



Practicalities of Requirements Testing Assessment Criteria

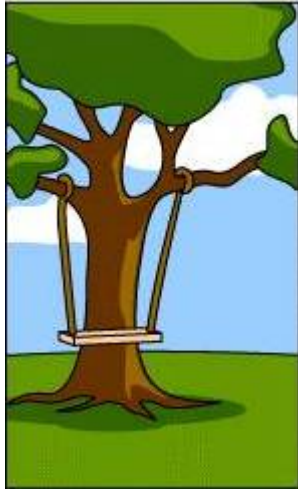
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What the customer asked for



How the requirements were written



How it was designed



How it was built



What the customer needed

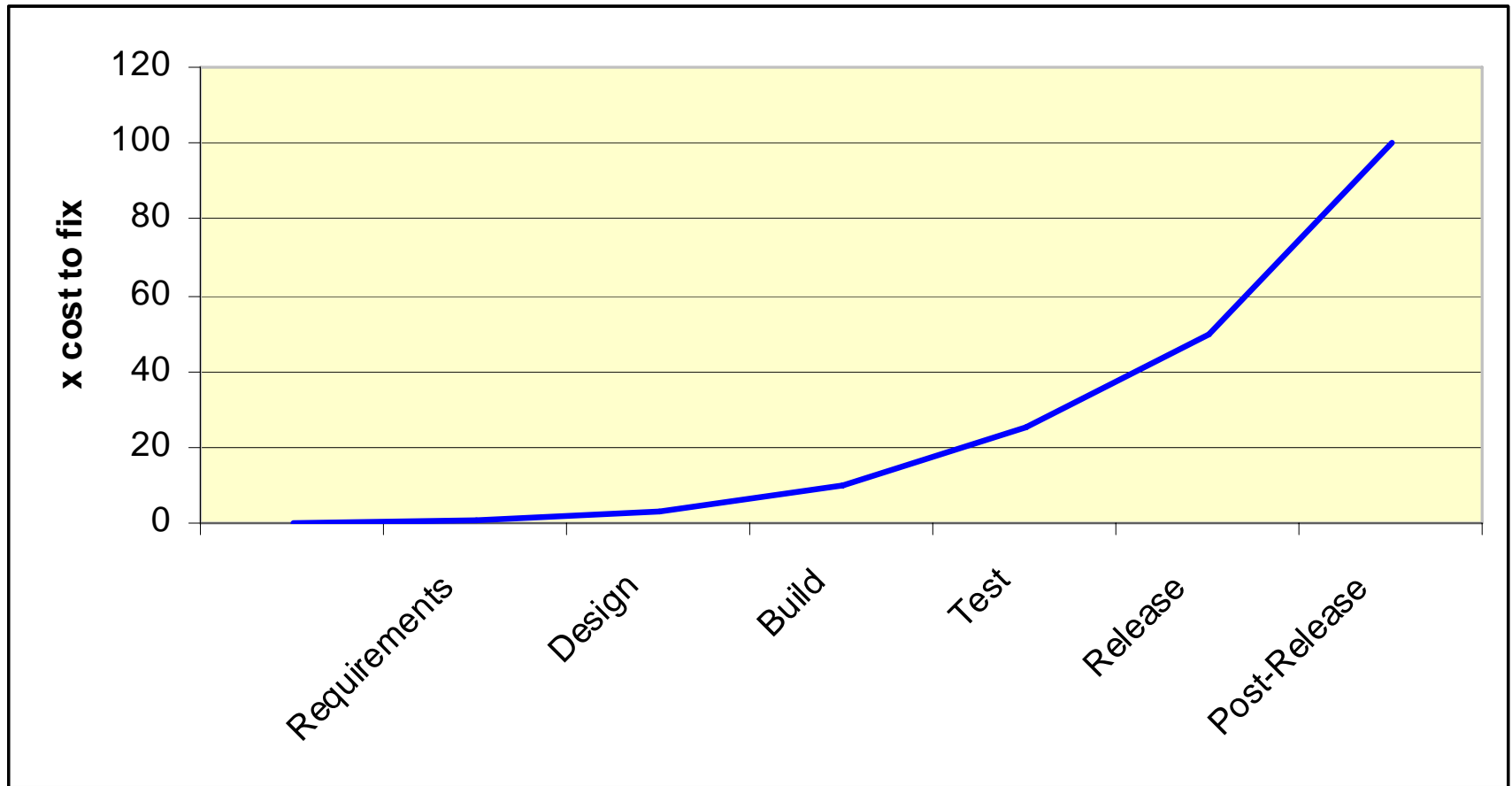
Objective

- To communicate a set of assessment criteria that can be applied to the requirements specification

Agenda

- Why test early?
- What is static testing?
- What types of review should be used?
- The review process
- The assessment criteria – the 5 C's
- Measuring and reporting
- Summary

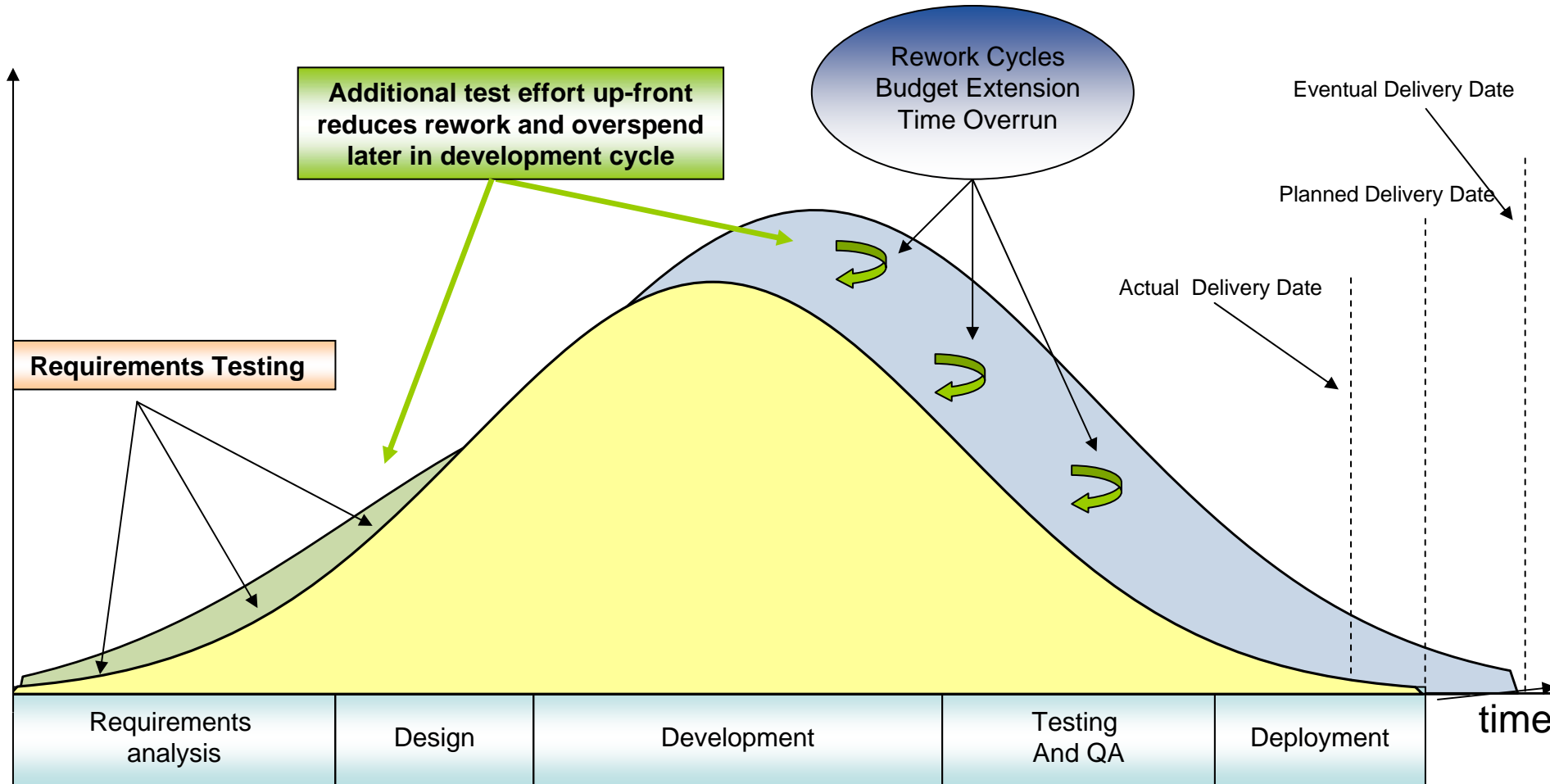
Why test early? - cost of a defect



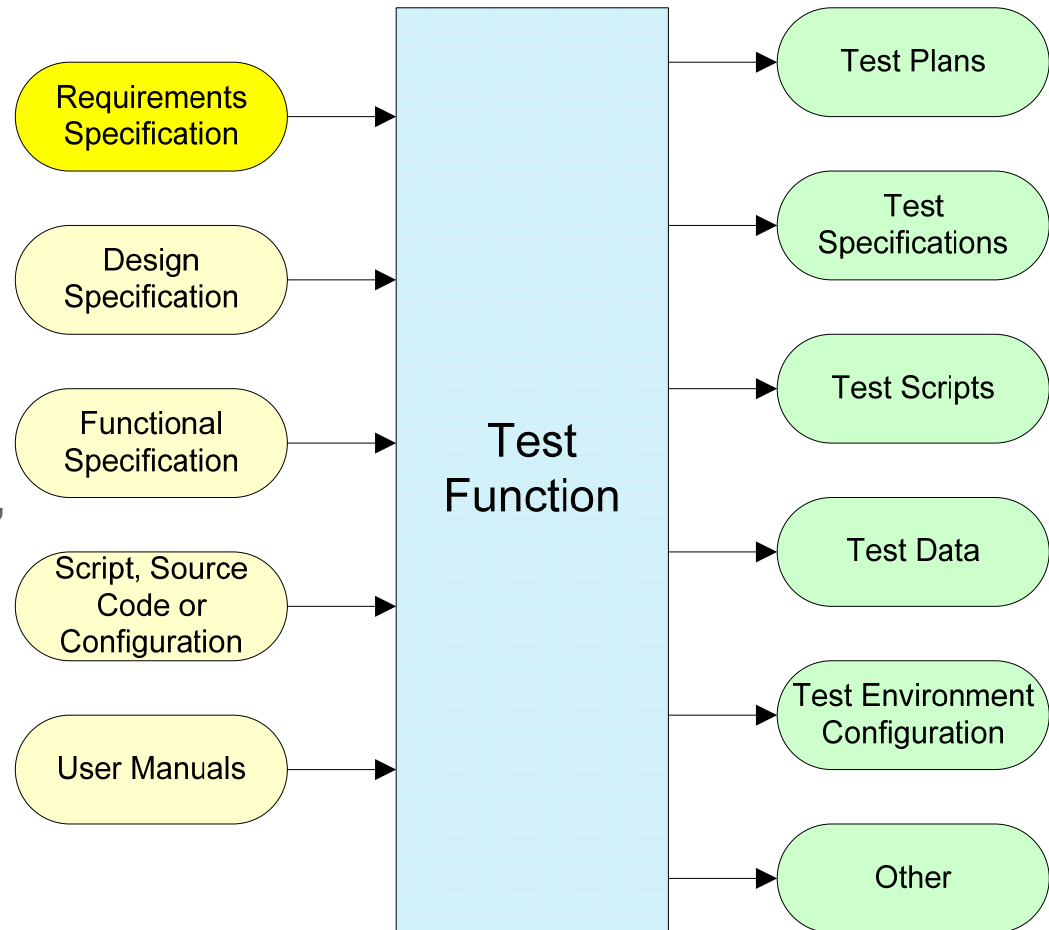
Ref: Kaner, Cem; James Bach, Bret Pettichord (2001). *Lessons Learned in Software Testing: A Context-Driven Approach*. Wiley. p. 4. ISBN 0-471-08112-4.

Ref: McConnell, Steve (2004). *Code Complete* (2nd ed.). Microsoft Press. pp. 960. ISBN 0-7356-1967-0.

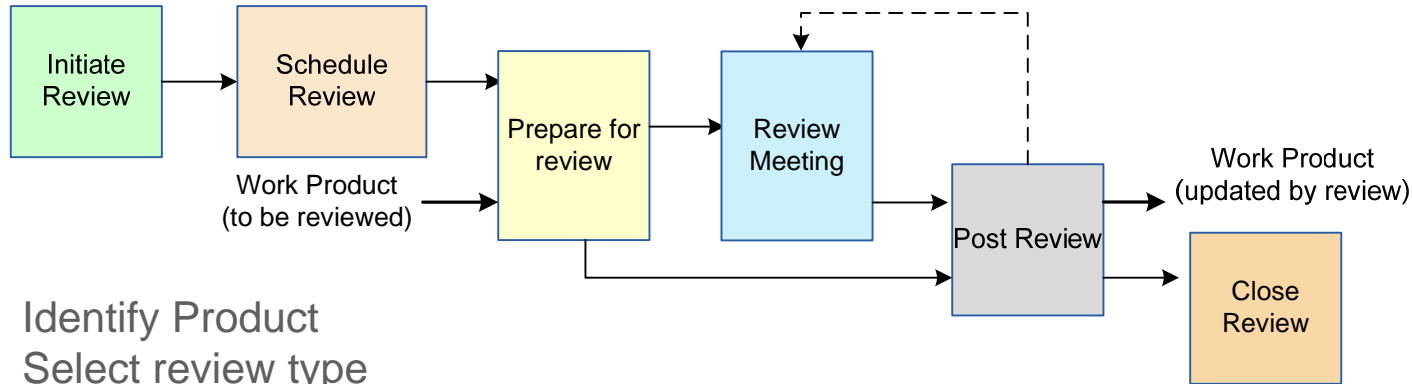
Why test early? - mitigate project delays



- Static testing is an analysis technique where artifacts are reviewed to identify issues that will impact downstream development
- In the context of the test function, all artifacts can undergo static testing, either in terms of
 - their fitness for purpose to support the intended testing function, or
 - as testing deliverables



Informal Reviews	Formal Reviews
Not planned in any detail, one to one discussion or unstructured meeting	A planned activity, formal meeting with defined scope
Usually 1 or 2 reviewers with a single view point	Reviewers assigned roles and reviewers prepare, usually 4 to 6 participants
Effectiveness relies on skills, knowledge and diligence of the reviewers	Process to review and update the artefact
Comments discussed or returned	Anomalies and defects recorded



- Identify Product
- Select review type
- Author checks product is ready
- Lead initiates review & appoints review co-ordinator
 - Arrange review meeting
 - Define objective / focus & scope
 - Assemble appropriate review panel
 - Reviewers Prepare for Meeting
 - Hold meeting and record actions
 - Implement and follow up actions
 - Close review

Raw Requirement

Benefit:

- *reduced time and cost to deliver;*
- *dramatic reduction of rework cycles;*
- *significant increase in predictability;*
- *Improved cost management*

Correct

Clear

Concise

Comprehensive

Cohesive

"No assumptions"

"No interpretation"

Refined Requirement

- Organise the requirements
 - Uniquely identify
 - Logically group for ease of maintenance
 - Prioritise in terms of business criticality
- Ensure ownership
 - Understand the source of each requirement
 - Specifically requested by the business
 - Conforms to an external or technical requirement
- Clear perceived benefit
 - Benefit not negated by cost of development

Raw Requirement

- Correctly and accurately describe the functionality
- Detail what and not how
- Is it deliverable?
- Is it testable?

Correct

Clear

Concise

Comprehensive

Cohesive

Refined Requirement

Raw Requirement

- Singular
- Unambiguous
- No vague or subjective words
- Jargon free
- Measurable

Correct

Clear

Concise

Comprehensive

Cohesive

Refined Requirement

Raw Requirement

- Direct and to the point
- Short
- Use bullet points and diagrams
- Define terms
- One requirement per statement

Correct

Clear

Concise

Comprehensive

Cohesive

Refined Requirement

Raw Requirement

Correct

Clear

Concise

Comprehensive

Cohesive

- Complete
- Exact
- Assumption free
- Include legal & regulatory rules
- Include performance
- Include security
- Audience sensitive

Refined Requirement

Raw Requirement

Correct

Clear

Concise

Comprehensive

Cohesive

Refined Requirement

- Equal granularity
- No contradictions
- No duplication
- Make dependencies explicit

Target %	75	90	50	90	70	90	70
%	75.00	100.00	75.00	100.00	100.00	50.00	100.00
	Pass	Pass	Pass	Pass	Pass	Fail	Pass

Passed **No** - This calculates automatically

No. of requirements **4** - This figure calculates automatically

Requirements	Assessment Scores							
	Correct	Clear	Concise	Comprehensive	Cohesive	Owned	Justified	Defect
Example 1	x	✓	✓	✓	✓	✓	✓	
Example 2	✓	✓	✓	✓	✓	x	✓	
Example 3	✓	✓	x	✓	✓	✓	✓	
Example 4	✓	✓	✓	✓	✓	x	✓	
Total	3	4	3	4	4	2	4	

- A significant number of defects are introduced at the requirements stage and can therefore be found during this stage
- Performing a formal requirements testing exercise early in the development life cycle allows these defects to be identified and fixed
- Applying the assessment criteria covered in this presentation to the requirements specification, using a formal review before it is signed off is a practical way of carrying out early testing





no doubt about it

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