CASE STUDY

BUSINESS INFORMATION SOLUTIONS PROVIDER UPS SERVICE QUALITY WITH AGILE TESTING AUTOMATION

Abstract

The client is a leading global provider of business information solutions with over 10,000 + employees. They wanted to implement latest testing solutions, shift from waterfall to Agile methodologies, and improve net promoter scores (NPS). This meant reduction of cycle times by extensive use of automation and engaging Agile methodology practitioners for smooth transitions. It was achieved by implementing Data Driven framework and by integrating with open source tools like Selenium, Jenkins and Cucumber etc.

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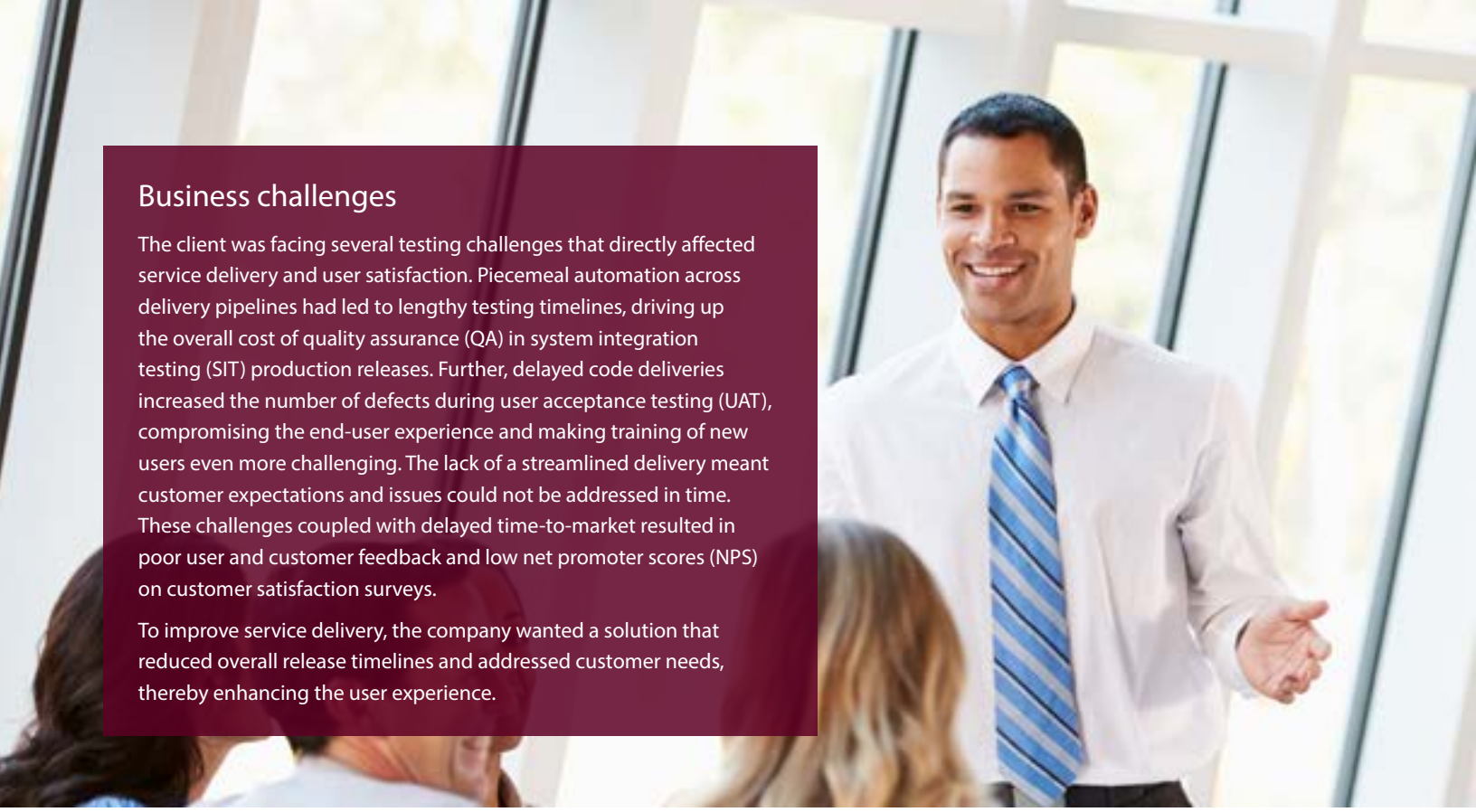


Business challenges

The client was facing several testing challenges that directly affected service delivery and user satisfaction. Piecemeal automation across delivery pipelines had led to lengthy testing timelines, driving up the overall cost of quality assurance (QA) in system integration testing (SIT) production releases. Further, delayed code deliveries increased the number of defects during user acceptance testing (UAT), compromising the end-user experience and making training of new users even more challenging. The lack of a streamlined delivery meant customer expectations and issues could not be addressed in time. These challenges coupled with delayed time-to-market resulted in poor user and customer feedback and low net promoter scores (NPS) on customer satisfaction surveys.

To improve service delivery, the company wanted a solution that reduced overall release timelines and addressed customer needs, thereby enhancing the user experience.

Infosys solution

The client chose to partner with Infosys for our extensive experience in delivering holistic testing solutions to companies across the globe.

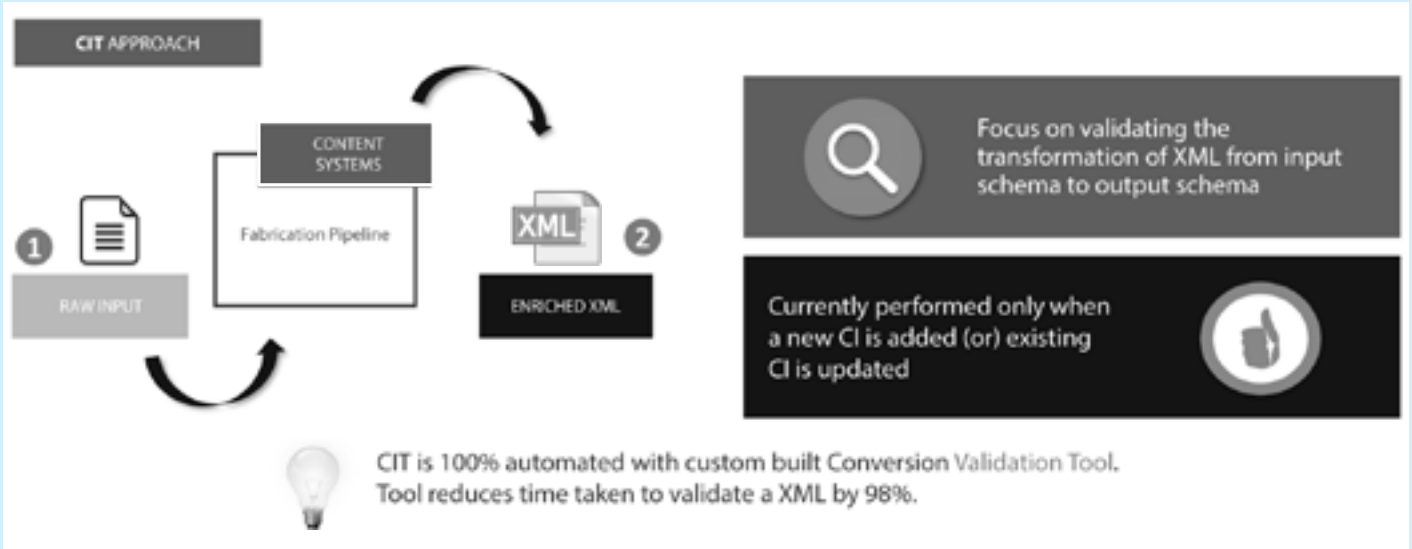
The Infosys solution comprised a comprehensive testing services suite to handle all of the client's testing needs.

These services included mobile, functional, automation, performance, and service oriented architecture (SOA) testing. We also provided package testing for a variety of products such as PeopleSoft, Informatica, ADP Taxware, Oracle products, etc., as well as legacy and desktop applications.

To begin with, validating every XML XPath across numerous documents based on content type was complex, time-consuming and effort-intensive. Besides being prone to human error, this process also increased the amount of re-work even during mapping and requirement phases. To address this, Infosys deployed an automated conversion validation tool, thereby reducing effort spent on validation.

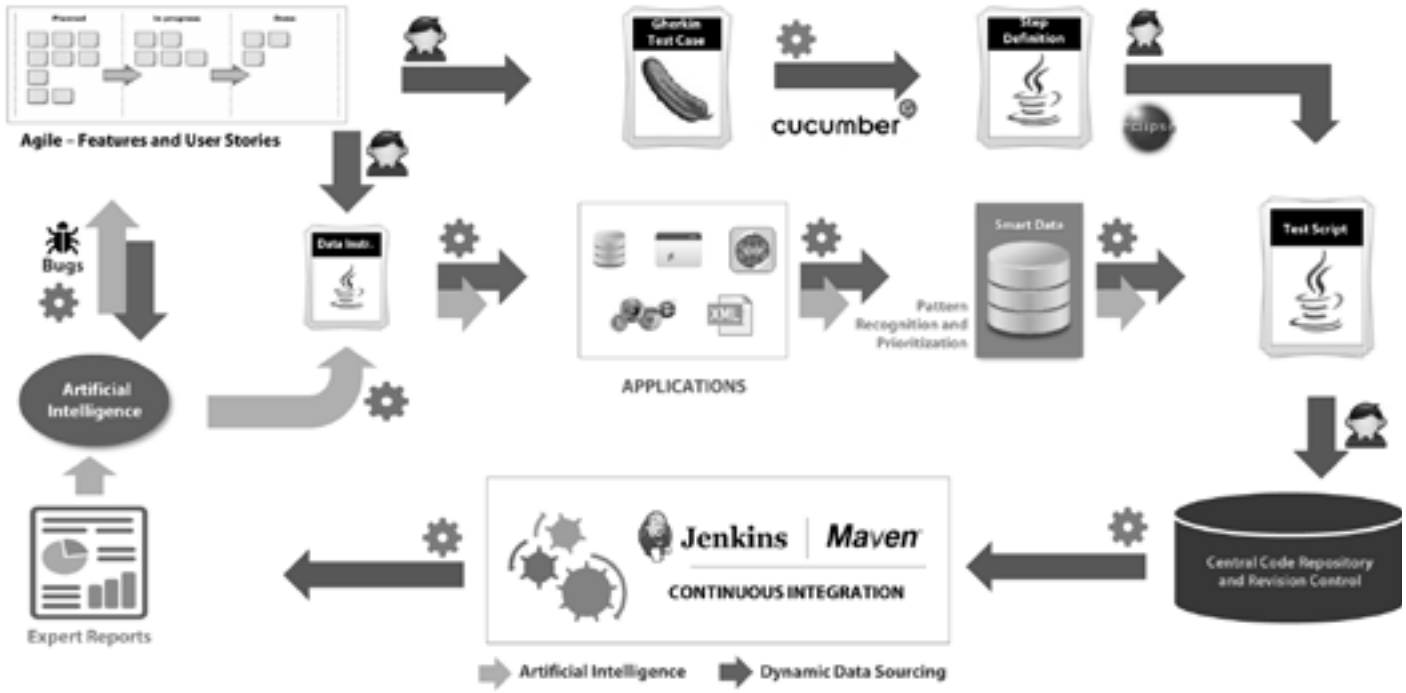
Conversion Validation

Content Integration Testing (CIT) is validation of raw XML without using app.



Next, we implemented a data-driven framework for agile and regression test automation using open source tools such as Selenium, Jenkins and Cucumber. Here, several in-house and custom tools and scripts were combined to develop an adaptive virtual data intelligence system that was able to learn from previous failures. Such learning was fed as input to subsequent runs, thereby significantly reducing manual execution effort and time and improving test effectiveness.

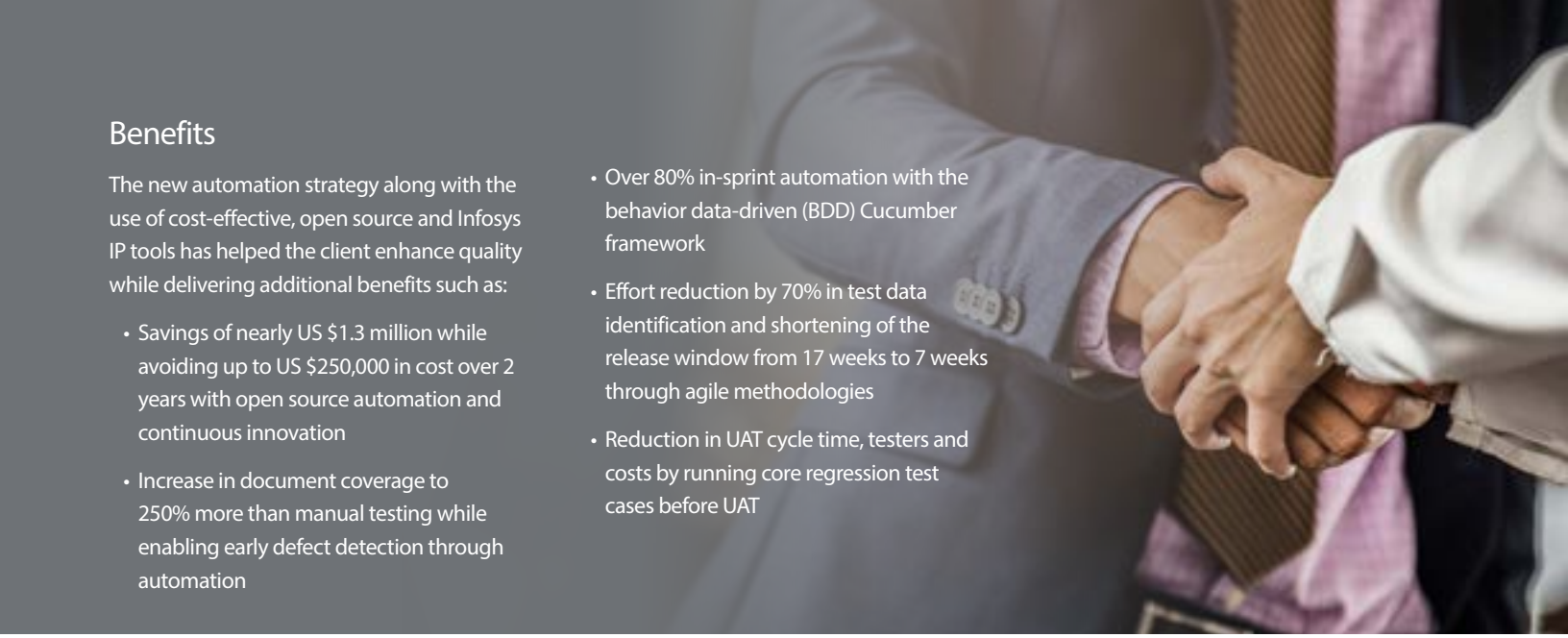
Agile Automation Framework



Solution highlights

The key aspects of the Infosys solution are:

- Leveraged agile methodologies to shift from the traditional waterfall model, reducing the release window from 17 weeks to 7 weeks
- Delivered continuous enhancements and reviews of regression test suites based on business reviews and by including high-priority UAT test scripts
- Streamlined test data collection using 'dynamic data sourcing' – an automated test data driver that fetches the required test data based on user instructions at run-time
- Created 'smart data' using pattern recognition and prioritization to eliminate redundant test data and improve test effectiveness
- Implemented multi-layer expert test reports with Excel sheets, e-mail summaries and web dashboards to visualize the system and track trends
- Deployed automated bug tracking to automatically isolate and log new issues from known causes
- Leveraged several best-in-class third-party products for quality assurance and unified testing such as HPE LoadRunner, Quick Test Professional (QTP), Tricentis TOSCA, SoapUI, etc.
- Infosys proposed an increase in offshoring coupled with on-site work, thereby helping the client reduce cost while ensuring that the off-shore team was available during sprint meetings.



Benefits

The new automation strategy along with the use of cost-effective, open source and Infosys IP tools has helped the client enhance quality while delivering additional benefits such as:

- Savings of nearly US $1.3 million while avoiding up to US $250,000 in cost over 2 years with open source automation and continuous innovation
- Increase in document coverage to 250% more than manual testing while enabling early defect detection through automation
- Over 80% in-sprint automation with the behavior data-driven (BDD) Cucumber framework
- Effort reduction by 70% in test data identification and shortening of the release window from 17 weeks to 7 weeks through agile methodologies
- Reduction in UAT cycle time, testers and costs by running core regression test cases before UAT

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