Optimized Testing Solution for Ensuring Data Accuracy Across Multiple Products and Vehicles

ORGANIZATION

Our esteemed client is a global leader in the technology, service, and automotive parts industry, spanning five distinct business segments: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy/Building Technology. Notably, our client pioneered the development of the first fuel injection system incorporating a high-pressure electric fuel pump in 1967. This groundbreaking innovation was followed by the acquisition of the first brake system design patent, solidifying our client's position as a trailblazer in braking technology.

CHALLENGE

Our client sought to provide a comprehensive catalog of automotive components categorized into ADAS, brakes, filters, starters and alternators, batteries, diesel components, gasoline fuel systems, steering systems, body electronics, engine management, spark plugs, and wiper blades. Each component would be meticulously detailed with its specifications, service centers, thumbnail images, and full-resolution images. Customers were empowered to input their vehicle information to tailor their search results. Furthermore, users possessed the capability to compare the specifications of various components.

One of the primary challenges was managing over 30,000 automotive components and integrating multiple third-party applications and APIs within a single application. Additionally, the management of multiple thumbnails, 360-degree images, and YouTube videos presented a significant technical hurdle. Page layout and configuration for each automotive component were time-consuming tasks that required meticulous attention to detail for every client update. The application underwent rigorous testing involving various vehicles spanning from 1986 to the present.

Key challenges included:
- Testing the application with a diverse range of vehicles from different eras
- The absence of comprehensive requirement documents to design test cases
- The multilingual nature of the application necessitating validation in English, Spanish, and French
- Localization considerations for the application, which was designed for sites in the United States, Mexico, and Canada. The images used in the application varied across countries, necessitating validation and adaptation.
- As an application developed using Liferay, the QA team possessed a deep understanding of the Liferay ecosystem, including the intricate setup and configuration of pages and widgets. During the testing phase, the QA team was required to modify settings to validate the functionality of the application.

SOLUTION

The Project adhered to the Agile methodology, fostering collaboration with the customer and development vendor. XTIVIA effectively addressed the aforementioned challenges. The QA team swiftly adapted to Liferay commerce technology. The QA team maintained continuous communication with the Development/Product team, comprehending the requirements. As part of this engagement, XTIVIA prioritized the following areas:

- **Seamless Collaboration:** During test case preparation, the QA team collaborated closely with developers and business stakeholders to fully comprehend the requirements.
- **Infrastructure Setup:** The team gained access to the site to conduct courses on Liferay Commerce, enhancing their knowledge of page setup and configurations.
- **Localization:** The QA team collaborated with the Development team to establish Liferay Commerce pages and configurations for each widget. The QA team conducted localization testing, encompassing the following localizations:
  - Testing the US site in English and Spanish languages.
  - Testing the MX site in Spanish.
  - Testing the CA site in English and French languages.
- **Browser and Device Compatibility:** The team conducted extensive testing to ensure the application's compatibility with various browsers and devices.
- The team developed an extensive test suite to guarantee data accuracy.
- Comprehensive testing artifacts were created to ensure that no functionality remained undiscovered.
- The regression test suite was identified for execution as new features were introduced.
- Provided functional guidance to other teams.
- Production validation

BUSINESS RESULT

Our team developed comprehensive test suites encompassing both functional and non-functional testing for our client's project. XTIVIA QA also engaged in ADA Compliance Testing (Accessibility Testing) utilizing Axe DevTools to pinpoint critical and high-severity bugs. The meticulous efforts of the XTIVIA testing team ensured the reliability, functionality, performance, and browser compatibility of the application. This contributed to its widespread acceptance among various end customers of our client.

KEYWORDS

Testing, QA, API, REST, Liferay, Selenium

SOFTWARE

Liferay Commerce, Selenium, Rest API

ABOUT XTIVIA

At XTIVIA, we've been providing IT solutions and consulting services for over 30 years with a wide range of services, including technology assessments, IT service and asset management, software development, data analytics, cloud migration, DevSecOps, ERP, and enterprise content management. Dedicated to each discipline, ensuring that our clients receive the best possible service. Through strategic acquisitions, we've acquired talented people who are experts in their industries, passionate about what they do, and committed to providing exceptional service to our clients. Whether you need to improve your IT infrastructure or implement new software solutions, XTIVIA is here to help you achieve your business goals. XTIVIA has offices in Colorado, New York, New Jersey, Texas, Virginia, and India. www.xtivia.com