

Transforming a premier retailer's e-commerce architecture with composable commerce

Industry

Retail

Business Presence

United States

HQ

United States

Client overview

Our client is a prominent department store chain with 290+ stores across southern US states, bringing the best for its customers in fashion, home, lifestyle, and more. For over 13 decades, the company has proudly put customer experience and community development at the forefront of its operations and transformation. With over 150+ new brands and several refreshed stores, the company has now grown into a high-volume omnichannel destination offering apparel, cosmetics, and home furnishings to millions of customers.

Business Challenges

To remain competitive in a digital-first retail landscape, the client initiated a multi-phase infrastructure modernization. The long-term strategy required migrating core e-commerce capabilities from Salesforce Commerce Cloud (SFCC) to a decoupled, headless Commercetools architecture. Concurrently, the front-end user interface needed a complete overhaul, shifting from Vue.js to a Vercel Next.js framework to drastically improve site speed, render performance & user experience.

The primary business challenge was executing this complex architectural shift at scale without disrupting the live production environment, which serves over one million active users. The client required a highly structured, accelerated quality engineering framework to:

- ▶ Validate the performance and functional integrity of migrated features.
- ▶ Establish a robust, scalable test automation framework capable of bridging legacy and modern tech stacks.
- ▶ Maintain a compressed release timeline while optimizing operational expenditure.

Our Strategy

Our experts conducted a comprehensive architectural dependency mapping to isolate risk. Recognizing that migrating core e-commerce features from a monolithic Salesforce Commerce Cloud (SFCC) environment to a headless commerce architecture by using SFCC as the backend API through Vercel could easily cause performance regression or checkout failures on the live site, the team adopted an incremental, phase-gated approach.

Our strategy was focused on decoupling the application layers systematically to allow legacy and modern components to run in parallel, ensuring that production traffic serving one million users remained completely unaffected during development sprints.

We deployed a dedicated Quality Assurance (QA) and Quality Engineering (QE) team consisting of 19 specialized resources structured in a hybrid model (4 onsite, 15 offshore) to provide continuous validation capabilities.

- ▶ **End-to-End Test Automation:** Developed an automated regression and compatibility framework leveraging Selenium WebDriver/Grid, Maven, TestNG, and LambdaTest. This allowed the team to validate features across both legacy SFCC and incoming Next.js components simultaneously.
- ▶ **Vercel migration and QE:** The Vercel migration was carried out page by page, and the QE team was supporting test automation to cover both the legacy and new Vercel pages using Selenium and the AI-agentic full-stack Kane AI with LambdaTest.
- ▶ **Continuous Integration & Scale:** Integrated automated test suites directly into the Jenkins CI/CD pipeline, utilizing Git for version control and cloud infrastructure (GCP, Fastly, and PerimeterX) to simulate high-concurrency traffic patterns and ensure platform stability.
- ▶ **Comprehensive Test Architecture:** Engineered a repository of over 1,450 functional test cases within TestLink, backed by rigorous API testing via Postman to validate decoupled microservices.

Business Outcomes



Generated USD ~7 million in total operational savings over the course of the engagement



Successfully validated and supported over 200+ production releases with zero critical downtime



Identified, logged, and mitigated 9,000+ software defects prior to production deployment using Jira for seamless lifecycle management



Built a permanent library of 750+ automated test scripts that drastically reduced regression testing cycles and accelerated time-to-market for new feature rollouts

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