

Automated Testing of an Enterprise Resource Planning Solution

“Distinguished features of the development process were speed and quality that considerably advanced a high quality product.”

Vladimir Mikhaylov
Information System Test Director

Customer

The customer is a well-known solutions provider in the field of production process automation.

Company	<i>Software Development Company</i>
Country	<i>Russia</i>
Business Domain	<i>Web Solutions</i>
Services Used	<i>Automated Testing</i>
Cooperation Model	<i>QA Outsourcing for a Development Company</i>
Duration	<i>9 months</i>
Efforts	<i>27 man-months</i>

Project

The project targeted a system for automation of customer service production processes (sales, after sales, financial service, and self-service) and internal customer service technological processes. This system was generally used by cellular communication operators.

30 software developers had run the project on the customer side for 4 years. A1QA implemented the project jointly with the customer test department.

Challenge

The main purpose of the automation project was to develop a wide set of test cases for regression tests. Such purpose was set for the following reasons:

- The customer had a problem with a large number of defects and installation-specific issues after system updates.
- It was planned to use scripts for testing multiple product versions on different test platforms.

The project set some specific requirements listed below:

- Automation scripts had to be developed via remote http access to the system.
- The specifications for test case generation were provided by the customer on the basis of the internal functional test manuals.
- There was a need to use libraries developed by the customer and ensure compatibility with an automation system on the customer side.
- The automation product was required to support different locales and localization settings.

Solution

The automation project was divided into two phases:

Initial (pilot) phase

The main purpose of the pilot phase was to put the application to the test and arrange communication with the customer. Within the initial phase the following activities were completed:

- The customer had a problem with a large number of defects and installation-specific issues after system updates.
- Several demo test cases were developed.
- Some common features (application framework) for handling control elements were developed.
- All remote access issues were located and fixed.
- Communication rules were specified.

Active development phase

The major purpose of the active development phase was development and running of test cases.

Communication solutions

- Taking into account that the test case specifications were adapted to the automation project, preliminary business analysis of scripts was arranged as a separate process to clarify all specification-related and test data issues.
- A remote access to the test case storage system was provided to the customer. All changes, additional requirements and defects were located in a centralized storage and managed by all project participants.
- A system was arranged for night test running on different platforms on the customer side. This approach allowed tracking all defects in scripts which depended on different test platforms and workstations.

Technologies used

Browsers: Internet Explorer 6.0

Automation tool: TestComplete 4.22

Script database and defect tracking system: ClearQuest

Version control system: ClearCase

Script language: C# Script

Success

The major customer benefits are provided below:

- The customer was provided with a wide range of extendable test cases. The total number of test cases in the resulting set equaled 350 covering 20% functionality. The solution supported cost-efficient introduction of new test case scenarios.
- Functional testers on the customer side could independently generate and launch any test scenarios (defining their scope and logical structure) using the test execution tool developed within the project.
- The final code was compatible with the internal systems of the customer test department, which ensured availability of reusable scripts and an automated product framework.
- An extensive automation experience helped A1QA develop non-standard solutions for some intricate tasks. For example, a complex solution was created for processing of all tables provided by the application.
- An important feature of the scripts was their independence of a test platform. The customer needed to prepare test data for a new database only once. A ready-to-use scenario was available after any system update.
- The test scripts were resistant to any unexpected errors.
- The well arranged communication process limited the customer participation in the project to specification development and input data support.