

CM & QM and Peer Reviews

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CS577a
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Outline

CS577a Quality Management (QM)

- The three legs

CS577a Configuration Management (CM)

- CM System Approaches
- Change Control

Peer Reviews (AKA wrongly as "Inspections")

- ROI by Type of Review
- Peer Reviews as practiced in 577a

Peer Review Workshop

Quality Management

The Quality tasks in QM

- Quality Assessment (and Reporting)
 - Peer (team) Reviews
 - Agile (IIV&V) Artifact Reviews
 - Testing
- Quality Tracking (Follow up on the "Reports")
- Quality Improvement

With pre-requisites

- Configuration Management
- Early Defect Finding (Identification) mechanisms
- Defect and Effort Data submittal

CS577a Quality Management

Pre-requisites

- Configuration Management: Described in LCP
- Early Defect Finding (Identification) mechanisms: PR & AAR
- Defect and Effort Data submittal: QR

The Quality tasks in QM

- Quality Assessment (and Reporting)
 - Agile (IIV&V) Artifact Reviews (AAR)
 - Peer (team) Reviews: Agile Internal Reviews (AIR)
 - Testing?
 - Problem Reports
- Quality Assessments Tracking (Follow up on the "Reports")
 - Available mechanisms: Bugzilla, Mantis, ClearQuest, ...
- Quality Improvement
 - Iterative reaction to feedback, IIV&V/Peer reviews, ARBs

Cost Schedule Quality Tradeoff

Q, \$, Time:

- Normal projects: Pick two of the three: the other is the "independent" variable.
- MBASE projects: Pick all three: Shrink the "size" (features/capabilities, documentation/project-requirements, LOS, Interfaces, Evolution)

CS577a CM

CM System Approaches (possible)

- For Documents:
 - File naming conventions on Team Website
 - ClearCase Light
- For Prototype Code (especially if more than one prototyper)
 - CVS
 - ClearCase Light
 - ...

Change Control ...

CS577a CM (cont.)

Change Control

- Heavy-weight: change control boards
- Medium-weight: as described in full MBASE guidelines
- Light-weight:
 - Project Manager/Leader oversight
 - Clear (verbally) with client

CMM Level 3 KPA--Peer Reviews

Goals

- "1. Peer review activities are planned.
- "2. Defects in the software work products are identified and removed."

Purpose

- Remove defects from the software work products early and efficiently.
- Corollary effects:
 - develop a better understanding of the software work products
 - develop a better understanding of the defects that can be prevented.

"This Key Process Area (KPA) covers the practices for performing peer reviews."

NOTE: specific software work products that undergo peer review are identified in the key process areas that describe for each software work product

- development process (including iterative approaches)
- maintenance process (post development)

Peer Reviews – CMM Level 3 KPA(cont.)

Can be implemented via

- Fagan-style inspections [Fagan86],
- Structured walkthroughs
- Number of other collegial review methods [Freedman90]

Involve a methodical examination of software work products by the producers' peers

- to identify defects and
- to identify areas where changes are needed

The specific products that will undergo peer review

- Identified in the project's defined software process
- Scheduled as part of the software project planning activities

Peer Reviews in CS577a (cont.)

The top-level activities performed for Peer Reviews are:

"1. Peer reviews are planned, and the plans are documented."

In LCP!

"2. Peer reviews are performed according to a documented procedure."

In presentations:

- ec11-2[DefectID=PeerReviewPracsWrkshp]v0.ppt
- ec16-2[IIV&V-AgileArtifactReviewWrkshp]v0
- ec16-3[AgileInternalReviewWorkshop]v0.ppt

"3. Data on the conduct and results of the peer reviews are recorded."

In Quality Report (QR)

CS577a MBASE Defect Identification Processes

Agile Artifact Review (AAR): IIV&Ver

Multiple issues/problems found by a single reviewer:

(only two types of forms: Issues/Concern Log and Defect List)

- Recorded as "Concerns" on Concern Log
- Author (team) completes "Defect List"

Agile Internal Review:

- Three types of forms
- Peers/Team (at least three, preferably four)
- Process description exists

CS577 MBASE Defect Reporting Concepts

Agile Artifact Review

Project Name:				Review #			
Artifact:				Review Date:			
Module:				Review Time:			
MBASE Phase/level:							
Activity:							
Exit Criteria:							
Reviewer:				Date Sent to Reviewer:			
Reviewer email:				Date Returned to Author:			
Reviewer phone:				Date Returned to QAT:			
Auhor:				Total Preparation Time:			
<p>Use this sheet to record the areas of concern that come up during your reading/review of the Artifact. Give the "location" information and the associated technical description of the area of concern to indicate to the developer/author during his/her analysis of this information about the relevant part of the Artifact. Give your opinion for the classification of the area of concern in M/W/E field. Write in letter each for Missing(M)/Worng(W)/Extra(E). Also, rank the priority and criticality in both field as High, Medium or Low.</p> <p>Keep this sheet with you during the analysis of the artifact. When an area of concern you recorded here requires corrective action and is placed on the artifact's Problem list, note the number of the Defect/Issue(s) in the Areas of Concern Log. Problems are things you believe the author of this artifact can/should fix; "open issues" are things which can not be corrected solely in this artifact or at this time.</p>							
#	Location(s)	Area of concern			M/W/E	Priority	Criticality

New CS577 MBASE Defect Reporting Concepts (cont.)

Agile Artifact Review (cont.)

Project Name:	_____	Review #:	_____ - _____
Artifact:	_____	Date:	_____
Module:	_____	Activity:	_____
Type of review: [Indepent] Review		MBASE Phase/level: _____	
Review Date(s): _____			
No. of Priority:	<input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low	No. of Criticality:	<input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low <input type="checkbox"/> No. of open issues
Comments:			

Defects/Issues									
D/I #	Location (s)	Description	Classification	Priority	Criticality	Activity of Defect Injection (Requirements, Design, Code, etc.)	Location of correction(s)	Date of fix	Comments
			<input type="checkbox"/> Missing <input type="checkbox"/> Wrong <input type="checkbox"/> Extra <input type="checkbox"/> Open issue	<input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low	<input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low				
			<input type="checkbox"/> Missing <input type="checkbox"/> Wrong <input type="checkbox"/> Extra <input type="checkbox"/> Open issue	<input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low	<input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low				

CS577 MBASE Defect Reporting Concepts (cont.)

Agile Internal Review

Project Name:		Review #	-
Artifact:		Review Date:	
Module:		Review Time:	
MBASE Phase/level:			
Activity:			
Exit Criteria:			
Review Leader:		Date Sent to Reviewer:	
Review Leader email:		Date Returned to Author:	
Review Leader phone:		Date Returned to QAT:	
Auhor:		Total Preparation Time:	
Reviewer 1:		Reviewer 2:	
Reviewer 4:		Reviewer 5:	

Use this sheet to record the areas of concern that come up during your reading/review of the Artifact. Give the "location" information and the associated technical description of the area of concern to indicate to the developer/author during his/her analysis of this information about the relevant part of the Artifact. Give your opinion for the classification of the area of concern in M/W/E field. Write in letter each for Missing(M)/Wrong(W)/Extra(E). Also, rank the priority and criticality in both field as High, Medium or Low.

Problems are things you believe the author of this artifact can/should fix; "open issues" are things which can not be corrected solely in this artifact or at this time.

#	Location(s)	Area of concern	M/W/E	Priority	Criticality

CS577 MBASE Defect Reporting Concepts (cont.)

Agile Internal Review (cont.)

Artifact:						Date:		
Module:								
Type of review:				MBASE Phase/level:			Review Date(s):	
Defects found:	<input type="checkbox"/> Major	<input type="checkbox"/> Minor	<input type="checkbox"/> No. of Open Issues	<input type="checkbox"/> Number of Unavoidable defects	<input type="checkbox"/> Number of Avoidable defects			
Comments:								

Defects/Issues									
D / #	Location (s)	Description	Classification	Priority	Criticality	Activity of Defect Injection (Requirements, Design, Code, etc.)	Location of correction(s)	Date of fix	Comments
			<input type="checkbox"/> Missing	<input type="checkbox"/> High	<input type="checkbox"/> High				
			<input type="checkbox"/> Wrong	<input type="checkbox"/> Medium	<input type="checkbox"/> Medium				
			<input type="checkbox"/> Extra	<input type="checkbox"/> Low	<input type="checkbox"/> Low				
			<input type="checkbox"/> Open issue						