

AI-ACCELERATED LEGACY MODERNIZATION FOR A GLOBAL RETAIL ENTERPRISE

**40% Faster Delivery. 50% Lower Engineering Effort.
Zero Business Logic Lost.**

Modernizing a decades-old COBOL ecosystem without disrupting critical operations.



The Client

- ▶ Leading direct-to-consumer (DTC) company
- ▶ Headquartered in Illinois, USA
- ▶ Global presence in 10+ countries across North America, Europe, and Australia
- ▶ International, privately held, employee-owned retailer
- ▶ Manages a diverse portfolio specializing in premium collectibles, fine jewelry, commemorative merchandise, custom apparel, sports memorabilia, home accessories, and wearable art
- ▶ Operates through direct marketing and e-commerce channels
- ▶ Manages highly customized operational workflows across multiple product lines

The Challenge

The client relied on a decades-old COBOL mainframe application to support its core business operations.

While dependable, the legacy application became increasingly difficult and expensive to maintain.

The organization faced growing operational and modernization challenges:



Rising maintenance costs



Shrinking availability of COBOL talent



Undocumented business logic embedded inside legacy applications



Delayed updates and slower feature delivery



Limited connectivity with modern digital systems



Increasing technical debt and operational dependency



Risk of institutional knowledge loss as experienced teams retired

The system still worked. But the environment surrounding it was becoming unsustainable.

Traditional rewrite approaches introduced significant operational risk. Critical workflows had evolved over decades, and losing embedded business logic could disrupt core business operations.

The client needed a modernization partner that could accelerate transformation while preserving operational continuity.

After evaluating multiple options, the client selected Opteamix for its ability to combine modernization speed, cost efficiency, and business logic preservation the preservation of business logic within a controlled execution framework.

The Solution

Opteamix designed and executed a human-led, AI-powered modernization strategy to reduce risk, accelerate delivery, and preserve critical business logic from day one.

Rather than attempting a high-risk full-system replacement, the engagement began with a pilot initiative focused on a high-impact module within the COBOL ecosystem.

The objective was to validate the legacy application modernization program before scaling the transformation enterprise-wide.

The Modernization Approach

Pilot-Led Execution

A pilot initiative was launched to deliver early outcomes, reduce modernization risk, and build executive confidence for broader transformation.



Phased Modernization Roadmap

Opteamix collaborated with the client to establish a phased modernization plan aligned with long-term business and technology goals.



AI-Assisted Documentation & Engineering

Opteamix's Legacy Modernization solution framework was used to transform undocumented COBOL applications into structured modernization requirements.

Gemini AI and Claude AI accelerated code generation and engineering activities under expert human supervision.



Legacy Discovery & Business Logic Extraction

Teams analyzed the legacy ecosystem to identify hidden dependencies, decode operational workflows, and extract embedded business logic.



Business Logic Traceability

Operational rules and workflows were transformed into structured, traceable requirements to support validation and continuity throughout modernization.



Modern Architecture Design

A scalable, future-ready architecture was designed to support long-term legacy modernization and integration goals.



AI-Powered Testing & Validation

AI-driven functional testing accelerated validation, improved test coverage, and strengthened the reliability of legacy modernization.



Governance & Quality Control

Human validation, automated checks, and engineering governance ensured the quality of legacy modernization, operational continuity, and scalable execution.

Strategy Alone Doesn't Modernize Legacy Systems

Many modernization vendors deliver strategy presentations.

Few successfully execute enterprise transformation at scale.

Legacy modernization requires continuous adaptation, operational understanding, and execution discipline throughout the engagement lifecycle.

At Opteamix, modernization is approached as a partnership, — not a handoff.

The focus is not just on defining the roadmap.

The focus is on executing it successfully, adapting when needed, and building confidence through measurable outcomes.

The pilot-first model allowed the client to validate the approach in a controlled environment before expanding modernization across additional systems.

The Pilot Proved Modernization Could Be Faster, Less Risky, and Scalable.

By partnering with Opteamix, the client transformed a decades-old mainframe application from a growing operational constraint into a foundation for future innovation.

The pilot delivered measurable business outcomes while establishing organizational confidence in the modernization strategy.



The Outcomes

40%

Faster Modernization Timelines

AI-assisted workflows accelerated delivery timelines and compressed the overall modernization program duration.

50%

Reduction in Engineering Effort

Automation reduced manual effort across documentation, transformation, and testing activities, improving overall engineering productivity.

40%

Lower Modernization Costs

Reduced engineering overhead and improved delivery efficiency lowering modernization and maintenance expenditures.

100%

Preservation of Business Logic

End-to-end traceability preserved critical operational workflows and ensured continuity across modernization activities.

Modern, Modular Architecture Established

A scalable technology foundation was established to support future transformation initiatives with greater flexibility and lower operational risk.

Beyond The Pilot

The pilot validated that AI-assisted legacy modernization could reduce risk while accelerating enterprise transformation.

The success of the engagement helped:

- ▶ secure executive buy-in
- ▶ accelerate enterprise adoption
- ▶ establish a repeatable modernization framework
- ▶ expand modernization into additional systems
- ▶ shift IT focus from maintenance to innovation

Impressed by the speed, precision, and operational outcomes, the client expanded the engagement into a multi-year partnership with Opteamix to modernize its complete COBOL application landscape.

Ready to Validate Modernization in Your Environment?

The fastest way to reduce modernization risk is to prove outcomes early.

Schedule a free modernization assessment or discuss a pilot approach with Opteamix experts.

[Schedule a Free Modernization Assessment](#)

[Talk to Our Modernization Experts](#)

About Opteamix

Opteamix is a human-led, AI-powered technology services company helping enterprises modernize legacy systems, build AI-enabled digital solutions, and scale AI-powered Global Capability Centers (GCCs).

Through AI native execution, high-performing teams, and a partnership-led approach, we deliver faster, more reliable outcomes and help organizations scale with confidence.

Headquartered in Denver, Colorado, with a global delivery presence in Bengaluru, India.