

# Retail Giant Reasserts Dominance by Future Proofing its Infrastructure

## Case Study



## Overview

### Overhauling the application landscape

A large US-based department store chain — with 600+ stores, ten distribution centers, and over one million SKUs — was unable to meet the changing expectations of its customers with agility.

Its plans to launch new lines of businesses, such as curbside pickup and same-day delivery, were stalled due its inflexible and under-optimized supply chain that operated on a legacy warehouse management system (WMS). The system needed an overhaul not only to meet critical business needs, but also to cut excessive maintenance and usage costs.

#### **Zensar's brief:**

Working within time and budget constraints, significantly improve supply chain resiliency, IT agility, and infrastructure cost efficiency.

## Beyond the brief:

In addition to achieving the stated objectives, Zensar undertook massive steps to

- reduce technical debt radically,
- modernize software at scale,
- minimize code vulnerabilities, and
- enhance the user experience.



## Challenges

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### Lack of IT agility

The IT department was under pressure to overhaul the rigid legacy WMS that the supply chain operated on to accelerate go-to-market (GTM) and boost cost efficiency.

However, the task was not as easy as buying and installing an out-of-the-box WMS. A commercial-off-the-shelf (COTS) WMS that could cover end-to-end needs and essential customizations wasn't readily available.



## Solution

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### Reengineering the business backbone

We deployed a comprehensive solution in four stages:

- 1. Transform:** With the goal of making customizations easier and more scalable, we leveraged an event-driven microservices architecture to shift the entire system to an online business supply chain platform.
- 2. Optimize:** Putting to use our extensive application transformation experience, we deployed a COTS WMS with high-end customizations to address product white spaces and incorporate homegrown IP. We also optimized support with a 24/7 product and platform support, L2/L3 support, peak planning, and a dedicated control room.
- 3. Cloudify:** We hosted all the existing and new services on Google Cloud Platform (GCP), replacing the old monolith with a consolidated GCP-led WMS. The result:
  - Successful cloud-native implementation of a unified supply chain platform
  - Significant savings by doing away with the liability of infrastructure maintenance
- 4. Modernize:** We first moved applications to a cloud-native stack on GCP, enabling massive technical debt reduction. Next, we modernized the ads platform from

outdated technologies (Angular v1, .NET, and SQL Server), ensuring no breakage/loss in business logic.

After the modernization effort, we addressed critical security vulnerabilities, building test suites automatically from code. Finally, we enhanced the user experience with an intuitive user interface (UI), using the latest UI frameworks.



## Impact

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### Enhanced business services

According to internal benchmarks, these results were delivered:

- ~40-45 percent reduction in infrastructure costs due to cloud migration
- 15 percent improvement in picking productivity
- Nearly 40 percent increase in order allocations through an optimized algorithm
- Up to 67 percent fewer integration errors between warehouses and different commerce systems
- 250+ million cubic inches of additional space in warehouses

#### **Business outcomes:**

The solution enabled greater business confidence with improvements in supply chain resiliency, agility to launch new campaigns and business lines, and brand loyalty due to enhanced consumer experiences.

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For more information, please contact: [info@zensar.com](mailto:info@zensar.com) | [www.zensar.com](http://www.zensar.com)