



Case Study

Enterprise API Modernization & Automation Framework Transformation

For a Cincinnati-Based Fortune 50 Grocery Retailer



Executive Summary

A Cincinnati-Based Fortune 50 Grocery Retailer engaged Golden Technology to support large-scale digital transformation initiatives across its enterprise technology ecosystem.

Over multiple multi-year engagements, Golden consultants played a critical role in:

API Modernization

Modernizing and scaling enterprise APIs

Data Orchestration

Designing a centralized product data orchestration ecosystem

Automation Framework

Building and expanding an enterprise-grade automation framework

Personalization

Supporting personalization engines powering customer-facing digital experiences

📄 The result was a more scalable, cost-efficient, and resilient technology foundation capable of supporting millions of transactions, product attributes, and customer interactions daily.

The Challenge

As a Fortune 50 grocery retailer operating thousands of stores nationwide, the organization faced increasing complexity across:

Operational Complexity

- Product data management (1,100+ attributes per SKU)
- Customer personalization across web and mobile
- Third-party vendor integrations
- Legacy systems requiring modernization
- High-volume API validation and regression testing

Core System Limitations

Several core systems relied on:

- Expensive proprietary tools
- Limited scalability across teams
- Fragmented data sources
- Manual validation processes that slowed development cycles

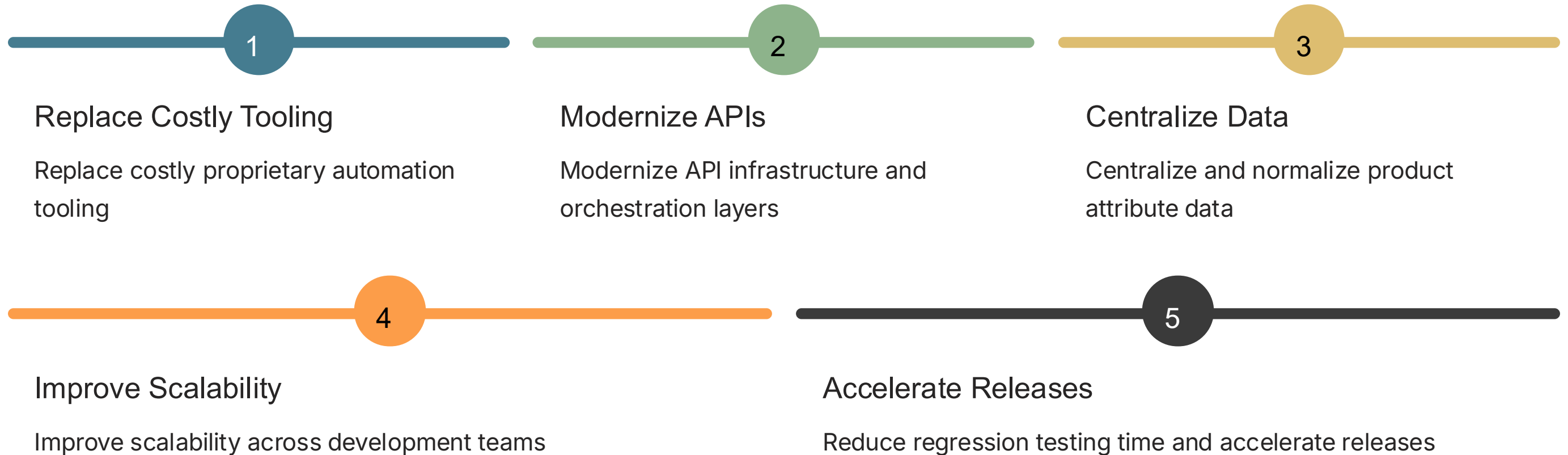
In parallel, digital growth—including personalization, mobile engagement, and omnichannel commerce—required backend systems capable of delivering accurate, real-time data to multiple consumer platforms.

IN-STORE TECHNOLOGY



The Objective

The organization needed to:



📄 The goal was not simply modernization—but building a **future-proof, enterprise-grade platform** capable of evolving alongside retail growth.

Golden Technology's Role

Golden Technology deployed senior-level engineering leadership to support multiple initiatives across the enterprise ecosystem.

1. Enterprise API Automation Framework (Transformation Initiative)

Initially brought in to support API automation, Golden Technology consultants:

→ Open-Source Migration

Migrated the organization from an expensive licensed automation tool to a **Java + REST Assured-based open-source framework**

→ CI/CD Integration

Integrated the automation suite directly into CI/CD pipelines

→ Smooth Transition

Replicated and improved existing input/output structures for smooth transition

→ Rapid Validation

Enabled full regression validation within **~15 minutes** of code changes

Expansion & Enterprise Adoption

What began as a team-specific framework evolved into an enterprise solution:

Technical Expansion

- Refactored into a scalable v2 architecture
- Expanded support for SQL & NoSQL databases
- Cassandra
- Kafka
- MQ / WebSphere messaging
- Selenium for UI automation

Adopted by the Center of Excellence and rolled out across multiple teams.

Impact

Cost Savings

Significant licensing cost savings

Shift-Left QA

Shift-left QA model

Less Spillover

Reduced sprint spillover

Early Detection

Faster defect detection (pre-pull request validation)

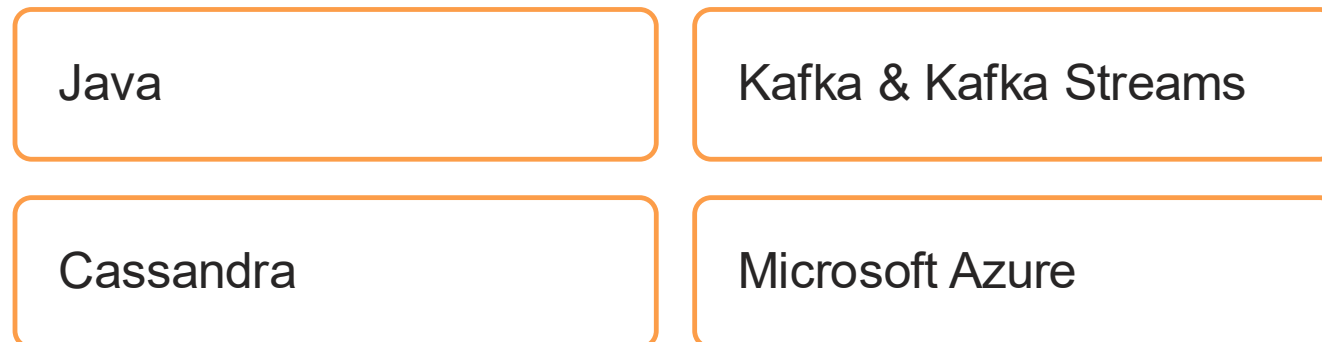
2. Product Data Orchestration Ecosystem

The retailer manages over 1,100–1,200 attributes per product, sourced from manufacturers, government agencies, vendors, and internal systems.

These Attributes Power




- Web & mobile experiences
- POS systems
- Nutritional displays
- In-store digital signage
- Pricing engines

Core Technologies

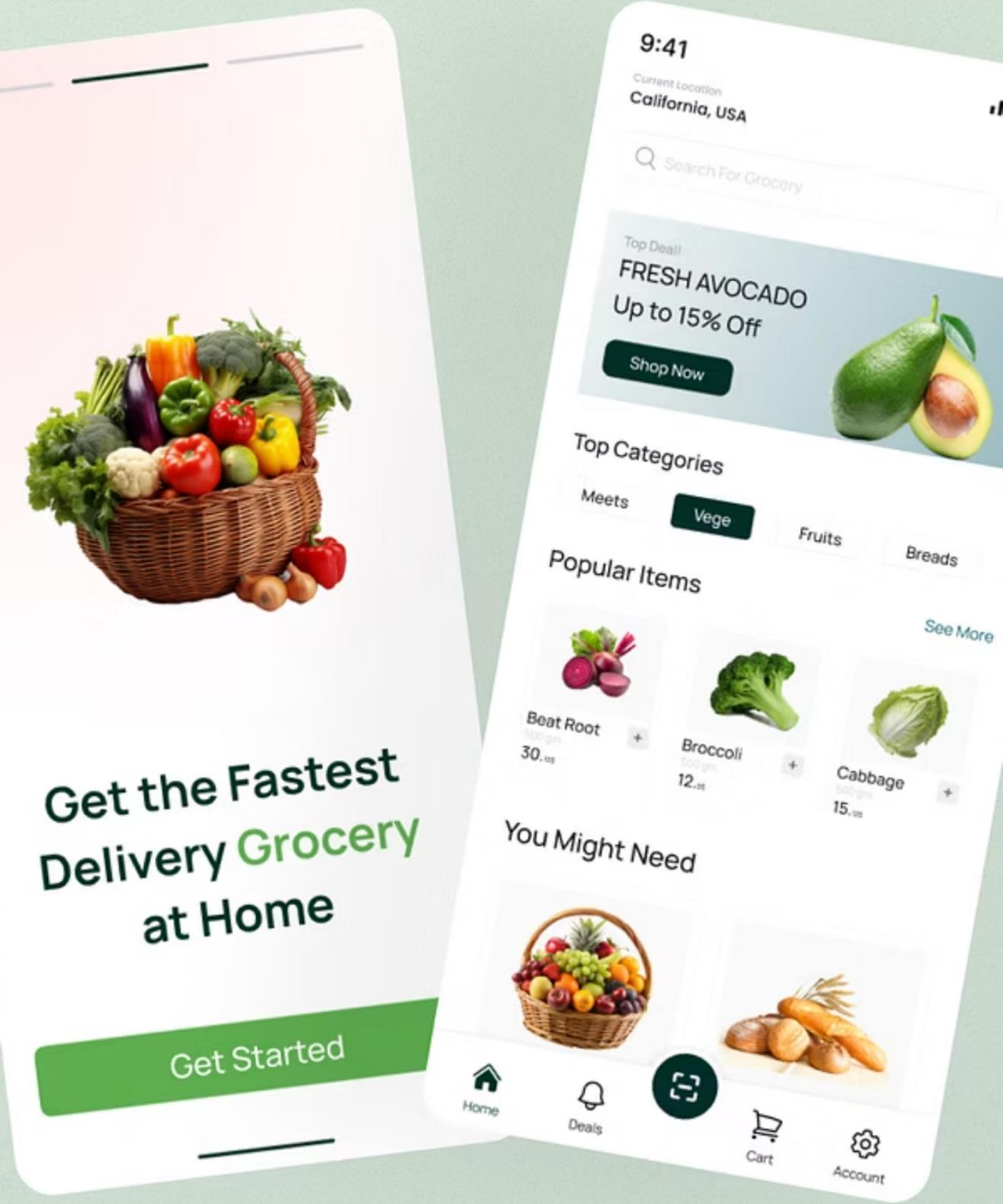


Orchestration Layer Design

Golden supported the design and development of an orchestration layer that:

- 
Ingested
 Product data from multiple upstream sources
- 
Normalized & Validated
 Attributes and established a single source of truth
- 
Distributed
 Relevant subsets of data to downstream systems

This architecture ensured each downstream system received only the data it required, reducing redundancy and improving performance.



3. Personalization & Customer Experience APIs

Golden contributed to backend systems supporting:



Customer Login Personalization

Personalized experiences tied to individual customer profiles and login sessions



Product Recommendations & Purchase History

Surfacing frequently purchased products and recommended items based on behavioral data



Coupon Prioritization

Applicable discounts and targeted advertising placements determined by customer ID

These systems processed high-volume transaction history and behavioral data, powering dynamic digital storefront experiences.

Modernization Philosophy: Build vs. Buy

During product data modernization efforts, the organization evaluated vendor-based solutions versus custom-built platforms.

Golden's Engineering Leadership

Gap Identification

Identify gaps between legacy and future-state requirements

Risk Mitigation

Mitigate risks of siloed modernization teams

Communication Bridge

Bridge communication between legacy SMEs and modernization architects

Failure Prevention

Prevent expensive late-stage production failures

Key Outcome

In one initiative, early warning signs prevented further reliance on a vendor solution that proved misaligned with enterprise requirements—**avoiding compounding delays and cost overruns.**

Business Impact

Across multiple initiatives, Golden Technology delivered:



✓ Cost Reduction

- Eliminated proprietary licensing for automation tools
- Reduced infrastructure overhead through open-source adoption



✓ Speed to Market

- 15-minute automated regression cycles
- Shift-left QA enabling faster story completion



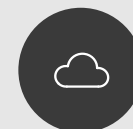
✓ Enterprise Scalability

- Framework extensibility across technologies and teams
- Resilient orchestration architecture



✓ Data Integrity & Consistency

- Centralized product attribute governance
- Unified ecosystem distribution



✓ Long-Term Sustainability

- Cloud-native, scalable solutions
- Reduced dependency on legacy infrastructure

Why the Engagement Succeeded

The multi-year engagement was sustained due to:

Strong Partnership Model

Direct communication between consultant and Golden leadership

Collaborative Problem-Solving Culture

Mutual trust between client and delivery team

Continuous Strategic Input

Beyond technical execution, Golden provided ongoing strategic guidance

- ☐ Golden's approach went beyond staff augmentation—it functioned as a **true extension of the enterprise engineering organization.**



Forward-Looking Insights & Conclusion

Forward-Looking Insights

Based on experience in large-scale grocery retail:

- Brick-and-mortar presence remains strategically important for fulfillment trust
- Delivery and curbside logistics optimization will drive backend innovation
- AI will enhance order prioritization, cart optimization, and personalization
- API orchestration and data distribution will remain foundational to omnichannel retail

Conclusion

Golden Technology's work with a Cincinnati-Based Fortune 50 Grocery Retailer demonstrates:

Deep Enterprise API
Expertise

Proven Modernization
Leadership

Enterprise Automation
Transformation

Scalable Data
Orchestration
Architecture

Through strategic engineering leadership and scalable architecture design, Golden helped position the retailer's digital ecosystem for **long-term growth, flexibility, and operational efficiency.**