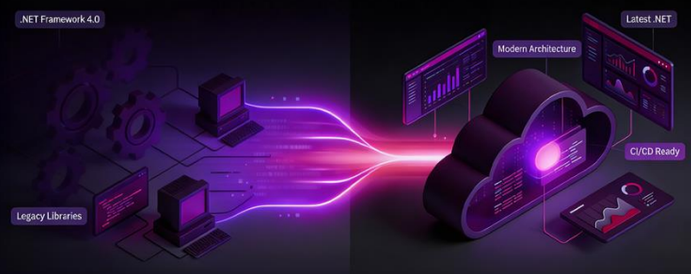
RISHABH SOFTWARE

Case Study

Seamless ERP Framework Upgrade to Latest .NET Version Without Operational Disruption

For a leading electrical components manufacturer in India operating multi-plant, business-critical production and finance systems.



PROJECT OVERVIEW

A multi-plant electrical components manufacturer relied on a legacy ERP system for core operations, but growing limitations created risks in security, compatibility, and maintainability. To address this, the ERP was upgraded from .NET Framework 4.0 to 4.8.1, strengthening its foundation and ensuring stable, secure, and future-ready operations.

Capability	Industry	Country
Application Development and Maintenance Services	Digital Manufacturing	India

KEY FEATURES

The framework upgrade strengthened the client's ERP as a reliable system of record while preparing it for extension into a connected and data-driven manufacturing environment. Rather than replacing the existing system, the initiative focused on modernizing the ERP foundation to support future integration, improved visibility, and scalable operations across plants.

In-place framework modernization

Upgraded the ERP from .NET Framework 4.0 to 4.8.1 through targeted code and configuration enhancements, without changing the existing platform or disrupting business workflows.

Legacy dependency stabilization

Reviewed critical third-party components such as DevExpress, Crystal Reports, PDF, and barcode libraries; retained stable components and identified areas for future upgrades where required.

Codebase standardization and maintainability improvements

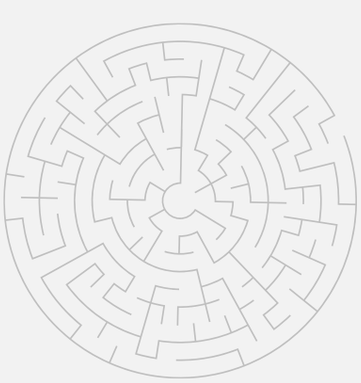
Standardized file upload and retrieval logic by removing hardcoded file paths across modules, improving maintainability and deployment flexibility.

Security and configuration hardening

Leveraged built-in security improvements available in .NET Framework 4.8.1, enhancing baseline security posture and compatibility with modern infrastructure.

Business continuity through controlled rollout

Executed carefully managed transition with production-aligned UAT, structured regression validation with end-user involvement across critical modules to ensure system stability for high-impact modules, and rollback strategies, ensuring minimal disruption to ongoing plant operations and overall workflow through controlled rollout and validation.



CHALLENGES

- **Aging ERP framework** created compatibility and security risks on modern infrastructure
- **Legacy third-party components** (DevExpress, Crystal Reports, PDF/barcode libraries) with limited support
- **Deprecated APIs and weak configurations** impacted system performance and security
- **High regression risk** due to tightly coupled database logic and extensive reporting
- **Minimal downtime tolerance,** as the ERP powered daily shop floor and financial operations
- **Code synchronization complexity** as ongoing production changes needed to be aligned with the upgraded framework codebase during execution

SOLUTION

Our approach focused on strengthening the ERP foundation through a controlled, low-risk modernization strategy. The team worked closely with business and IT stakeholders to assess dependencies, prioritize critical modules, and execute the upgrade in phases. By combining careful code remediation, environment alignment, and structured validation, we ensured that the upgraded system remained stable, secure, and fully aligned with ongoing business operations.

Security-first ERP upgrade approach

Addressed obsolete APIs, weak protocol defaults, and legacy configuration gaps as a part of **.NET framework upgrade,** improving overall security, compliance readiness, and runtime resilience.

Component validation and output consistency

Recompiled and verified DevExpress and Crystal Reports dependencies, while standardizing report behavior and validating outputs across inventory, production, and finance modules.

Business logic preservation

Delivered the .Net framework upgrade without altering core business logic, preserving process continuity and ensuring a seamless experience for end users across critical functions.

Risk-managed deployment and regression assurance

Established a phased execution model with dependency review, structured validation/testing, environment parity, user validation, and cutover planning to reduce operational risk.

Parallel codebase management

Seamlessly managed parallel codebases across pre-upgrade and post-upgrade environments, while continuously integrating ongoing business changes to keep modernization aligned with active operations.

CI/CD readiness enablement

Enabled CI/CD readiness by preparing the application for structured, repeatable deployment processes, supporting faster releases, improved control, and better alignment with Azure DevOps practices.

TECHNOLOGIES & TOOLS

Microsoft SQL Server · .NET Framework 4.8.1 · DevExpress™ · VB · crystal reports · IIS

Outcomes

40%
improvement in application security readiness

60%
improved compatibility with modern infrastructure

35%
reduction in upgrade-related regression risk

ABOUT RISHABH SOFTWARE

As a Digital Engineering and Enterprise Transformation leader, we empower businesses to scale, innovate, and thrive in today's digital-first world through technology rooted in trust and transparency. We leverage emerging capabilities such as Cloud, Data Engineering & Analytics, AI, Automation and Application Engineering to drive digital transformation and unlock new opportunities. We have successfully served across 25+ countries, and we work towards customer delight as "WE CARE."

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