Comprehensive Testing Solution for Multi-Tenant Application Ensuring Compatibility Across Various Platforms and Browsers

ORGANIZATION

Our client, a leading dairy supply-chain company founded in 2018, manages over 30 billion pounds of raw milk annually, accounting for about 15% of the US dairy market. Their customers include major industry players such as the United Dairymen of Arizona and California Dairies Inc.

The client's cloud-based software provides critical intelligence across the dairy supply chain, tracking milk shipments from producers to processing plants and delivering real-time information to producers, processors, transporters, labs, and dairy cooperatives. This application reduces administrative time by up to 85%, translating to savings of approximately $600,000 on average for dairy boards.

OBJECTIVE

XTIVIA was engaged to ensure the high quality and compatibility of the client's multi-tenant application across various platforms and browsers, focusing on both web and mobile environments.

CHALLENGE

The dairy supply chain software industry is complex and challenging, requiring a deep understanding of all stages, from procurement to delivery. Our client needed to restructure their legacy application and migrate to a new version that maintained high quality and ease of use. The new software had to integrate seamlessly with a mobile app for drivers used for pickups and drop-offs at farms and processing plants.

The client's needs included:

- Migration to a New Version: The client was restructuring their legacy dairy supply chain application and migrating to a new version. This required preserving all functionalities and ensuring the new version was high-quality and user-friendly.
- Mobile Integration: The new software needed to integrate seamlessly with a mobile app used by drivers for pickups and drop-offs at farms and processing plants. This required comprehensive testing across multiple mobile platforms (Android and iOS).
- Lack of Documentation: One significant challenge was the absence of documented end-to-end workflows or system/functional requirement documents. This meant that XTIVIA had to rely heavily on knowledge transfer sessions and iterative feedback.
- Browser Compatibility: It was crucial to ensure compatibility with multiple browser versions, specifically Microsoft Edge and Google Chrome. The application also needed to function correctly on mobile browsers and emulators.
- Regional Variability: The application was used across seven different regions, each with unique business terminologies and requirements. This necessitated extensive localization testing.
- User Interface Consistency: Maintaining a consistent and intuitive user interface across various devices and screen resolutions was essential to ensure a positive user experience.

SOLUTION

XTIVIA's testing team quickly engaged and took a structured approach to address these challenges:

1. Knowledge Transfer and Documentation:
    - Conducted comprehensive knowledge transfer sessions with the client to understand the existing system and new requirements.
    - Created detailed test scenarios and cases in TestRail for seven regions, each with unique business terminologies.

2. Functional, Integration, and Regression Testing:
    - Developed and executed test cases for functional, integration, and regression testing using TestRail's Test Run functionality.
    - Ensured all core functionalities were tested thoroughly to identify and fix any issues early in the development cycle.

3. Cross-Browser and Cross-Device Testing:
    - Performed extensive cross-browser testing on Microsoft Edge and Google Chrome to ensure compatibility.
    - Conducted mobile compatibility testing using emulators for iPhone 12 Pro and Android 12 & 13 across multiple resolutions.

4. Automation Testing:
    - Developed an automation test suite using the Playwright tool for the CDI region based on manual test cases. This helped in speeding up the testing process and ensuring repeatability.
    - Regularly updated and maintained the automation suite to cover new features and functionalities.

5. Localization Testing:
    - Prepared and executed test scenarios and cases for all modules across the seven regions, ensuring the application met the unique requirements and terminologies of each area.
    - Verified that regional settings, language preferences, and specific terminologies were correctly implemented and displayed.

6. End-to-End Integration Testing:
    - Conducted comprehensive end-to-end integration testing for both web and mobile applications to ensure seamless functionality across the entire system.
    - Simulated real-world scenarios to validate the interaction between different modules and services within the application.

7. Staging Validation:
    - Performed validation on staging applications post-change application to ensure that updates did not introduce new issues.
    - Conducted regression testing on the staging environment to confirm that existing functionalities were not adversely affected by new changes.

8. Collaboration and Reporting:
    - Maintained seamless collaboration with different parties involved in the project, including developers and business stakeholders.
    - Provided regular progress reports and functional guidance to the automation testing team to ensure alignment and transparency.

Tools and Technologies Used:

- **Test Management:** TestRail
- **Automation Framework:** Playwright
- **Project Management:** JIRA
- **Documentation:** Confluence, Microsoft Word, Excel

BUSINESS RESULT

XTIVIA's diligent and comprehensive testing efforts ensured that the client's application was reliable, functional, and compatible across multiple platforms and devices. The thorough testing processes and seamless collaboration with the client led to several key benefits:

- Enhanced User Experience: The application's user interface remained consistent and intuitive across various browsers and devices, ensuring a smooth user experience.
- Increased Reliability: By identifying and addressing potential issues before release, XTIVIA's testing team significantly improved the application's reliability and performance.
- Streamlined Integration: Successful integration of the web and mobile applications ensured that all functionalities worked seamlessly, maintaining business continuity and operational efficiency.
- Improved Stakeholder Confidence: The rigorous testing and validation processes instilled confidence in the client and their stakeholders regarding the new application's quality and readiness for deployment.
- Support for Regional Variability: Localization and compatibility testing across seven regions ensured that the application met the unique requirements and terminologies of different business areas.
- Timely Delivery: Despite the complexity and scope of the project, XTIVIA's structured approach enabled the timely completion of testing phases, aligning with the client's development schedule.

ABOUT XTIVIA

At XTIVIA, we've provided IT solutions and consulting services for over 30 years. We offer 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. Our team of experts is dedicated to each discipline, ensuring that our clients receive the best possible service. We've partnered with industry leaders to bring our clients the latest solutions. 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. Contact us today to learn more about our services.XTIVIA has offices in Colorado, NewYork, New Jersey, Texas, Virginia, and India. www.xtivia.com