liatrio

CareSource Partners with Liatrio to Accelerate Its Cloud Migration to Azure and Enable a Modern Data Platform with Repeatable Application and IaC Delivery Pipelines

BACKGROUND

In 2020, CareSource committed to migrating its data services to Azure cloud, with its Modern Data Platform (MDP) product. The Modern Data Platform — providing a Data Fabric architecture layer — is a cloud-based solution that replaces the on-premises Enterprise Data Warehouse (EDW) and other siloed reporting databases. MDP integrates into CareSource's data integration and transport framework, acting as an anchor point to modern capabilities like artificial intelligence and machine learning — which yield improved healthcare outcomes for CareSource members. When built, MDP will become the central data hub across CareSource, hosting and managing 40TB of data, supporting 700 to 1,000 users (Data Consumers, Data Analyst, and Advanced Analysts) with near real-time data movement, and producing more than 1,500 pre-built reports, dashboards, and visualizations.

CareSource

Founded in 1989

Nationally recognized nonprofit managed care organization

4,500 employees serving over 2 million members in 5 states

Based in Dayton, OH

CareSource has committed to modernizing its application development and software delivery practices — specifically focusing on DevOps Automation and Infrastructure Automation via Infrastructure as Code (IaC).

In Q4 2020, CareSource engaged Liatrio as a strategic partner to provide engineering expertise, experience modernizing software delivery, and transforming product teams' approaches, particularly on Azure cloud. With an extensive history of successful cloud and DevOps transformations for large healthcare enterprises, Liatrio offered a unique hands-on delivery and pairing approach critical to evolving CareSource's engineering expertise and transferring the necessary capabilities for their long-term continued success. Based on their experience and trust in the industry, Liatrio was the partner of choice for CareSource. In January 2021, Liatrio kicked off the engagement with a small team of DevOps and delivery experts.

CHALLENGES

CareSource was presented with the challenge of building a large-scale modernization platform. After evaluating the scope of the work, it was mutually decided that MDP would be the first undertaking that would ultimately accelerate the initiative in a scalable, long-lasting way across the enterprise.

As their first project, CareSource's efforts took a proof-of-technology approach. Prior to engaging with Liatrio, nearly all configurations of Azure services and application (app) deployments for MDP were manual (as opposed to stored in source code). CareSource's product delivery teams needed the ability to provision infrastructure and related configurations quickly and accurately for their product to scale successfully. Product delivery teams needed to be able to deploy software changes rapidly and safely to their customers. With the scalability demands of delivery teams coupled with the move to the Azure public cloud, CareSource would need to optimize their approach to infrastructure and software delivery.
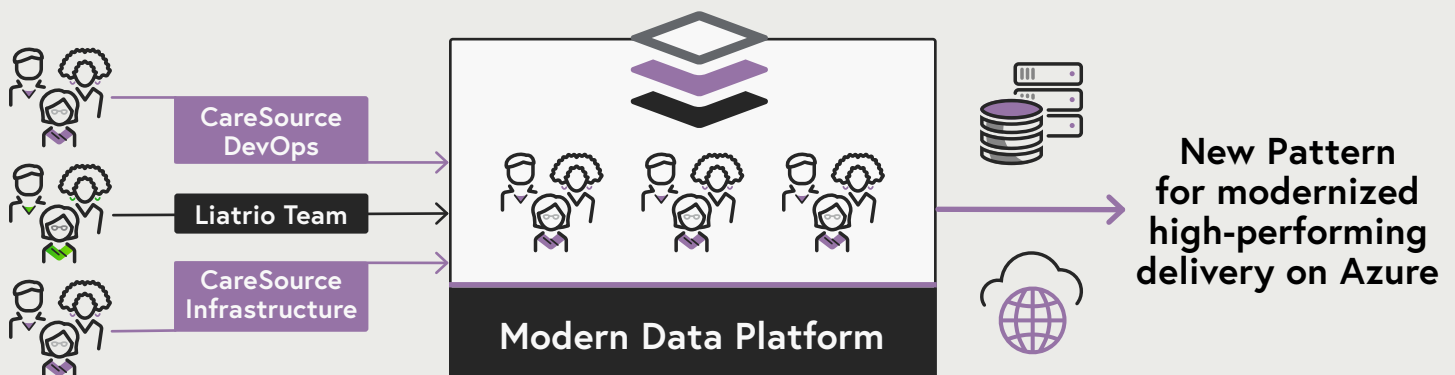
This movement towards standardization and reusable components between products and their related application and infrastructure pipelines improves the ability to support new and existing products consistently. Simply put, CareSource Infrastructure and DevOps Platform Teams recognized they needed to shift to a **Code First** approach to meet the demands of delivery teams.

> "
> *This is the most successful engagement that I've been a part of in my 20 years in IT.*
> —*Todd Mitchell, Senior Data Engineer, CareSource*

TOGETHER, CARESOURCE AND LIATRIO EXECUTED:

CareSource DevOps

Liatrio Team

CareSource Infrastructure

Modern Data Platform

New Pattern for modernized high-performing delivery on Azure

Alignment between InfoSec and the DevOps and Infrastructure Platform Teams to pilot Azure DevOps Services (ADOS) with the MDP

Achieved IaC pipeline via reusable Terraform modules, complete with a delivery pipeline that validates, runs unit tests, deploys infrastructure changes, and triggers an app deployment

Built and enabled scalable CI/CD pipelines for both Infrastructure and Application Delivery for over 16 Azure services in 16 weeks, via pair programming and in collaboration with CareSource's MDP Delivery, DevOps, and Infrastructure Platform Teams

Modeling Modern Engineering Practice — Code First approach ("Everything is Code" mentality) — all application, infrastructure, data, service, platform, and pipeline technology source-controlled and delivered with the same engineer-first principles
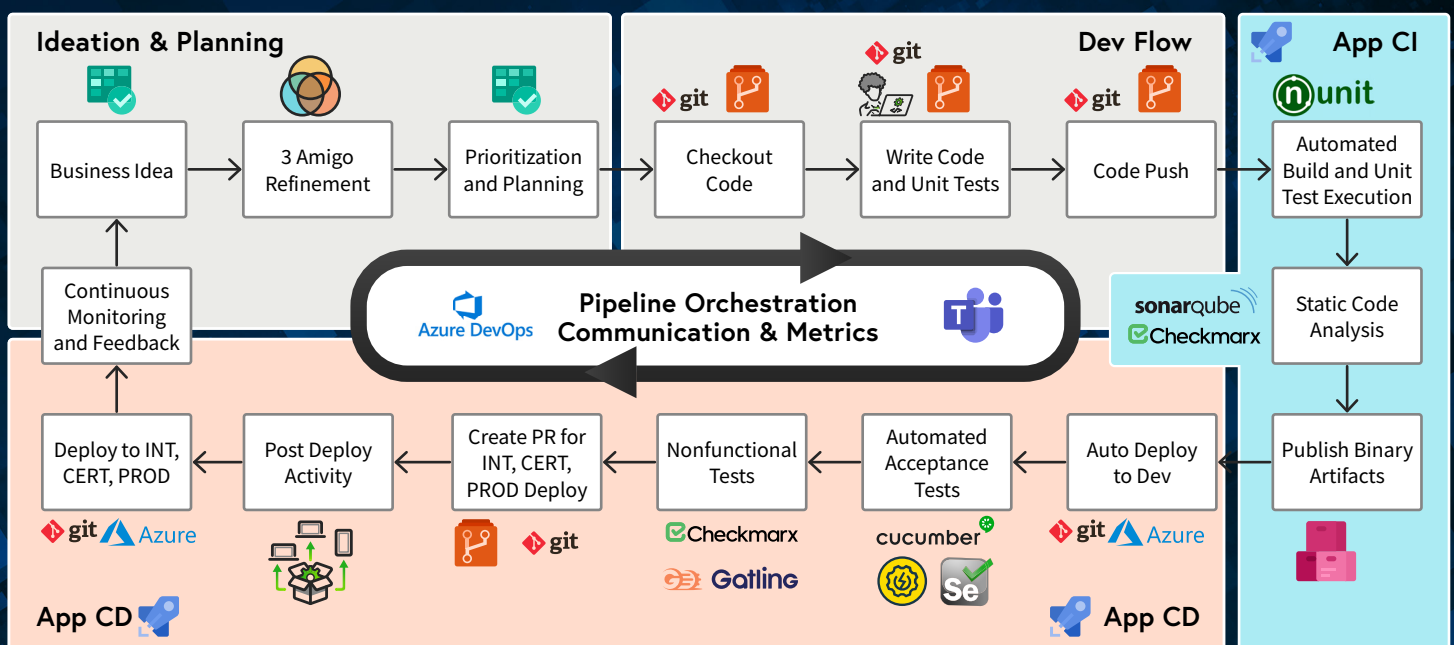
Leveraged a GitOps approach to promoting the infrastructure and application changes between environments

Continuous Testing for Infrastructure — created unit testing for infrastructure code, to build in quality and safety

Hands-on immersive enablement, uplift, and collaboration with MDP, DevOps, and Infrastructure teams, through the initial Azure cloud journey

PIPELINE OVERVIEW

Pipeline Operating Model in the context of application delivery project source code

Diagram: Pipeline Operating Model

Ideation & Planning
Business Idea → 3 Amigo Refinement → Prioritization and Planning

Dev Flow
Checkout Code → Write Code and Unit Tests → Code Push

App CI
Automated Build and Unit Test Execution → Static Code Analysis → Publish Binary Artifacts

Pipeline Orchestration Communication & Metrics (Azure DevOps)

Continuous Monitoring and Feedback

App CD
Deploy to INT, CERT, PROD ← Post Deploy Activity ← Create PR for INT, CERT, PROD Deploy ← Nonfunctional Tests ← Automated Acceptance Tests ← Auto Deploy to Dev

BUSINESS OUTCOMES

In just 16 weeks, CareSource and Liatrio worked together to drastically reduce required cycles and increase deployment frequency to support MDP development projects such as:

Team Confidence
Increased deployment frequency from **monthly** to **on demand** (daily on average)

Deployment Process
Decreased deployment activity from **5 days** of manual efforts to **15 minutes** fully automated via code

Transparency
Liatrio-led immersive learning and embedded coaching helped uplift the Data Engineering team to independently deploy their data notebooks and pipelines to a new federated and approved path to production

Efficiency
Infrastructure configuration changes and application deployments achieved via GitOps moved from manual review process to codified approval mechanism, with Git as both the source of truth (auditable) and the trigger for automated deployment

Accuracy
With modern engineering practices: source control, trunk-based branching strategy, GitOps deployment code collisions, and less-frequent manual errors

Forward Outlook
CareSource operationalized its approach for moving on-prem workloads to Azure cloud by leveraging Liatrio's existing Producer and Consumer Cloud Operating Model, along with reusable Terraform modules and a GitOps approach to more rapidly and safely deploying software

Accelerated/Motivated/Ignited
Through the Liatrio partnership, CareSource engineers are now enabled to move forward on their "automate everything" journey, and able to apply these principles to other initiatives across the organization

---

Liatrio paired with CareSource's delivery teams and shared their expertise with modeling and enabling iterative delivery, ticket-based engineering, trunk-based branching, and modular cloud native design patterns. Liatrio's approach to IaC and App CI/CD was easily replicated amongst delivery teams across the organization.

CareSource now has a foundation for leveraging cloud native development practices to increase their delivery capabilities, streamline their data center workloads, and focus on increasing their Azure cloud native development and IaC capabilities. The application and its infrastructure are now more available, scalable, and resilient, requiring less effort to resolve issues.

liatrio

REACH OUT AT
hello@liatrio.com

FOLLOW US ON
liatrio.com/blog