
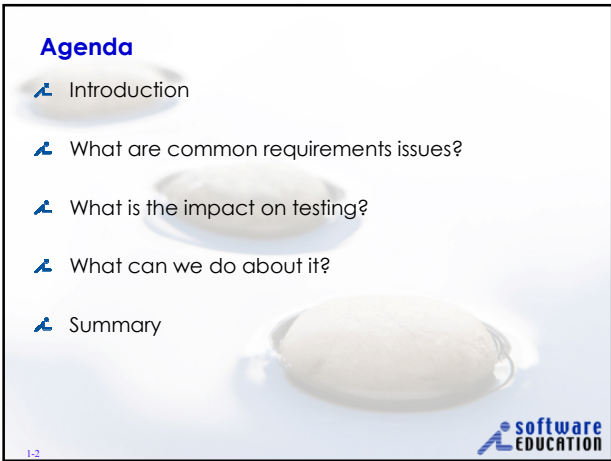


The Impact of Requirement Issues on Testing


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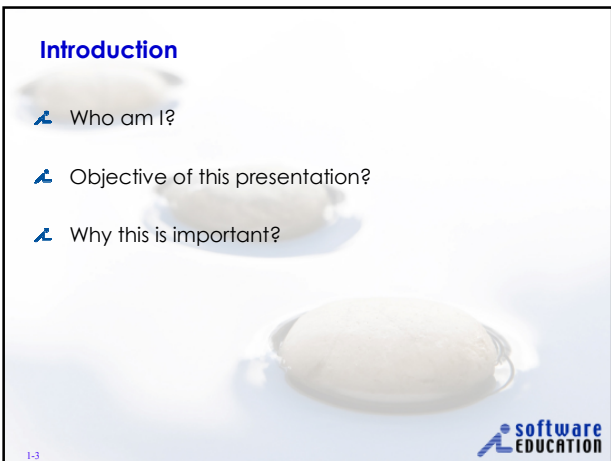
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Agenda


- Introduction
- What are common requirements issues?
- What is the impact on testing?
- What can we do about it?
- Summary

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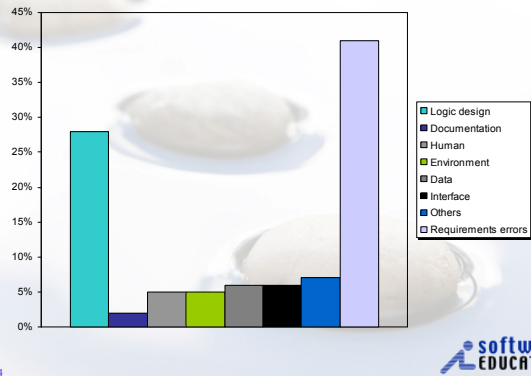


Introduction

- Who am I?
- Objective of this presentation?
- Why this is important?

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Source of Software Errors



1-4

5 Common Requirements Issues

✦ Absence & Incompleteness of Requirements

1-5

Issue: Absent or Incomplete Requirements

- ✦ Requirements specifications may be gappy
- ✦ Can be missing functional or non-functional requirements
- ✦ Failure to specify:
 - UI layouts & sequencing
 - Essential behaviour of the system
 - Lack of exception handling
 - Auditing & archiving
 - Security
 - Backup & recovery actions
 - Data conversion
 - Performance expectations
 - Usability
 - Maintainability
 - Portability

1-6

Impact: Absent or Incomplete Requirements

- Depending on the test level gappy requirements can lead to gappy testing
- Increase in system failure in UAT & production
- Delayed completion of system testing
- Inaccurate testing estimates
- Decreased credibility of test team
- Delayed benefit realisation

Actions: Absent or Incomplete Requirements

- Supplement testing with experience based techniques
- Cultivate the relationship between Testing & the Business Representatives
- Testing must understand the business problems that the business solution is trying to fix.
- Implementation of Early Testing
- Develop checklists for requirements specification reviews.

Common Requirements Issues?

- Absence & Incompleteness
- Incorrectness

Issue: Incorrect Requirements

- ✚ Requirements specifications may be wrong
- ✚ Business Reps may be not be good SMEs
- ✚ Business Reps may not be diligent, or available to the project as required.
- ✚ May occur due to inadequate change control processes within the project

I-10

Impact: Incorrect Requirements

- ✚ Incorrect test cases & expected results
- ✚ Wasted time investigating test case failures
- ✚ Rework of test cases & re-testing
- ✚ Loss of credibility for the test team

I-11

Actions: Incorrect Requirements

- ✚ Raise risks regarding SME experience & availability
- ✚ Ask that testing be invited to all key requirements analysis workshops & meetings
- ✚ Instigate a central change management process if there is not one already.
- ✚ Maintain a good relationship between testing, development & business representatives (maximum communication)

I-12

Common Requirements Issues?

- ✚ Absence & Incompleteness
- ✚ Incorrectness
- ✚ **Ambiguity & Vagueness**

Issue: Ambiguous & Vague Requirements

- ✚ Requirements can be ambiguous &/or vague
- ✚ The devil's in the detail - can be a result of users or BA's not really knowing the detail of the requirements
- ✚ Can be poor requirements definition processes

Impact: Ambiguous & Vague Requirements

- ✚ Wasted time clarifying requirements
- ✚ Inability to determine how to test requirement
- ✚ Incorrect test cases & expected results
- ✚ Rework of test cases & re-testing
- ✚ Loss of credibility for the test team

Actions: Ambiguous & Vague Requirements

- ⚡ Risk based testing
- ⚡ Reviews & early testing
- ⚡ Critical thinking techniques
- ⚡ Involvement of test analyst in requirements gathering workshops & meetings

1-16

Common Requirements Issues?

- ⚡ Absence & Incompleteness
- ⚡ Incorrectness
- ⚡ Ambiguity & Vagueness
- ⚡ **Volatility**

1-17

Issue: Volatile Requirements

- ⚡ Requirements specifications may change frequently.
- ⚡ May be due to:
 - Volatile business environment
 - Inconsistent involvement of or multiple stakeholders
 - Users may not know what they want (just know they have a problem or some ideas)
 - Investigation determining that requirement is unfeasible or too expensive
 - Lack of early testing
 - Poor change management

1-18

Impact: Volatile Requirements

- ⚡ Rework of test cases & re-testing
- ⚡ Extended re-testing
- ⚡ Missed delivery dates
- ⚡ Delayed benefits realisation

1-19

Actions: Volatile Requirements

- ⚡ Just in Time testing
- ⚡ Work on building consensus with the business representatives on the expected results
- ⚡ Exploratory testing
- ⚡ Base testing on scenarios rather than requirements.
- ⚡ Good change management practices

1-20

Common Requirements Issues?

- ⚡ Absence & Incompleteness
- ⚡ Incorrectness
- ⚡ Ambiguity & Vagueness
- ⚡ Volatility
- ⚡ Traceability

1-21

Issue: Poor Requirements Traceability

- ✦ Requirements may not be traceable through to the work items that satisfy them.
- ✦ Often projects do not understand the value in maintaining traceability to & from requirements.

Impact: Poor Requirements Traceability

- ✦ Unknown impact of changing requirements
- ✦ Unknown test coverage.
- ✦ Unable to evaluate number of requirements successfully met
- ✦ Unable to evaluate which requirements have not been successfully delivered

Actions: Poor Requirements Traceability

- ✦ Assign unique identifiers to requirements
- ✦ Implement requirements change management processes
- ✦ Implement & maintain a requirements traceability matrix
- ✦ Where possible implement requirements & test management tools to automate

Summary

- Several common requirements issues, each has a variety of impacts on testing
- Most impacts can be eliminated or minimised through actions by the project or test team
- Effective techniques for minimising the impact of requirements issues on testing are:
 - Early testing & use of requirements review checklists
 - Use exploratory techniques as well
 - Build a central repository of requirements changes & clarifications
 - Understand the problems driving the project & the work practices of the business users
 - Introduce integrated requirements management & traceability
 - Adopt More Agile or JIT approaches to testing

1-25

Any Questions?

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1-26

Thank you

1-27
