USE CASE

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OPTIMIZED TIME-TO-MARKET WITH AI BASED AUTOMATED FUNCTIONAL TESTING

Having a high customer-interaction rate and exponentially increasing competition, Retail industry must ensure that its systems are tested adequately in a short span of time to assure **no scope for errors**, and an **optimal time-to-market**.

Test automation has an edge over manual testing because it provides **enhanced test coverage**, **saves testing time** and **cost**, gives objective testing evidence in the form of **customized reports**, and efficiently tracks defects for **faster troubleshooting**.

Our Quality Management Team has been working with a major Portuguese Retailer, **introducing AI to Automated Functional Testing**, resulting in a higher ROI.

Sector:
Retail

Business Unit:
Quality Management

Solution:
Automated Functional Testing based on AI

#1
Provider of QM Services in Portugal

0.5 FTE capacity released in each sprint

400+
Automated test cases within 1 IA mechanism

600+
E2E flows executed daily

THE CHALLENGE

In a competitive industry such as Retail, guaranteeing quality of service and speed of transaction is significantly important to ensure high-level customer satisfaction.

Dealing with a **constrained time-to-market**, it's usual for retailers to try to reduce applications implementation time by reducing the execution time of regression batteries.

Working with this leading Retailer, we faced the challenge to **reduce the execution time of the regression battery** (that took roughly 5 days to execute) in both the integration area **(Kafka)** and in the store area **(POS)**.

GOALS

In alignment with the industry's core needs, our team identified as key goals:

- **Time-to-Market Optimization**: saving up approximately 70% of cycle time during regression testing.
- Through **artificial intelligence mechanisms**, no effort is required to maintain the automatic regression battery. **Automatic tests are maintained** hand-by-hand with the evolution of the application.
- **Validation of core business processes** (stock management, promotional actions).
- **Operational efficiency improvement** and **reduced human error**.

SOLUTION

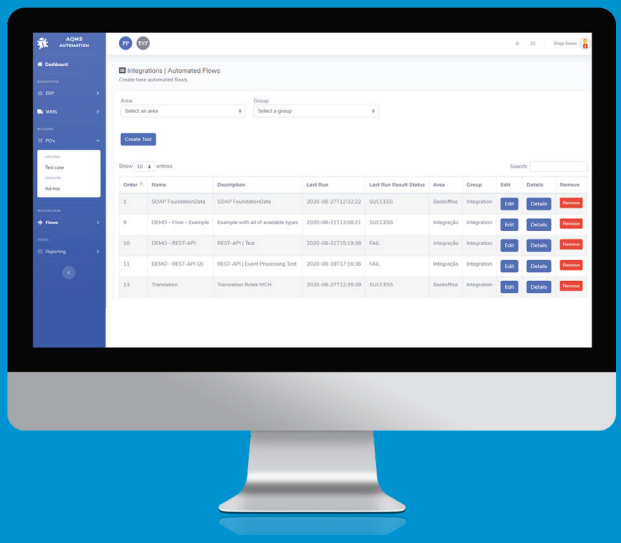
To guarantee the reduction of the regression tests duration period, we carried out the regression battery automation. **AI was implemented in the process**, freeing the maintenance of automatism from further effort.

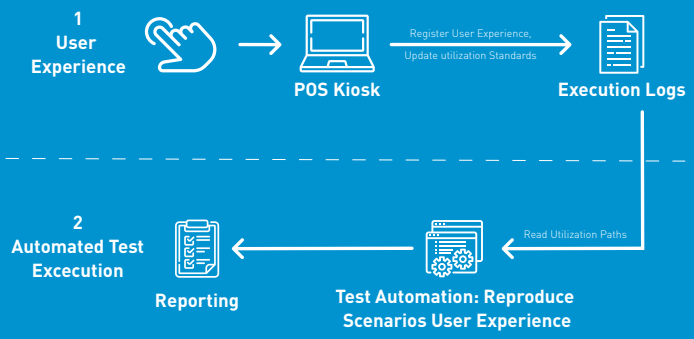
In the **integration area**, where there are multiple destinations and sources that are integrated by KAFKA, we simulated the injection of events **via API**, to proceed with the validations. The operator then reads the settings that exist on KAFKA, on a daily basis, and rewrites the functional validations according to the changes made – **guaranteeing that there is no maintenance effort whenever there is a change to the solution**.

In the **store area (POS)**, it is necessary to ensure that all features are operational in each release, so it's vital to run an exhaustive regression battery.

With our approach:

- An **automatism reproduces user behavior**, through user experience.
- The **daily execution of the regression battery**, with validation of +60 flows, frees up 0.5 FTE capacity in each sprint, available to perform other tasks.
- There is a **rapid reproduction of errors** (identified in production): with daily runs it is possible to identify which installation generated the error.
- The maintenance of the test case is carried out when the new functionality is implemented: **when performing manual tests, you are updating the automated test scenario** (feeding the regression battery).





THE RESULTS

Automation based on Artificial Intelligence brings many advantages for the Retail industry, such as:

- Faster **Time-to-Market**.
- Enhanced **Test Coverage**.
- Increased **confidence** (due to a higher number of tests executions)
- **Significantly** reduced **maintenance effort** and costs.
- Higher **ROI**.
- **Bridged Silos** (Integrated systems by linking gaps between digital commerce and POS Testing).

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Noesis is an international tech consulting company offering services and solutions to support clients in digital transformation and the development of their businesses. In order to obtain sustained value that is transversal to all sectors, Noesis is focused on infrastructures, software, quality and people.