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Industries: Retail, eCommerce
Region: UK

PROJECT TYPE
eCommerce platform modernization,
Headless commerce

TECHNOLOGIES
Legacy monolith commerce core (PHP/Java/.NET), Headless commerce architecture, BFF layer, Domain microservices, Event streaming for customer behavior data, Amazon Personalize, BI data marts, A/B testing framework

DURATION
7 months

TEAM
1 Solution Architect
1 Business Analyst / Product Owner
2 Backend Engineers
2 Frontend / BFF Engineers
1 DevOps / Cloud Engineer
1 Data Engineer
1 ML Engineer
1 QA Engineer

AI-driven legacy online retail platform modernization

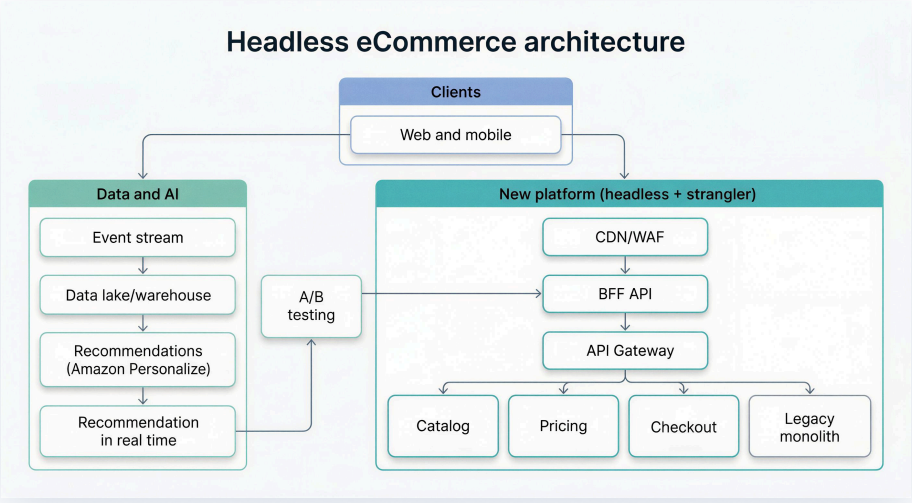
A phased modernization of the Client's eCommerce monolith into headless commerce, carried out without disrupting live checkout, pricing, or order flows, with an AI recommendation engine layered on a unified behavioral event stream to lift product conversion by ~25%.

Project background

The Client was a mid-sized omnichannel retailer in apparel and home goods with strong seasonal traffic and 1–2 million website visits per month. Its online business ran on a rigid, monolithic commerce platform that was hard to change, hard to integrate, and poorly suited to AI-driven personalization. The company brought in SumatoSoft to modernize the platform and build the data and AI layer needed for more effective digital growth.

Project Distinctive Features

The project combined legacy modernization and AI adoption into a single roadmap. Instead of replacing the entire platform at once, SumatoSoft used a Strangler Fig approach, introduced a headless commerce layer, built a unified event stream for customer behavior, and added AI-powered recommendations via real-time and batch delivery



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We'd tried to break this platform apart once before and rolled the whole thing back the week checkout started dropping orders. This time the migration happened underneath us in pieces, and the first I really heard of most of it was the marketing team asking why they could suddenly ship campaigns in days instead of weeks.

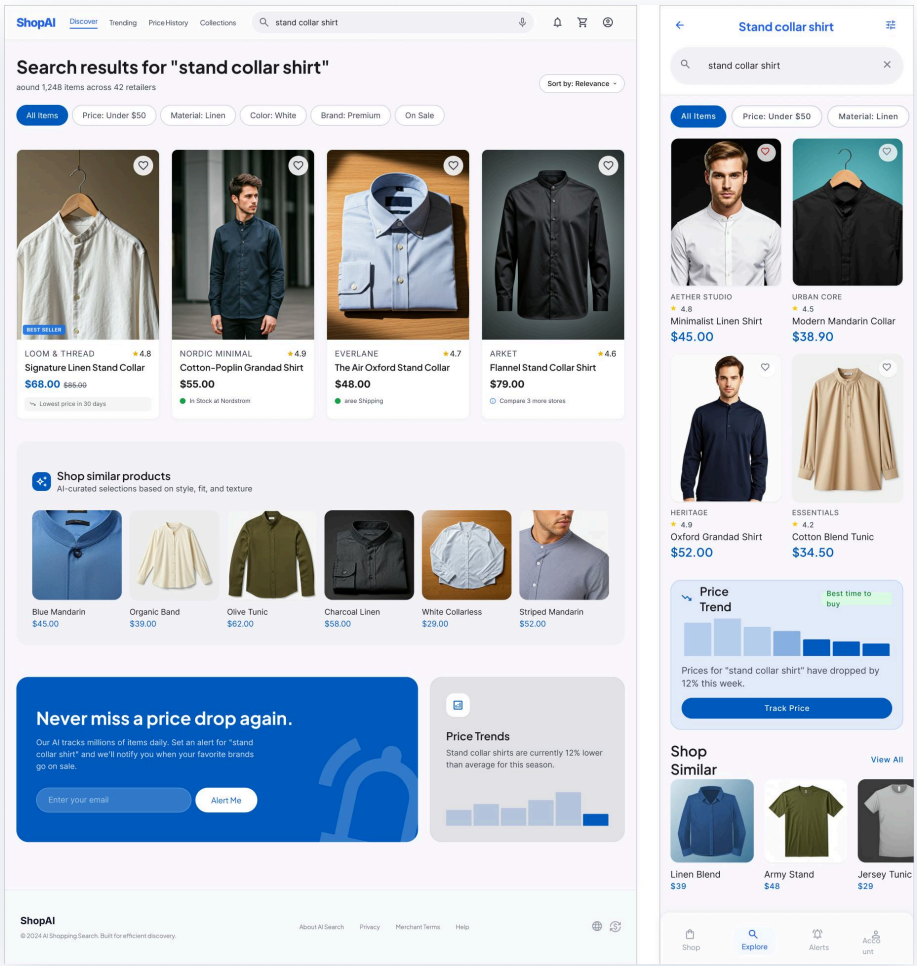
Ellis Caldwell
CEO

Business challenge

The Client wanted to reduce its reliance on its legacy monolith, accelerate campaign launches, improve personalization, and support online revenue growth. The existing platform slowed releases, made A/B testing difficult, relied on fragmented integrations with ERP, OMS, and marketing systems, and lacked a single behavioral data layer for recommendations and analytics. The business needed a safe modernization path that would not disrupt checkout, payments, or order flows.

Our solution

SumatoSoft placed a BFF and API facade in front of the legacy monolith, then began separating the commerce core into headless, domain-oriented services, including catalog, pricing, promotions, checkout, and customer profile. In parallel, we built an event pipeline for views, cart actions, and purchases, connected it to catalog data, and prepared an AI-ready data foundation. On top of that, we integrated Amazon Personalize for real-time recommendation blocks on the storefront and for batch recommendations in email and push. We also introduced observability, A/B testing support, and phased cutover controls to reduce migration risk.



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Customer’s benefits

Splitting catalog, pricing, promotions, and checkout out of the monolith sped up campaign release cycles by roughly 40% and cut change risk, while AI-driven recommendations across home, product, and cart pages improved product conversion by about 25%. A unified behavioral event stream also turned A/B testing into a standard, trustworthy step instead of an expensive experiment.

What’s happening with the project right now?

The modernization foundation is in place, and the Client continues to expand personalization scenarios, optimize recommendation quality through experimentation, and gradually move more commerce capabilities away from the legacy core.

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