



Mature agile development using HP Quality Center

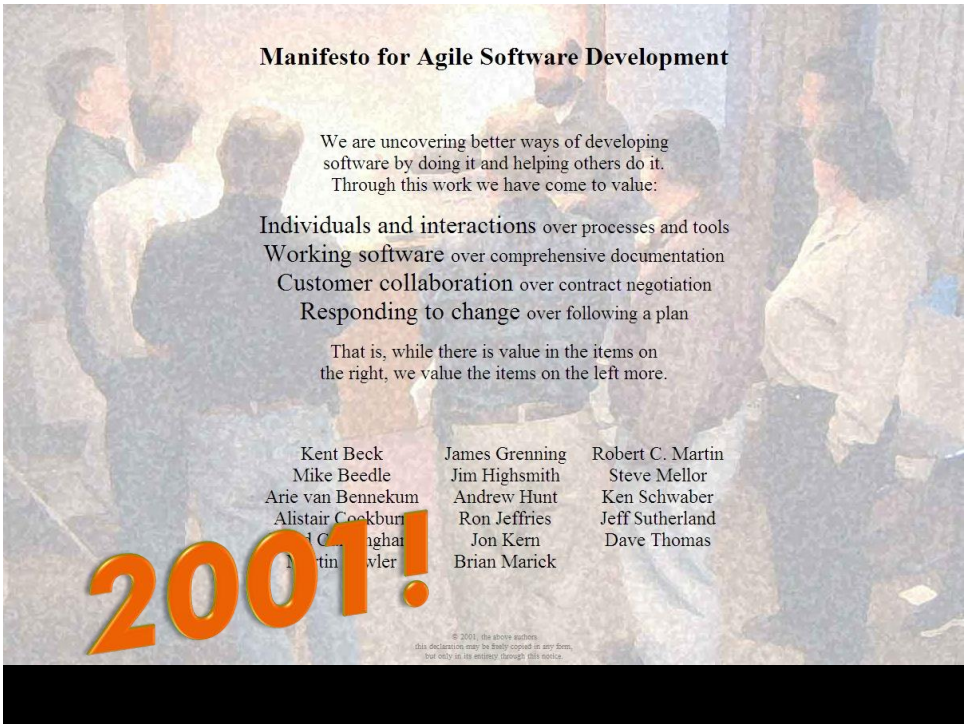
Gerald Heller
software process optimization

Vivit TQA webinar
September 22, 2009

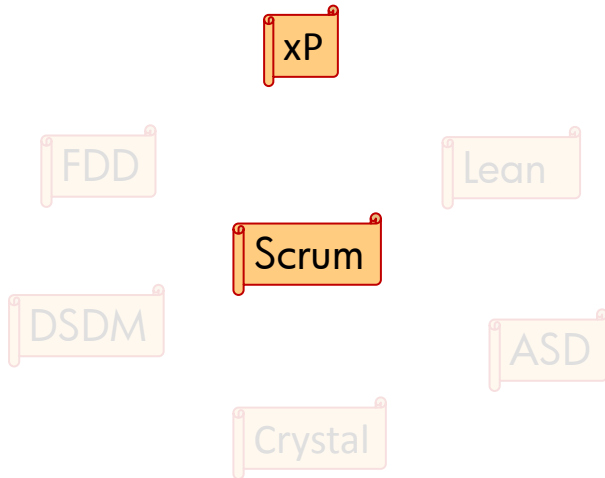


Using QC with agile practices

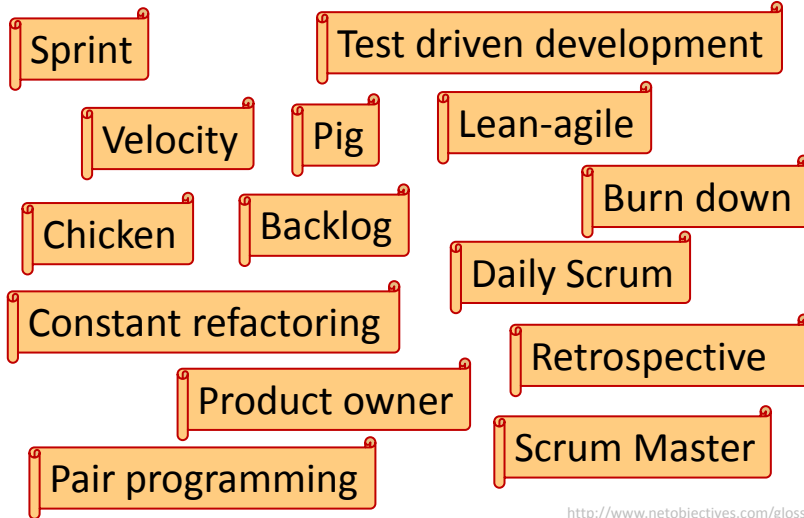
- ▶ Agile fundamentals
- ▶ Expectations & challenges
- ▶ Quality Center for agile product development
- ▶ Experiences & conclusions



Agile methods



Agile terminology



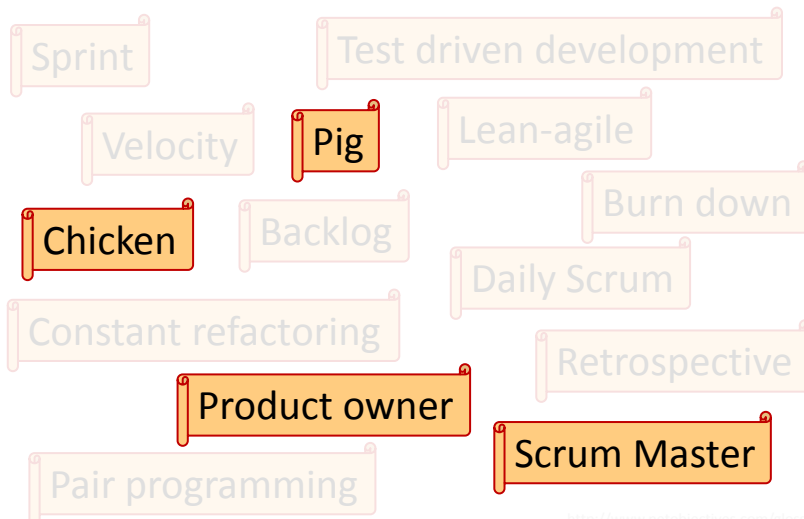
<http://www.netobjectives.com/glossary>

September 2009

Copyright © 2009 Gerald Heller

5

Agile terminology – roles



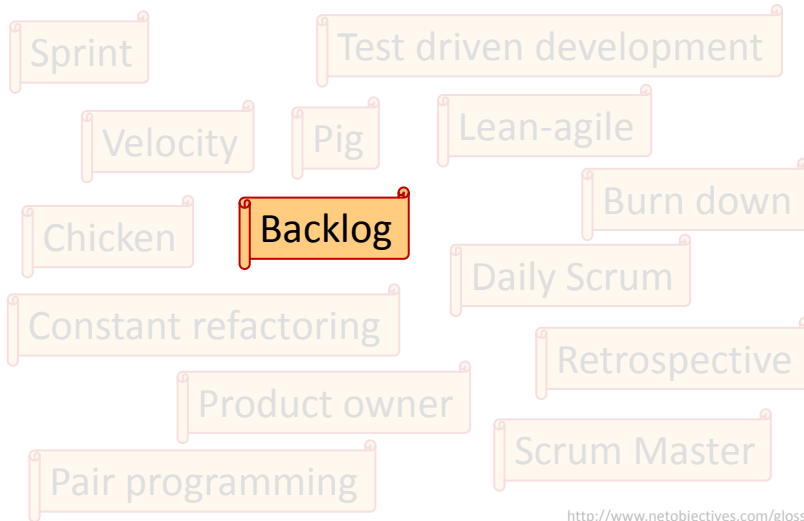
<http://www.netobjectives.com/glossary>

September 2009

Copyright © 2009 Gerald Heller

6

Agile terminology – work to be done

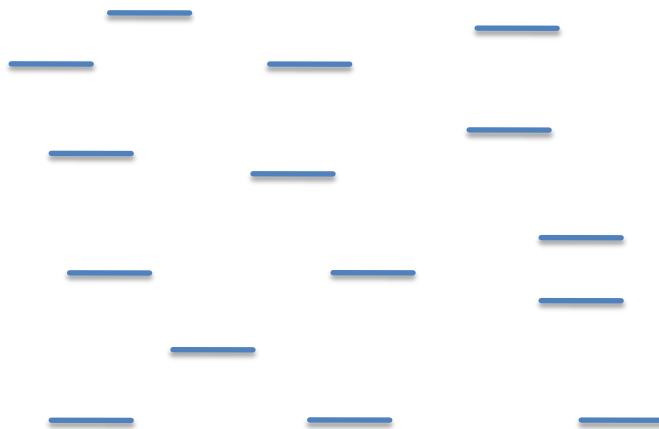


September 2009

Copyright © 2009 Gerald Heller

7

Backlog unit

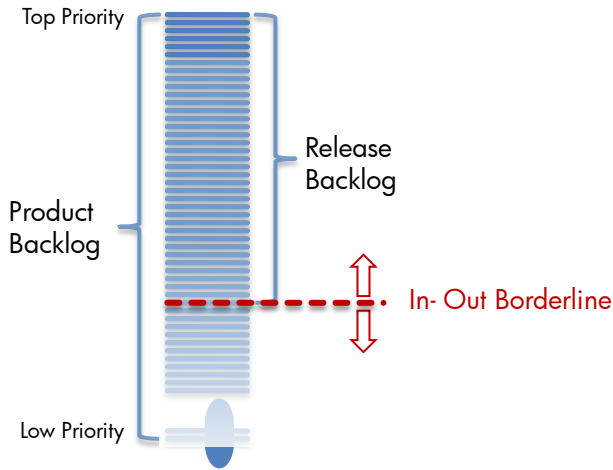


September 2009

Copyright © 2009 Gerald Heller

8

Backlog management

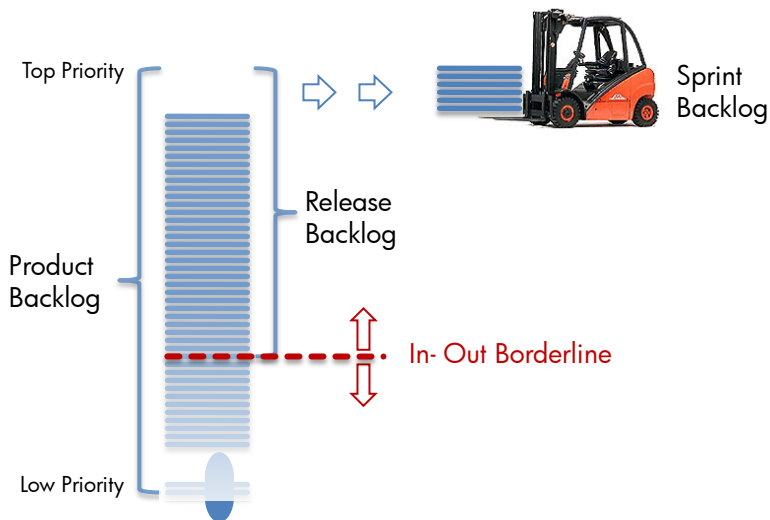


September 2009

Copyright © 2009 Gerald Heller

9

Backlog management

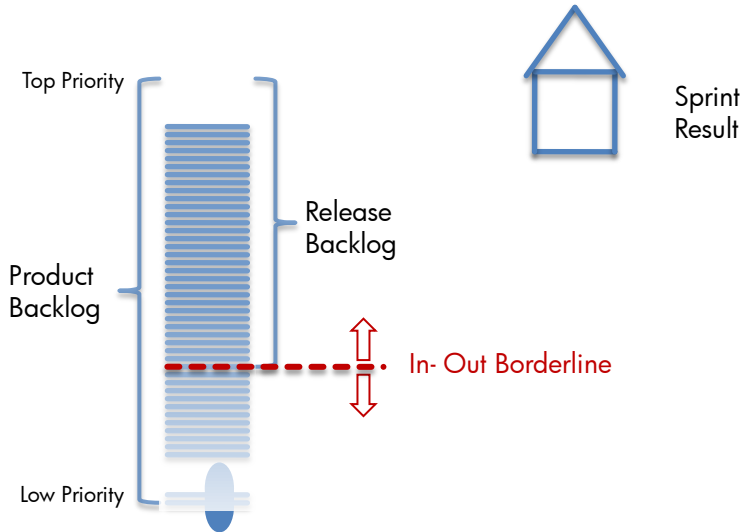


September 2009

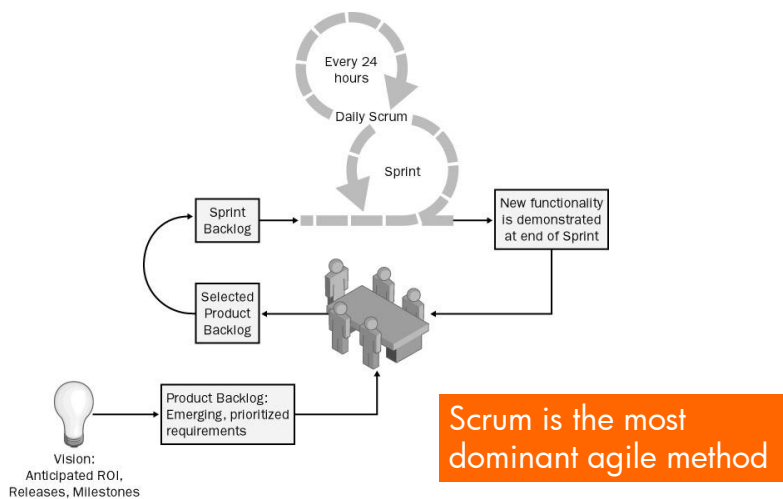
Copyright © 2009 Gerald Heller

10

Backlog management



Scrum overview



Scrum is the most dominant agile method

Expectations for agile

- Focus on highest customer value
- Be able to work on incomplete information
- Travel light
- Incremental delivery
- Visibility into progress for all parties
- Quality results as early as possible

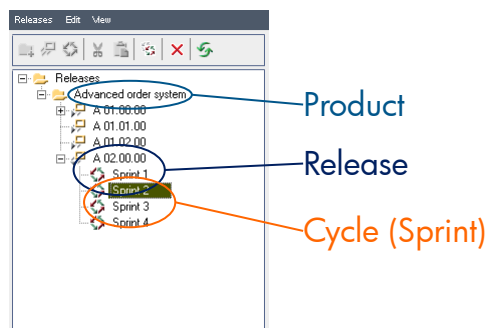
Agile development – state of practice

- Experimentation phase comes to an end
- Signals of maturity
 - Siemens Nokia Networks, SAP, HP, AOL,
- Standardization initiative: IEEE 1648
 - recommended practice for agile development
- More and more tools support agile
- Agile merged with existing practices

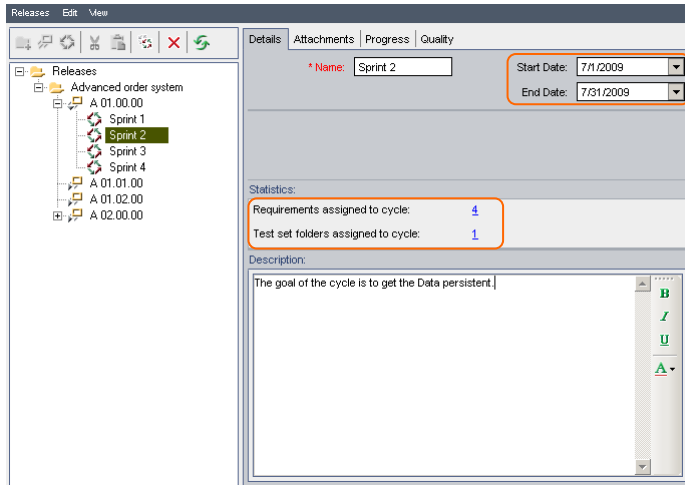
Tool expectations for agile

- Support key agile practices
- Can be tailored to needs of all stakeholders
- Provide progress and value reporting
 - Based on iterations
 - Based on release
- Span entire development lifecycle

QC releases and cycles



QC releases and cycles – details

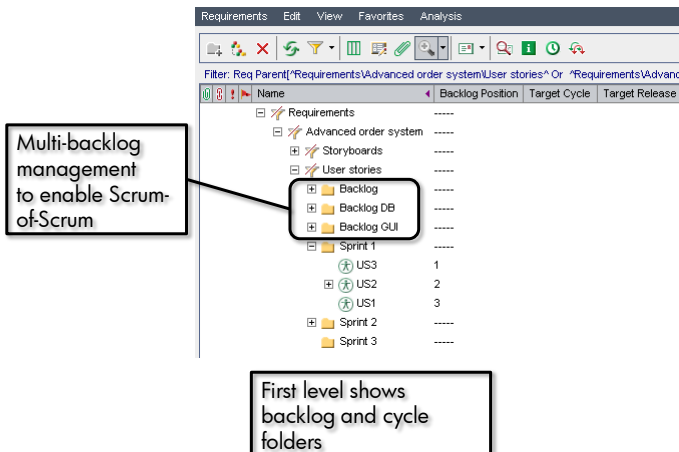


September 2009

Copyright © 2009 Gerald Heller

17

Structure of an agile project

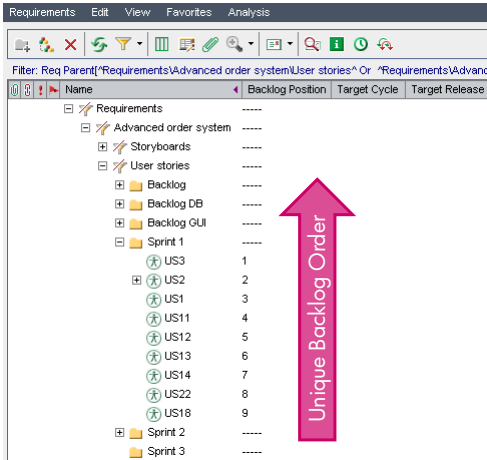


September 2009

Copyright © 2009 Gerald Heller

18

Product backlog



Name	Backlog Position	Target Cycle	Target Release
Requirements	-----		
Advanced order system	-----		
Storyboards	-----		
User stories	-----		
Backlog	-----		
Backlog DB	-----		
Backlog GUI	-----		
Sprint 1	-----		
US3	1		
US2	2		
US1	3		
US11	4		
US12	5		
US13	6		
US14	7		
US22	8		
US18	9		
Sprint 2	-----		
Sprint 3	-----		

User Story – definition

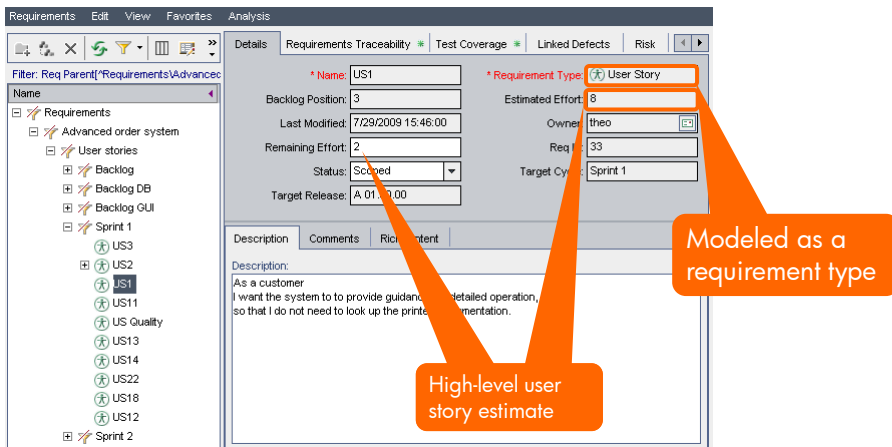
- A **User Story** is a software system requirement formulated as one or two sentences in the everyday or business language of the user
 - User stories are used with Agile software development methodologies for the specification of requirements
 - A User Story must be small enough to be completed in one cycle
 - A User Story is an informal statement of the requirement as long as the correspondence of acceptance testing procedures is lacking

Wikipedia July, 2009

User Story – sample properties

- **Name**
 - Meaningful to give an idea what the User Story is about
- **Description**
 - Short, understandable by all team members
 - Supplied with acceptance criteria
- **Priority**
 - Supplied by backlog position
- **Owner**
 - Responsible to manage the User Story, ensure it's properties are set correctly, it is broken down into tasks and tasks are assigned to owners
- **Estimated effort**
 - Macro level estimate that is done before it is broken down into tasks
- **Status**
 - Describes the current situation of the User Story

User Story - details



The screenshot shows the 'Details' view of a User Story (US1) in the Vivit Requirements tool. The interface includes a left-hand tree view showing a hierarchy of requirements under 'Advanced order system'. The main panel displays the following properties for US1:

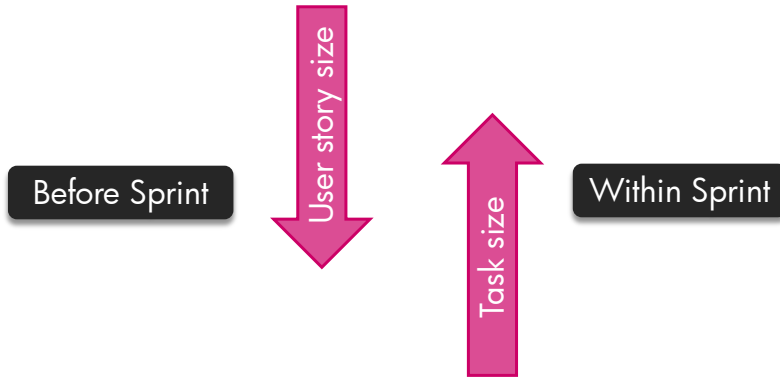
- Name:** US1
- Backlog Position:** 3
- Last Modified:** 7/29/2009 15:46:00
- Remaining Effort:** 2
- Status:** Scored
- Target Release:** A.01.00.00
- Requirement Type:** User Story
- Estimated Effort:** 8
- Owner:** theo
- Req. ID:** 33
- Target Cycle:** Sprint 1

Two callouts are present:

- An orange callout box pointing to the 'Requirement Type' field contains the text: "Modeled as a requirement type".
- An orange callout box pointing to the 'Estimated Effort' field contains the text: "High-level user story estimate".

The description field contains the text: "As a customer I want the system to provide guidance on detailed operation, so that I do not need to look up the printer's documentation."

Two level planning (at least)



September 2009

Copyright © 2009 Gerald Heller

24

Cycle planning – top down

Initial high-level estimates based on User Stories prior to Sprint start

Name	Estimated Effort
Requirements	
Advanced order system	248
User stories	124
Backlog	
Backlog DB	
Backlog GUI	
Sprint 1	111
US3	22
US2	15
US1	8
US11	13
US13	8
US14	6
US22	22
US18	11
US12	6
Sprint 2	13

User story estimates

September 2009

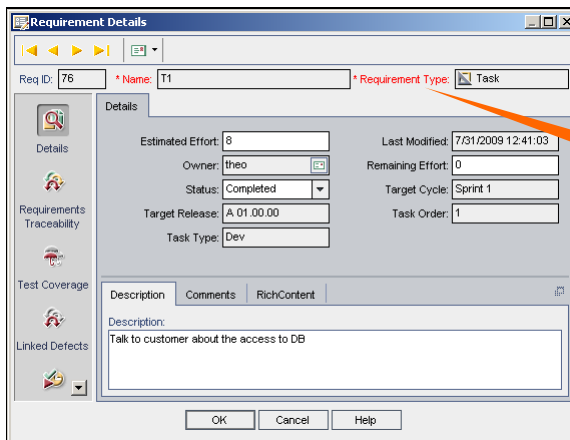
Copyright © 2009 Gerald Heller

25

Task – sample properties

- **Name**
 - Meaningful to describe the task
- **Description**
 - If the name is not self descriptive, explain here in more detail what the task is about
- **Owner**
 - Responsible to implement the task
- **Effort Estimates**
 - Original Estimated Effort: detailed original estimate for the task, will never be updated once set
 - Current Estimated Effort: overall effort estimate for the task; initially set to the original estimated, but is updated as the owner learns more about the tasks
 - Actual Spent Effort: how much is already spent on the task, should be updated daily
 - Remaining Effort: is calculated
- **Origin:**
 - How was the task added? As part of the task breakdown of the User Story (Planned) or discovered during the work on the User Story (Discovered).

Task – in QC



Requirement Details

Req ID: 76 * Name: T1 * Requirement Type: Task

Details

Estimated Effort: 8 Last Modified: 7/31/2009 12:41:03

Owner: theo Remaining Effort: 0

Status: Completed Target Cycle: Sprint 1

Target Release: A 01.00.00 Task Order: 1

Task Type: Dev

Description: Comments RichContent

Description:
Talk to customer about the access to DB

OK Cancel Help

Task modeled as requirement type

Cycle planning – bottom up

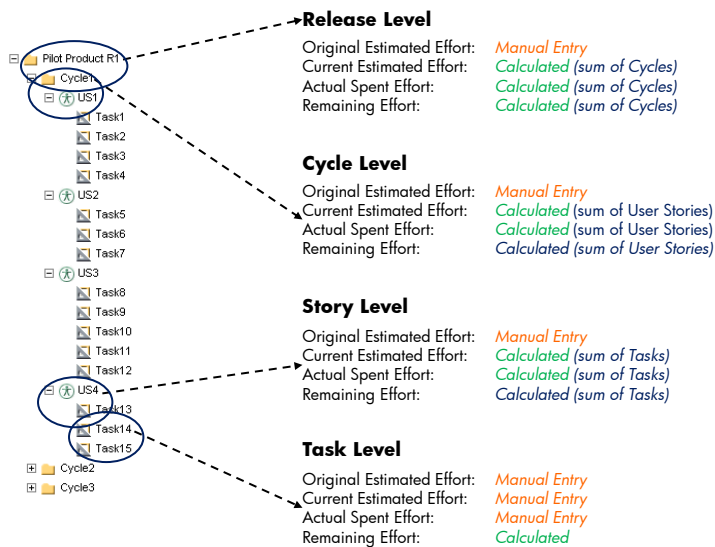
Detailed estimates based on tasks during Sprint

Name	Remainin...	Estimate...	Target C
Requirements			
Advanced order system			
User stories			
Backlog	28	124	
Backlog DB			
Backlog GUI			
Sprint 1	25	111	Sprint 1
US3	2	22	Sprint 1
US2	0	15	Sprint 1
T1	0	8	Sprint 1
T2	0	9	Sprint 1
US1	2	8	Sprint 1
US11	3	13	Sprint 1
US13	3	8	Sprint 1
US14	4	6	Sprint 1
US22	3	22	Sprint 1
US18	6	11	Sprint 1
US12	2	6	Sprint 1
Sprint 2	3	13	Sprint 2

High-level User Story estimate at 15 hours

Detailed estimates based on tasks sum up to 17

Effort estimation and calculation



Effort aggregation



Requirements Edit View Favorites Analysis

Filter: Req Parent("Requirements\Advanced order system\User stories" Or "Requirements\Advanced order system\Storyboards"); Sorted

Name	Backlog Position	Status	Remaining Effort	Estimated Effort	Target Cycle	Target Release
Requirements	-----	-----	-----	-----	-----	-----
Advanced order system	-----	-----	-----	-----	-----	-----
Storyboards	-----	-----	-----	-----	-----	-----
User stories	-----	-----	-----	-----	-----	-----
Backlog	-----	-----	28	126		
Backlog DB	-----	-----				
Backlog GUI	-----	-----				
Sprint 1	-----	-----	25	113		
US3	1	Released	2	22		
US2	2	Released	0	17		
US1	3	Scoped	2	8		
US11	4	Analyzed	3	13		
US13	6	Analyzed	3	8		
US14	7	Analyzed	4	6		
US22	8	Analyzed	3	22		
US18	9	Analyzed	6	11		
US12	10	Analyzed	2	6		
Sprint 2	-----	-----	3	13		
Sprint 3	-----	-----				

Aggregated effort for estimates and remaining work

Sprint 1 A 01.00.00
Sprint 1 A 01.00.00
Sprint 1 A 01.00.00
Sprint 1 A 01.00.00
Sprint 1 A 01.00.00
Sprint 1 A 01.00.00
Sprint 1 A 01.00.00
Sprint 1 A 01.00.00
Sprint 1 A 01.00.00
Sprint 2 A 01.00.00

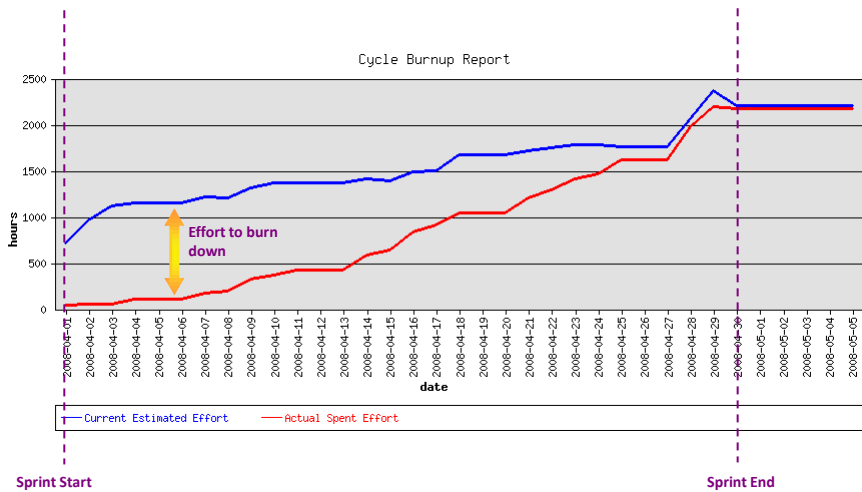
All items are assigned to a specific release and cycle

September 2009

Copyright © 2009 Gerald Heller

30

Sprint burn-up



September 2009

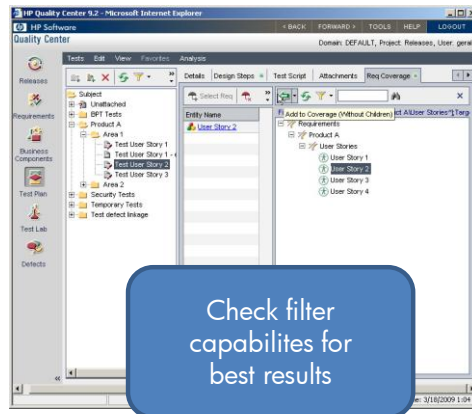
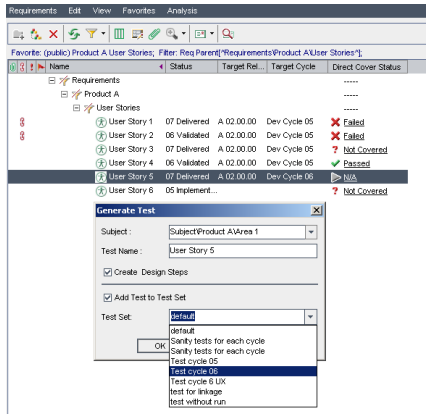
Copyright © 2009 Gerald Heller

31

User stories to test

A) Create test from User Story

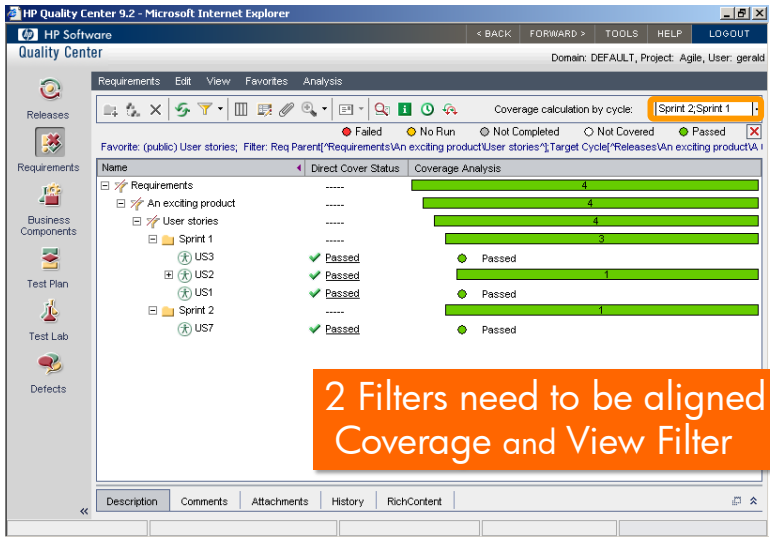
B) Link test to User Story



User stories

Requirements Edit View Favorites Analysis						
Favorite: (public) Product A User Stories; Filter: Req Parent[Requirements/Product A/User Stories*];						
Name	Status	Target Release	Target Cycle	Direct Cover Status		
Requirements					-----	
Product A					-----	
User Stories					-----	
User Story 1	07 Delivered	A 02.00.00	Dev Cycle 05	Failed	X Failed	
User Story 2	06 Validated	A 02.00.00	Dev Cycle 05	Failed	X Failed	
User Story 3	07 Delivered	A 02.00.00	Dev Cycle 05	Not Covered	? Not Covered	
User Story 4	06 Validated	A 02.00.00	Dev Cycle 05	Passed	✓ Passed	
User Story 5	07 Delivered	A 02.00.00	Dev Cycle 06	N/A	▶ N/A	
User Story 6	05 Implement...			Not Covered	? Not Covered	

Built-in coverage by cycle



HP Quality Center 9.2 - Microsoft Internet Explorer

HP Software Quality Center Domain: DEFAULT, Project: Agile, User: gerald

Requirements Edit View Favorites Analysis

Coverage calculation by cycle: Sprint 2, Sprint 1

Failed No Run Not Completed Not Covered Passed

Name	Direct Cover Status	Coverage Analysis
Requirements	-----	4
An exciting product	-----	4
User stories	-----	4
Sprint 1	-----	3
US3	Passed	1
US2	Passed	1
US1	Passed	1
Sprint 2	-----	1
US7	Passed	1

**2 Filters need to be aligned!
Coverage and View Filter**

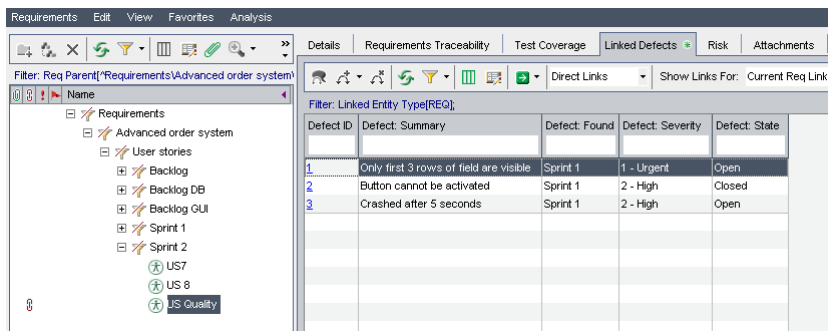
Description Comments Attachments History RichContent

September 2009

Copyright © 2009 Gerald Heller

34

Quality User Story – fixing defects



Requirements Edit View Favorites Analysis

Details Requirements Traceability Test Coverage Linked Defects Risk Attachments

Filter: Req Parent(*Requirements\Advanced order system)

Filter: Linked Entity Type[REQ]

Defect ID	Defect: Summary	Defect: Found	Defect: Severity	Defect: State
1	Only first 3 rows of field are visible	Sprint 1	1 - Urgent	Open
2	Button cannot be activated	Sprint 1	2 - High	Closed
3	Crashed after 5 seconds	Sprint 1	2 - High	Open

September 2009

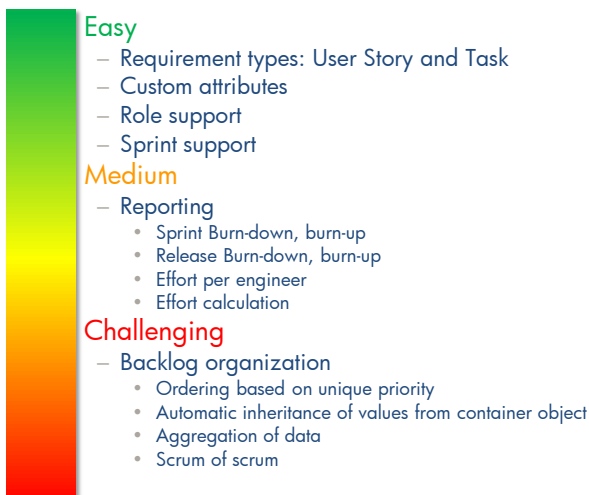
Copyright © 2009 Gerald Heller

35

Experiences

- Tool customization must match team's experience with agile
- Team experience with agile has a strong impact on required tool customization
 - Start simple
 - Grow structure and process
- Harmonize across teams
- QC provides a solid base for agile development
- QC customization is prerequisite for agile success

QC customization for agile



*need for
thorough
design of
customized
solution
increases*



 Thank you!



Questions, feedback: contact me
Further information & news: agileQC.net

Gerald Heller
software process optimization
gerald.heller@swq4all.de

