Get Creative with Test Automation and Point of Sale

eggplant
Test Automation Software

KEYSIGHT TECHNOLOGIES

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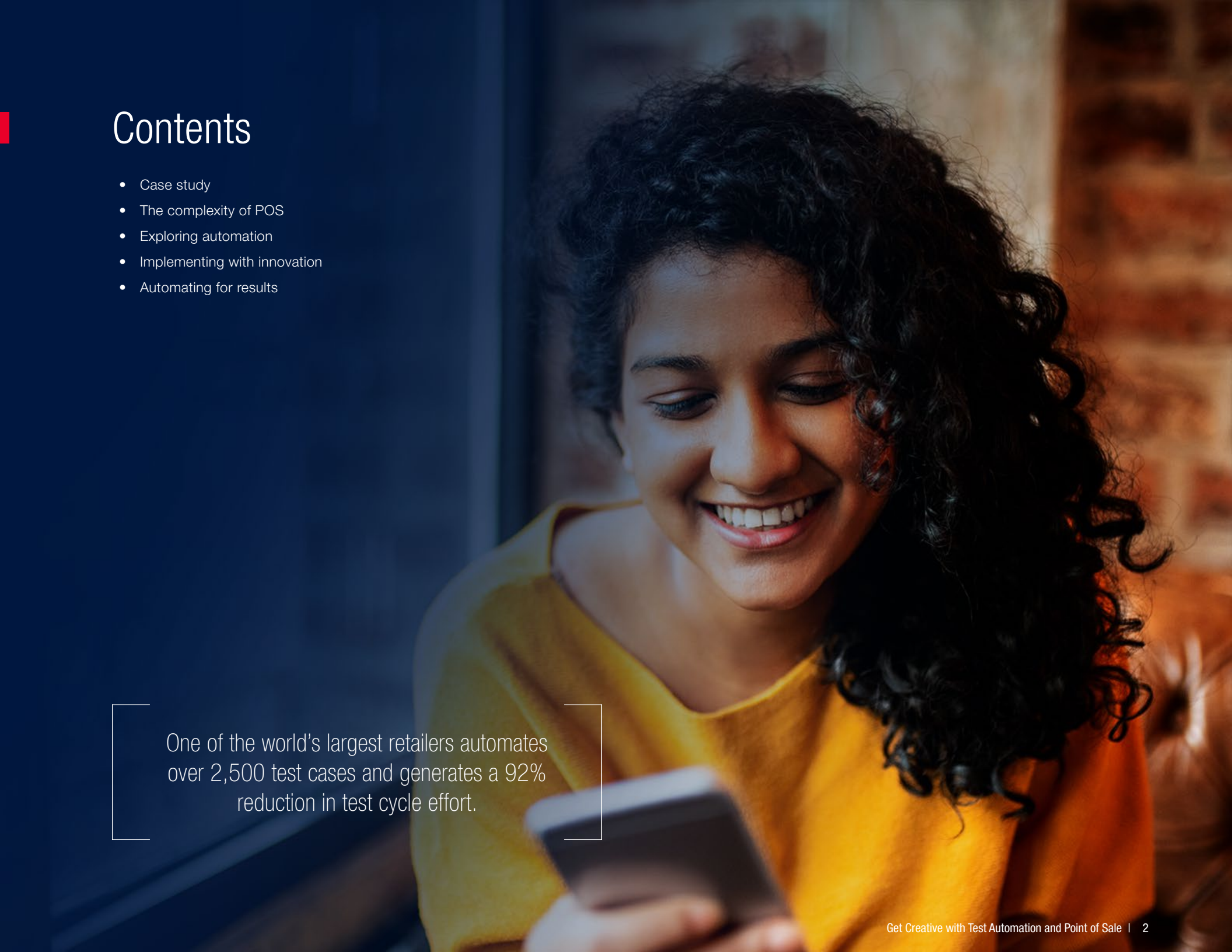

One of the world's largest retailers automates over 2,500 test cases and generates a 92% reduction in test cycle effort.

Case study:

Innovative approach generates a 92% reduction in test cycle effort

Our client is one of the world's largest retailers, with millions of customers visiting thousands of its stores in countries across the globe each year.

Retail Point of Sale (POS) systems are a critical technology component for any modern retailer and our client is no exception. Every U.S. store is equipped with some form of POS system, ranging from traditional systems, where the customer and cashier use different screens, to self-service systems, where the customer scans and weighs items themselves and uses a touch screen to complete their purchase.

Increasingly, there is also a mobile component to POS systems – whether offering customers mobile payment options like Apple Pay and Google Pay, or enabling staff to use mobile devices to help speed up check out – an approach that is growing in popularity at its bulk retail locations.

The complexity of POS

For any large retailer, any problem with its POS systems is potentially disastrous. Like any other software-driven technology, POS systems have to be rigorously tested to ensure they remain stable when changes and updates are made.

But POS systems are expensive and retailers do not often replace them, choosing instead to build new features and technologies on top of well-established, trusted platforms, such as the IBM 4690 in our client's case. As a result, its POS systems are built on a very thick "technology stack", comprising a multitude of legacy technologies, and are also worked on by several generations of development and testing staff, meaning that no one has complete knowledge of the system.

These complexities meant that the retailer historically conducted all of its POS testing manually, not believing that there was a solution that could automate such a complex scenario.

As time went by, our client noticed it was taking more time to manually conduct regression testing of its POS applications ahead of releasing a new build. Its POS team releases updates using an agile methodology, which was generating builds too quickly for the manual test team to conduct regression testing. Time for manual testing eventually grew to around 125 person days per test cycle, predominantly due to the growing number of test cases to cover increasingly more complex customer journeys.

In addition to delaying the rollout of updates, this also resulted in increasing use of resources, including significant outsourced IT consulting, leading to growth in the overall cost of testing. Our client was particularly keen to reduce its reliance on consulting firms and to take more control over its POS testing processes.

Exploring automation

The POS team realised that automation might be the solution to their increasing testing demands.

Other divisions within the company were using UFT from HP to conduct test automation. The challenge with using an object-based tool like UFT is that it could not effectively penetrate the complex layers of the retailer's POS system, and the same was true of any other automation tool they tried.

After spending extensive time and effort looking for a solution, our client's executives were beginning to believe that they were stuck with their automation problem. Until they discovered Eggplant.

Eggplant helps companies test their applications better, faster, and with less effort by automating the execution of functional testing. Eggplant Digital Automation Intelligence uses patented techniques to intelligently understand and control the system being tested, the key benefit of this approach is that we can intelligently understand and control devices in the same way a user does.

> Eggplant helps companies test their applications better, faster, and with less effort by automating the execution of complex end to end testing.

Implementing with innovation

While Eggplant's ability to intelligently understand the user interface and user experience to testing presented a potential solution to the automation challenge, there was still a lot of work to be done.

The complexity of the POS stack meant that it was still necessary to understand which parts controlled certain functions in the terminal before Eggplant could automate.

While Eggplant's software was addressing the challenges of automating testing, the company was simultaneously working with our client's manual testing consultants, to develop the core test scripts that would enable automated regression testing.

Even though different retail locations use different POS configurations, a lot of time was saved by re-using the same, shared, test assets across different POS setups Eggplant's intuitive SenseTalk language allows even non-technical users to become productive with Eggplant within a few hours, as it provides them with the ability to write test scripts without having any programming knowledge.

> Eggplant's intuitive SenseTalk language allows even non-technical users to become productive.

Card reader testing, terminator-style

One challenge of automating POS testing is how to test some of the more manual customer processes that do not involve screens, such as swiping credit or debit cards, entering PIN numbers or making an on-screen signature. Once again, innovation was the order of the day, as a solution was found far outside the box: a robotic arm from Rethink Robotics.

Now, during any testing that requires a customer to swipe a card, Eggplant controls the robotic arm, which selects a card from a selection, swipes it and completes the transaction, whether by entering a PIN on a keypad or even signing on a signature reader.

Following the successful automation of the core regression tests, the scope of automation was quickly expanded to include additional areas, including self-service and mobile payment elements.

> Eggplant's intuitive SenseTalk language allows even non-technical users to become productive.

Automating for results

In total, the retailer's POS team works with a set of around **5,000 regression test cases**, which they eventually hoped to automate approximately 80% of. Since implementing Eggplant, our client has **automated over 2,500 test cases** and counting.

Eggplant has worked well within the company's agile development environment, allowing the test team to cope well with increasingly frequent development sprints, and ensuring release delays are avoided.

While previously requiring 125 person days for each test cycle using purely manual testing, our client has been able to reduce this to just 10 man days per cycle using Eggplant. An effort saving of more than 90%.

Through these savings, the company has seen improvements in quality, due to its ability to run tests more frequently, as well as allowing resources to be reallocated to more exploratory testing on data that emerges from the automated testing.

Looking to the Future

Following the success of the Eggplant intelligent test automation roll-out of POS systems, our customer is exploring other areas of their business for both test and process automation.

Learn more at: www.keysight.com/find/eggplant

For more information on Keysight Eggplant products and solutions, please contact us.
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