

## Case Study: T-Systems Enterprise Services Strikes Out Independently in Test Automation Approach



### Overview

**Country:** Germany

**Industry:** ITC

### Customer Profile:

T-Systems Enterprise Services GmbH operates as a subsidiary of Deutsche Telekom AG and is the second biggest ITC provider in Europe. The company offers its services to clients in over 24 countries.

### Business Challenge:

The implementation and operation of a customer order system that controls numerous customer- and order-related business processes between T-Systems and a major international customer.

### INSONO Solution:

Quality assurance of a rule based web ordering system. The verification and system functionality was realized using automated tests.

### Benefits:

- shorter release cycles
- lower costs for regression testing
- higher quality of test
- increase the number of catalogue releases per year

### Key Project Statistics:

70% faster time to market  
50% less testers

### Business Challenge

T-Systems Enterprise Services GmbH operates as a subsidiary of Deutsche Telekom AG and is the biggest ITC provider in Europe. The company offers its services to clients in over 24 countries.

T-Systems created a web based ordering system to provide IT products (hardware, storage, etc.) and services (SAP, IT services, etc.) to its clients. Products can be selected in a catalogue with 12 sections and over 10.000 items.

The customers can order displayed products and also combination of products, combination of services and combination of products and services. Invalid combinations should not be accepted by the system. For example: when ordering a notebook there is only a range of hardware to go with it and each hardware product is compatible with certain systems.

This is the point where the challenge arises:

1. there are more than 60.000 rules to test, and more than 1,5 million possible combinations.
2. the time necessary for testing conditions the changing of the catalogue to maximum twice a year, which is not often enough for the dynamics on the IT market.

T-System clients are market leaders. This is why no mistakes were allowed and the why T-System needed of a long-term collaboration with a reliable, flexible team.

### INSONO Solution

Considering the situation, INSONO aimed to quickly build an efficient and high-quality test system that would considerably raise the scope and quality of the tests and reduced the level of staff involvement in manual test phases.

The requirements of the customer included:

- lower costs for quality assurance
- highly efficient and easy to maintain automated tests
- quick release cycles
- faster time-to-market

## How does it work?

### A test cycle can be explained in several phases

#### **Phase 1:**

Analysis of changes to application. Make changes (if necessary) to test scripts. Test of test scripts.

#### **Phase 2:**

Integration in test-session. Start automatic overnight test (regression test).

#### **Phase 3:**

Next day: analysis of test results.

#### **Phase 4:**

Depending on test results: trigger following actions

## Advantages of automated tests:

- quality improvement through repeatability, similarity and exclusion of incorrect input
- takes a great deal of pressure off the developers and specialists involved in testing
- secures test quality
- cuts test costs
- increase the productive share of software development

INSONO had to take a critical look at existing test methods and tools and subject them to a consistent efficiency check.

The quality and test management standards requirements were met through a combination of different test strategies.

The level of efficiency achieved is impressive and makes automated tests simple and easy to maintain.

Moreover the simple concepts allow inexperienced testers to immediately play a productive role in the quality assurance process.

## **The optimum tool**

The key to a successful implementation of the quality assurance concept was the selection of a suitable test tool.

Using automated tests allowed the scope of testing to be greatly extended while also enhancing quality. Flexible support for gradual development of the level of automation was provided at the same time. In addition, a larger number of product variants could be tested despite the shorter release cycles.

The function test tool was selected for automating the tests of the web-based interfaces.

The decisive features of the selected tool were:

- its intuitive capture & replay technology based on standard methods
- the element-based processing of test scenarios, which fully dispenses with the generation of test scripts
- the price and amount of support provided by the manufacturer.

Automated tests had a strong impact on fulfilling the requirements of the customer as they:

- check and automatically create documentation of the tests
- take a great deal of pressure off the developers and specialists involved in testing
- secure test quality, cut test costs and increase the productive share of software development since in complex systems a high level of test coverage means reliability and encourages changes.

Given the future release plans for the project, this is an indispensable contribution to ensuring a reliable investment.

To respond to the customer requirements INSONO Consulting deployed a consistent and structured procedure:

1. a well-founded analysis of the test process
2. drawing up of test concepts
3. creation of methodical test specification and test scenarios
4. collection and management of test data
5. definition of service level agreements for running the tests

Providing IT products to their corporate customers is now easier and faster for T-Systems. The solution allows them to be more competitive on the IT fast changing market.

## Architecture & Implementation

Implementing and operating customer order management software that controls numerous customer order-related business processes required distinct quality and test management standards. This was achieved through a combination of different test strategies.

Given the fact that the test concept covers the entire project, quality assurance took on a more specialized and technical focus in order to respond to the great complexity of the business processes and software architecture. Each project group administered automated tests with a different test focus. In this way INSONO Consulting was able to raise the quality of the tests and reduce significantly communication costs. The tests were then combined to form the central test suites.

## Results

The solution improved the quality of B2B ordering management system of T-Systems reducing the inquiry to order time and the order to cash time.

The solution fulfilled all customer requirements:

- significantly speeded up the modular construction of efficient test suites
- reduced to a minimum the amount of work needed to create and maintain the test scenarios
- eased the testing process - the simple concepts also allow inexperienced testers to immediately play a productive role in

**INSONO Consulting GmbH**  
offers an advanced set of flexible,  
cost-effective solutions.

For more information about  
INSONO services please visit:  
[www.insono.com](http://www.insono.com)