td>10</td>
<td>10 mL</td>
<td>100 mL</td>
</tr>
<tr>
<td>1:100</td>
<td>100</td>
<td>100 mL</td>
<td>1000 mL</td>
</tr>
</tbody>
</table>

### Preparing Master Mix

<table>
<thead>
<tr>
<th>Standards</th>
<th>Dilution Factor</th>
<th>Volume of Master Mix</th>
<th>Total Volume of Master Mix</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:10</td>
<td>10</td>
<td>10 mL</td>
<td>100 mL</td>
</tr>
<tr>
<td>1:100</td>
<td>100</td>
<td>100 mL</td>
<td>1000 mL</td>
</tr>
</tbody>
</table>

### Notes

- Effective agile.
effective agile.
“As formality increases, tests and requirements become indistinguishable. At the limit, tests and requirements are equivalent.”

Tooling

• JUnit for Unit Testing
• JUnit Acceptance Testing
• FitNesse for Acceptance Testing
• Excel and POI in combination with JUnit for Acceptance Testing
ATDD to TDD

Create User Story

Acceptance Criteria / Specification by Example

For each Acceptance Criteria / Example

Demonstrate / Review working software

Grooming/Sprint Planning (3 C’s)

Create failing Unit Test

Make test pass

Refactor

Create failing Acceptance Test

Test passes criteria

TDD

(source: David Starr)

effective agile.
(source: ADM)
effective agile.
Questions?

Ralph Jocham

effective agile.

www.effectiveagile.com
ralph@effectiveagile.com
@rjocham

effective agile.