

Specification By Example

A Static Testing case study

“I believe fewer defects were raised as a result of our common understanding upfront which saved time during the test cycle”

THE ISSUE

Our client – a government department – had elaborate software requirement specifications (developed by the Business Analysts) on a project that followed a Waterfall methodology.

The size and complexity of the business processes led to very detailed and isolated low-level designs. The resulting specifications masked the product’s end-to-end process. The reviews conducted on the specifications followed the document structure and therefore did not focus on the product as a whole.

Analysis of the defects raised during test execution exposed the missed business scenarios that the product did not cater for, as well as misinterpretations of the business requirements between the teams. This revealed the nature of the review process as ineffective and inefficient. The client acknowledged these weaknesses and together we identified three corrective actions:

- Increase communication and collaboration of the teams before test execution commenced
- Develop and discuss scenarios to aid understanding of the product
- Identify defects earlier in the lifecycle of the project

KEY RESULTS

- + In terms of the number of defects identified for each test case, the employment of SBE played a significant role in the reduction of defects:
 - 0.37 defects / test case (release **with** SBE)
 - 0.58 defects / test case, average across 3 releases (release **without** SBE)
- + While other factors and processes contributed, there was a 40% reduction in defects where SBE was employed
- + The final phase where more SBE was used saw a slightly larger reduction than other phases

“Scenarios brought the product together as a whole, whereas the software requirement specification separated it out”

THE SOLUTION

Specification By Example was used to address the creation of business scenarios in the search for defects during the review phase of the project. It was used to increase the communication and collaboration between the teams involved and provide an environment in which the teams could ensure a common understanding of the product.

Testing would create scenarios using the structure provided in SBE: “Given, When, Then”. The scenarios were based on the software requirement specification. The aim of the scenarios was to bring the product

together as a whole (where the software requirement specification separated it out) and to identify areas of the specification that were problematic, complex and ambiguous.

Review sessions were held with the core team involved in delivering the product. Testing would chair the review sessions and each scenario was discussed as a team. Review sessions were held frequently. This increased communication and collaboration created a platform that allowed earlier product verification.

THE RESULTS

A Lead Developer who was part of the SBE process says that Specification By Example was a very useful tool in this project. “The process brought together BA’s, Developers and Testers to review specific scenarios in light of the requirements. It ensured that all parties had the same understanding of the requirements and highlighted aspects of them that needed further clarification.

“It also prompted questions around the scenarios and, in some cases, identified further scenarios that needed to be included in test scope.

“I believe fewer defects were raised as a result

of our common understanding upfront, which saved time during the test cycle. As a Developer, I appreciated being a part of this process.”

One of the BA’s on the project agrees. “The Specification By Example approach really helped to promote discussion across the analysis, development and test teams – and identify and resolve ambiguity in requirements.

“Any approach that allows us to ask and answer those questions ‘upfront’ ultimately saves time in terms of defects and change requests and leads to a better quality deliverable overall.”