

Grid Dynamics case study

AI-powered legacy modernization for healthcare revenue SaaS platform



Grid Dynamics



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Introduction

A leading healthcare revenue cycle management (RCM) SaaS platform provider reached a turning point after rapid growth and multiple acquisitions. Its expanding portfolio created a complex landscape of legacy applications and aging on-premises infrastructure supporting critical claims processing.

To maintain its market leadership, the company needed to move beyond incremental fixes and transition to a cloud-native microservices architecture capable of meeting strict PHI and HIPAA compliance while improving scalability and reliability. At the same time, it needed to increase developer productivity to accelerate legacy code modernization and improve time to market for new features.

Partnering with Grid Dynamics, the company migrated its claims platform to Microsoft Azure and transitioned to a future-proof microservices architecture.

Engineering teams also underwent AI-for-productivity training using our methodology based on Cursor, delivering the equivalent of nine weeks of engineering value in just three days through an AI-assisted SDLC.

The challenge

The company's core claims processing platform was built as a tightly coupled monolith running on-premises on Windows services and .NET Framework 4.5. Rapid growth and three acquisitions expanded the application and infrastructure portfolio, increasing architectural complexity and making it harder to deliver new features, scale systems, and maintain the platform. It became clear that the company needed a future-proof architecture capable of scaling with growth, supporting integration across acquired systems, and enabling faster delivery of new capabilities.

However, any legacy modernization effort also had to operate within strict constraints. The platform handled sensitive healthcare data, requiring continuous PHI and HIPAA compliance. The transition needed to follow a Strangler Fig pattern, enabling on-premise and cloud systems to coexist during migration. At the same time, the company faced a fixed deadline to move claims processing workloads out of its data center.

To accelerate modernization and improve time to market, the company sought to introduce AI-assisted development practices. However, enabling teams to adopt modern tools and development approaches, and attracting the talent needed to support them, remained a significant challenge.

Legacy debt

A monolithic, tightly coupled system running on-premises on Windows services and .NET Framework 4.5

Lack of scalability

The existing infrastructure hindered the ability to handle rapid growth and integrate newly acquired firms

Time to market

Manual processes and legacy code slowed the release of new features

Strict modernization constraints

Maintaining PHI and HIPAA compliance, supporting on-premise and cloud coexistence, and meeting a fixed migration deadline

Lack of modern AI development practices

Limited adoption of AI-assisted development slowed legacy modernization efforts and developer productivity

The solution

Grid Dynamics led a modernization initiative to transform the company's legacy claims platform into a secure, cloud-native microservices architecture while introducing an AI-enabled development model to accelerate modernization.

The effort began with an architectural shift from a tightly coupled monolithic system to a microservices architecture using the Strangler Fig pattern, allowing legacy components and new services to coexist during migration while maintaining uninterrupted claims processing. The platform was then migrated to Microsoft Azure, establishing a scalable cloud-native foundation that met strict PHI and HIPAA compliance requirements.

Cloud migration to Azure

The migration to Azure modernized the platform's technology stack, infrastructure, and data platform to support a future-ready microservices architecture and cloud-native operations.

Containerization: Legacy on-premises Windows services were replaced with cloud-based containers running on Linux and deployed on Azure Kubernetes Service (AKS), enabling scalable microservices orchestration and improved operational resilience.

Azure-native services: The platform leveraged Azure SQL PaaS, Azure Service Bus, Application Insights, and Azure Key Vault to strengthen messaging, observability, and secrets management while supporting strict PHI and HIPAA compliance requirements.

Tech stack upgrade: Applications were upgraded from .NET Framework 4.5 to .NET Core 8, improving performance, cross-platform compatibility, and long-term support.

Data modernization: More than 20 databases were migrated to Azure SQL PaaS, and legacy Azure Data Factory pipelines were transitioned to Azure Databricks, significantly improving ETL performance and data reliability.

AI-driven developer productivity

One of the most impactful elements of the modernization program was the introduction of an AI-enabled software development lifecycle (SDLC). Grid Dynamics combined targeted training, modern AI tools, and structured workflows to help engineering teams integrate AI directly into everyday development work.

The initiative began with AI-for-developer-productivity training based on the Grid Dynamics methodology. Developers learned how to apply AI for code generation, refactoring, debugging, and automated test creation while maintaining enterprise engineering standards.

After the training, teams adopted Cursor as their primary environment for AI-assisted development. Working with AI directly inside the codebase significantly accelerated legacy refactoring, new service development, and unit test generation.

The results

23K

lines of legacy code rewritten
using AI-assisted development

3 days

of AI-assisted development delivered
9 weeks of engineering value

58%

unit test coverage achieved, improving code quality
and reducing operational risk (up from 0%)

The legacy modernization initiative delivered measurable improvements in platform scalability, engineering productivity, and operational efficiency while meeting strict migration timelines.

Claims processing workloads were successfully moved from on-premises infrastructure to Microsoft Azure within the fixed deadline, ensuring uninterrupted business operations.

The modernization also reduced the total cost of ownership (TCO) by consolidating infrastructure inherited from multiple acquisitions and moving to a scalable cloud platform.

The program established mature DevOps and SRE practices, including automated CI/CD pipelines and infrastructure as code (IaC), enabling more reliable deployments and improved platform stability.

Following AI-for-productivity training, three days of AI-assisted development delivered the equivalent of nine weeks of engineering value. Engineering teams rewrote 23,000 lines of legacy code while increasing unit test coverage from 0% to 58%, improving code quality and reducing operational risk.



About Grid Dynamics

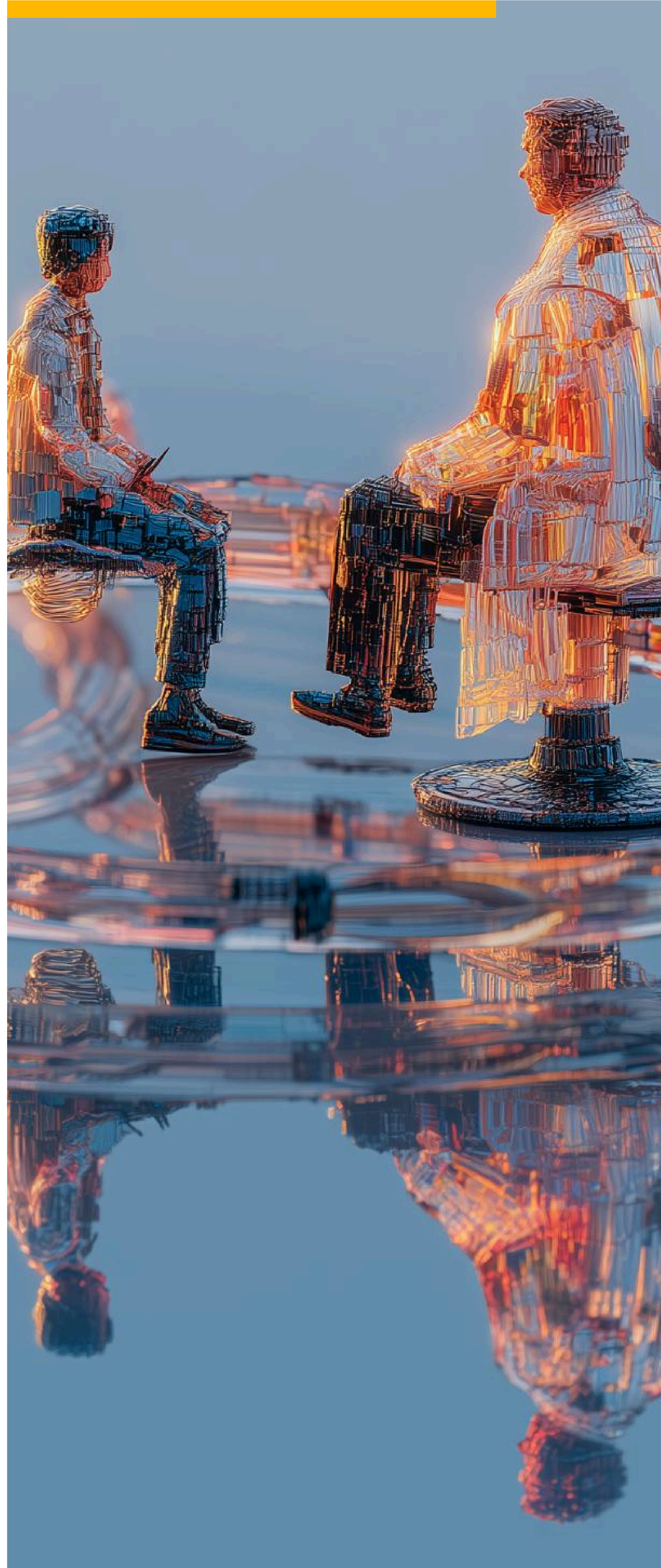
Grid Dynamics empowers enterprises to drive growth, boost efficiency, and transform their digital capabilities through expert technology consulting, platform engineering, AI, and advanced analytics.

Fusing technical vision with business acumen, Grid Dynamics (NASDAQ: GDYN) fuels a relentless drive toward sustainable digital transformation. As a forefront provider of technology consulting, platform and product engineering services, and bespoke software development, we draw from over 8 years of leadership in Enterprise AI, coupled with profound expertise in cloud, data, and advanced analytics.

Our commitment to engineering excellence, R&D leadership, a co-innovation ethos, globally efficient follow-the-sun delivery model, and an unwavering "whatever it takes" dedication to client success empower us to solve even the most complex enterprise challenges, ensuring profitable business outcomes and future-proof growth.

Founded in 2006, Grid Dynamics is headquartered in Silicon Valley and has a global talent pool of intellectually curious problem solvers in offices across the Americas, Europe, and India.

LET'S TALK AI LEGACY MODERNIZATION →





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trusted engineering partner for digital transformation

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