

Global telecom service provider increases risk coverage - with fewer test cases – through risk-based testing



For almost 4 years, one of the world's leading mobile telecommunications companies has been using Tricentis Tosca's Model-Based Test Automation to automate approximately 70% of their testing. This test automation reduced their regression testing time by 87.5%—resulting in fewer testing delays and faster time to market.

However, their remaining manual testing efforts still consumed a considerable amount of time and resources—and priority 1 (P1) and priority 2 (P2) defects were still slipping into production. Working with Tricentis, they learned that Tricentis' risk-based test case design could be

applied to manual testing as well as automated testing. They decided to pilot this approach in 2 core projects. The result: an optimized set of manual tests that reduces testing time and cost while also lowering the rate of escaped defects.

Testing Objectives

The client's specific testing objectives, in order of priority, were:

- Optimize test cases
- Ensure zero P1 and P2 production defects
- Reduce the project's overall testing effort and cost

Testing Tool Requirements

Working with Tricentis, the client learned that Tricentis Tosca's risk-based test case design functionality could help them achieve their objectives. They selected this approach because it could help them:

- Optimize risk coverage based on mathematical risk-coverage algorithms
- Generate test cases from a single source
- Calculate the coverage established
- Achieve end-to-end traceability from requirements to execution

The Solution – Tricentis Tosca Risk-Based Test Case Design

Tricentis was called in to pilot risk-based test case design for 2 projects. The pilots featured Tricentis' Risk Coverage Optimizer, which helps users determine the minimum number of test cases needed to provide the maximum risk coverage. This ensures that there are no redundancies in the test portfolio and

that the correct tests are being executed. Through this analysis, the client identified key areas that were not previously covered, as well as existing tests that were not adding value. Ultimately, they were able to achieve 100% coverage with considerably fewer test cases.

About Tricentis

Tricentis provides a Continuous Testing platform that accelerates testing to keep pace with Agile and DevOps. With the industry's most innovative functional testing technologies, Tricentis breaks through the barriers experienced with conventional software testing tools - achieving test automation rates of over 90%.

Our 400+ customers include global names from the Top 500 brands such as A&E, Allianz, Deutsche Bank, HBO, JetBlue, Orange, Swiss Re, Telstra, Toyota, UBS, Vantiv, Virgin Airlines, and Zurich Insurance. Tricentis has offices in Austria, United States, Germany, Switzerland, UK, Netherlands, Poland, and Australia.

Project A: New solution for prepaid customers

Project A provides customers a new, more flexible, approach to prepaid phone, text, and data services. Here's a snapshot of the initial state of the testing for this project:

Total planned test cases	Total planning effort	Expected manual execution rate	Total execution effort	Coverage established
2106	4 weeks	6 test cases/day	70 person weeks	95%

Working with Tricentis, the client traced the project back to the Business Requirement Specification and Technical Design documents. Together, we conducted a 3-day Test Case Design workshop with the SME and ultimately mapped out the classes and test case design sheets for the project. The end result was an optimized set of 1283 test cases (reduced from 2106) with 100% requirement coverage (increased from 95%).

End Result – Business Benefit:

Optimized test cases	% Optimization	Total planning effort	Coverage established	Total execution effort	Execution effort saved	% Savings
1283	39%	3 days	100%	43 weeks	27 weeks	37.20%

For this pilot project, the client achieved 39% optimization, which resulted in a savings of 27 weeks –translating to 37.2% effort reduction.

Project B: Accessories on a monthly payment plan

This project enables customers to add accessories to their monthly payment plans. It is expected to increase accessory sales by allowing customers to purchase desired accessories without having to pay the total cost upfront. Here's a snapshot of the initial state of the testing for this project:

Total planned test cases	Total planning effort	Expected manual execution rate	Total execution effort	Coverage established
1280	5 weeks	6 test cases/day	43 person weeks	100%

Project B was approached much like Project A: a specification/design review, followed by a workshop with an SME. In this case, we held 5-day workshop and optimized the test cases to 801 (reduced from 1280) while maintaining 100% requirement coverage.

End Result – Business Benefit:

Optimized test cases	% Optimization	Total planning effort	Coverage established	Total execution effort	Execution effort saved	% Savings
801	37%	7 days	100%	27 weeks	16 weeks	40.75%

For this pilot project, the client achieved 39% optimization, which resulted in a savings of 27 weeks –translating to 37.2% effort reduction.