

SOFTWARE TESTING

Faster Software Testing for Global Direct Sales Company

Client

The client is the leading **direct sales company in Europe and the world's foremost direct seller of premium-quality household appliances**, specializing in kitchen and cleaning technology, powered by a direct sales model and supported by scalable digital infrastructure.

Business Need

The client, fraught with **complex SAP landscapes and frequent releases**, sought a sustainable automation model to combat inefficient regression cycles, manual testing bottlenecks, and high-test script maintenance overhead, as business-critical SAP modules like Order-to-Cash and Procure-to-Pay **had high defect leakage** and demanded expert-led transformation. It needed the following:

- A robust, scalable AI-powered test automation framework.
- Data-driven testing across multiple SAP environments (QA, UAT, Pre-Prod).
- A sustainable automation approach that adapts to changes with minimal rework and no dependence on technical users for script maintenance.

Business Challenges

- The client operates in a high-velocity release cycle, pushing functional enhancements and updates at scale, where the complexity of SAP modules and UI volatility turned manual regression into a significant bottleneck.
- SAP landscapes (SAP GUI, SAP Fiori) often face dynamic UI changes, performance-related issues during peak transactional loads, and require deep SME involvement for process validation.
- Issues with test data consistency, versioning, and missing test coverage for high-priority scenarios (e.g., Order-to-Cash, Procure-to-Pay) resulted in defect leakage post-deployment.

Solution

To address the challenges in SAP testing and automation, the following solution was implemented:

Business Process Prioritization & Modularization:

- Conducted Business Process Mining using SAP logs to identify frequently used transactions (FUTs).
- Prioritized test automation for core financial processes (Order-to-Cash, Invoice-to-Pay, Returns Management) and integrated with qTest for traceability.

SAP Test Automation via TOSCA:

- Used TOSCA SAP Engine 3.0 to automate both SAP GUI and Fiori applications.
- Created Reusable Business Components (RBCs) for each SAP transaction to improve modularity and reuse.

AI-powered Automation:

- TOSCA’s Self-healing mechanism using AI/ XScan handled locator instability caused by SAP layout changes or language packs.
- Enabled Machine Learning-based object recognition for SAP Fiori, especially dynamic tables and control types.

Test Data Management:

- Leveraged TOSCA Test Data Service (TDS) to provision and manage versioned datasets across SAP test clients.
- Created synthetic test data with constraints (e.g., customer types, payment terms) to improve coverage.

TBox Automation for Backend Operations:

- Used TBox modules for handling file uploads, ALV grid validations, and SAP transport-based test setup.

Parallel & Distributed Execution:

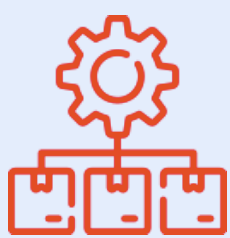
- Implemented TOSCA Distributed Execution (DEX) with Jenkins + Dockerized Agents to run tests in parallel across different SAP modules.
- Reduced full regression from 3 days to 7 hours.

Defect Traceability and Root Cause Mapping:

- Connected JIRA–qTest–TOSCA to trace requirements → test cases → execution → defect linkage.

Innominds’ differentiated Quality Engineering (QE) Solution

Delivered through domain-aware functional SMEs and effective model-based test automation, our approach has brought significant value to the organization:



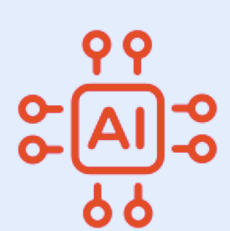
Mapped business flows using process mining to identify automation hotspots (O2C, P2P, Reporting):

Ensured comprehensive test coverage for revenue-impacting business processes.



Built modular, reusable test components with SME collaboration:

Achieved high reuse across approximately 1,500+ test cases.



Leveraged TOSCA’s AI capabilities – Self-healing, ML-based locators, Vision AI:

Enabled the creation of low-maintenance, high-resilience test suites.



Managed test data with TOSCA Test Data Service (TDS):

Facilitated parallel test execution and improved test consistency.

Value Delivered

By implementing a robust, AI-powered test automation framework and optimizing SAP testing processes, significant improvements were realized across various metrics:

Reduced Cycle Time

Achieved a reduction from a 3-day regression cycle to a 7-hour parallel execution by leveraging TOSCA Distributed Execution (DEX) and dynamic data provisioning, resulting in a 40% decrease in cycle time.

Reduced Test Effort

Eliminated manual test steps through auto-provisioning, modular reusable components, and one-click execution in Jenkins, leading to a 50% reduction in test effort.

Increased Execution Efficiency

Utilized dynamic waits, self-healing locators, and stable data, achieving a 98% pass rate without retries, enhancing execution efficiency by 40%.

Reduced Test Script Maintenance

Implemented version-controlled modules, smart locators, and business-oriented test case modeling, reducing maintenance effort by one-third (approximately 30%).

Improved Release Confidence

User Acceptance Testing (UAT) identified 60% fewer issues post-automation, significantly enhancing confidence in release quality.

Enabled Business-Driven Automation

Subject Matter Experts (SMEs) could author tests using TOSCA Test Case Design Section without coding, fostering greater business involvement in testing.

Tools & Technologies Used

- **TOSCA SAP Engine 3.0**
Automated both SAP GUI and Fiori applications, enabling modular and reusable test components.
- **TOSCA Test Data Service (TDS)**
Provisioned and managed versioned datasets across SAP test clients, facilitating parallel test execution.
- **TOSCA Distributed Execution (DEX)**
Enabled parallel execution of tests across different SAP modules, reducing regression cycle time.
- **Jenkins**
Facilitated one-click test execution through continuous integration, streamlining the testing process.
- **Docker**
Utilized Dockerized Jenkins agents to run tests in parallel across various environments.
- **qTest**
Provided test management capabilities, including traceability of requirements, test cases, execution, and defect linkage.
- **Jira**
Integrated with qTest for real-time synchronization of test cases and defect tracking.
- **AI/XScan**
Leveraged TOSCA's self-healing mechanism to handle locator instability caused by SAP layout changes or language packs.
- **Machine Learning-based Object Recognition**
Enabled recognition of dynamic tables and control types in SAP Fiori applications.
- **TBox Modules**
Automated backend operations such as file uploads, ALV grid validations, and SAP transport-based test setup.

Enhance your Customer and Quality excellence with us

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