

Experienced Guides for Your
Company's Software Journey

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GLOBAL EMERGENCY RESPONSE PATIENT TRACKING MOBILE APP & HC DIRECTORY WEB EXPERIENCE

BACKGROUND

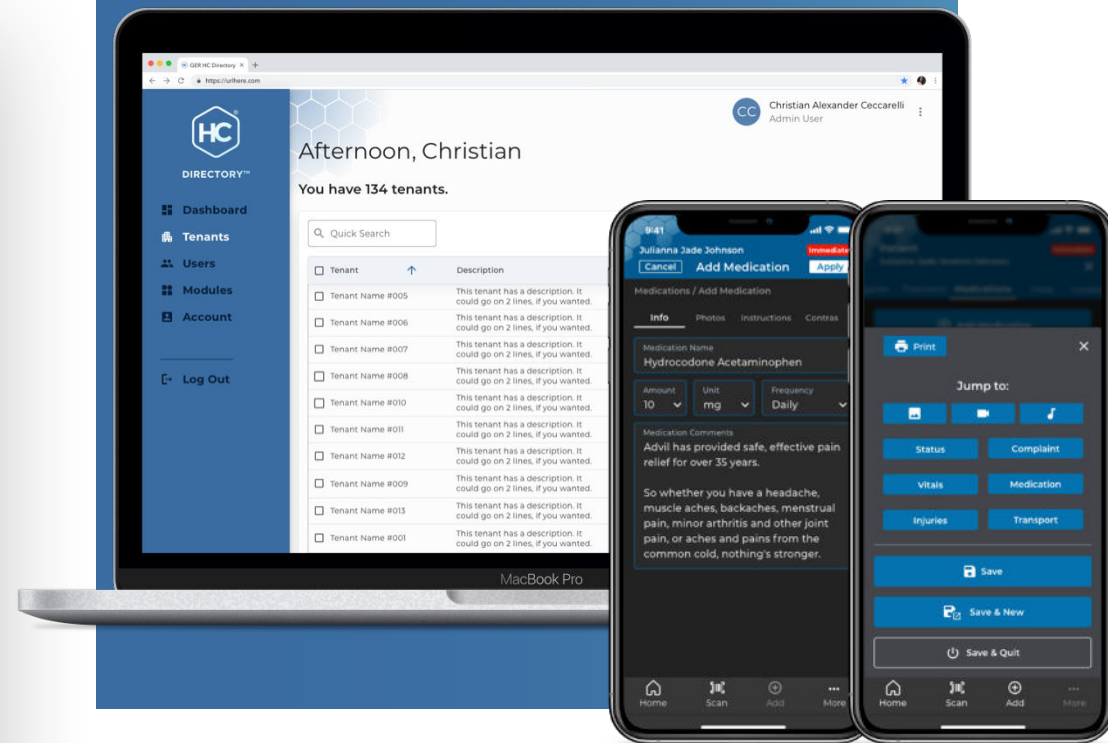
Global Emergency Response provides emergency preparedness and response technology solutions, designed to support healthcare providers, first responders, and emergency management. GER wanted to migrate their applications to a containerized microservice architecture and add capabilities for industry-standard federated authentication and single sign-on.

HC DIRECTORY

Trailhead created the HC Directory application to help track and manage GER's HC deployments. The application was built using a microservices architecture, which has become the blueprint for all new system architecture in the HC ecosystem.

HC MOBILE

HC Mobile is a cross-platform mobile app built in Xamarin. The app is used to capture patient and medical information in the field, and securely store and transmit it to the backend whenever a connection is available. Trailhead also integrated HC Mobile with the new HC Directory service and authentication infrastructure.



TECHNOLOGY

- Docker
- Duende Identity Server
- ASP.NET Core
- .NET 6
- MongoDB
- Angular
- TypeScript
- RabbitMQ
- Kafka
- Terraform

EXPERTISE

- Microservices
- Containers and orchestration
- Linux
- Message Queue
- OpenID Connect
- OAuth
- Document database
- REST APIs

BACKGROUND

Since 1980, Weather Shield Roofing Systems has been West Michigan's leading commercial roofing specialist. Weather Shield wanted to create a mobile app that roofing estimators could use to efficiently collect photos, measurements and notes while on site, and incorporate those in a web based estimation tool.

WEB + MOBILE APPLICATION

Trailhead and Weather Shield participated in a Design Workshop to gather requirements and rapidly prototype a mobile application concept.

It was important to Weather Shield that the new app not be a silo. The Weather Shield mobile app integrates with Microsoft Dynamics for it's master account data, stores collected photos in SharePoint, and allows single sign-on through Office 365.

The choice of a tablet based layout allows estimators to easily transition from their current paper based approach, and gives a sufficiently large drawing surface to be able to annotate photos directly on site in the app. Finished estimates can be immediately transmitted back to a cloud based back end for use by office personnel preparing quotes while the estimator moves on to the next job.



TECHNOLOGY

- Xamarin
- ASP.NET Core
- .NET 6
- MS SQL Server
- Dynamics 365

EXPERTISE

- Project architecture
- Cross-platform mobile
- REST APIs
- Cloud
- DevOps
- Back-end integration

BACKGROUND

Avail Technologies wanted a modern, elegant way for dispatchers to view and interact with transit assets. The system needed to support dozens of dispatchers and hundreds of vehicles, routes, and stops with high-frequency live updates and significant data throughput.

Trailhead continues to be an excellent partner to augment and complement our own internal Product Development team. They help us stay abreast of and current with the latest technologies. They are great to collaborate and work with, and they consistently deliver high quality solutions on time and within budget.

– RICK SPANGLER, CTO at Avail Technologies

DISPATCH MAP

Trailhead designed and developed a modern dispatcher map that integrated with existing systems, but provides intuitive searching, performant live mapping, and at-a-glance status visualizations for vehicles, stops, and route departures. The map combines related data in new and useful ways, and provides a modern interface for dispatching purposes.



TECHNOLOGY

- Angular Responsive Web
- ASP.NET 5 Web API
- ASP.NET SignalR
- Google Maps

EXPERTISE

- Architecture
- Design
- Project Management
- API Development
- Web Development
- Automated and Manual QA
- Performance Testing
- DevOps

BACKGROUND

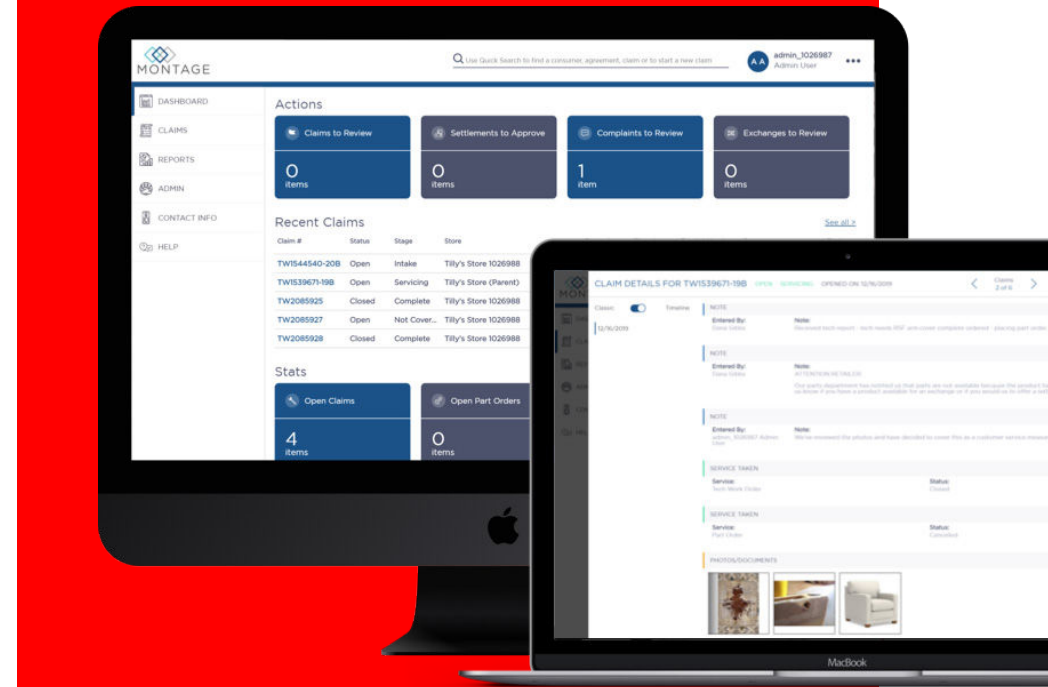
Montage Furniture Services provides furniture protection plans and claims processing services to furniture retailers and consumers.

“Trailhead stepped into a challenging project – building our new web architecture and redeveloping our portals at the same time the business was migrating from a legacy system to our new CRM solution. They were able to not only significantly improve our web development architecture but our development and deployment processes as well as the functionality and performance of our portals. The feedback from customers has been overwhelmingly positive. Trailhead has proven themselves to be a valuable partner.

– **BOB DOERKSEN**, Vice President of Technology Services at Montage Furniture Services

MONTAGE PORTAL

Montage was looking for a multi-tenant web application that was integrated with Dynamics CRM and other legacy systems. Trailhead architected the new platform, including the web portal and all of its back-end integrations, designed the UI/UX, and performed enhancements to Montage’s DevOps and other processes.



TECHNOLOGY

- ASP.NET Core
- Angular
- REST
- Entity Framework Core
- Telerik Reporting
- Dynamics/CRM Integration
- Azure Service Bus
- SignalR
- Azure DB
- Redis
- SendGrid
- File conversions with Aspose
- FileBound integration

EXPERTISE

- Project Management
- Architecture
- Web App Development
- Back end/API/Database development
- Cloud Development
- DevOps
- Process Improvements
- Legacy System Integration
- UI Design
- Manual QA

BACKGROUND

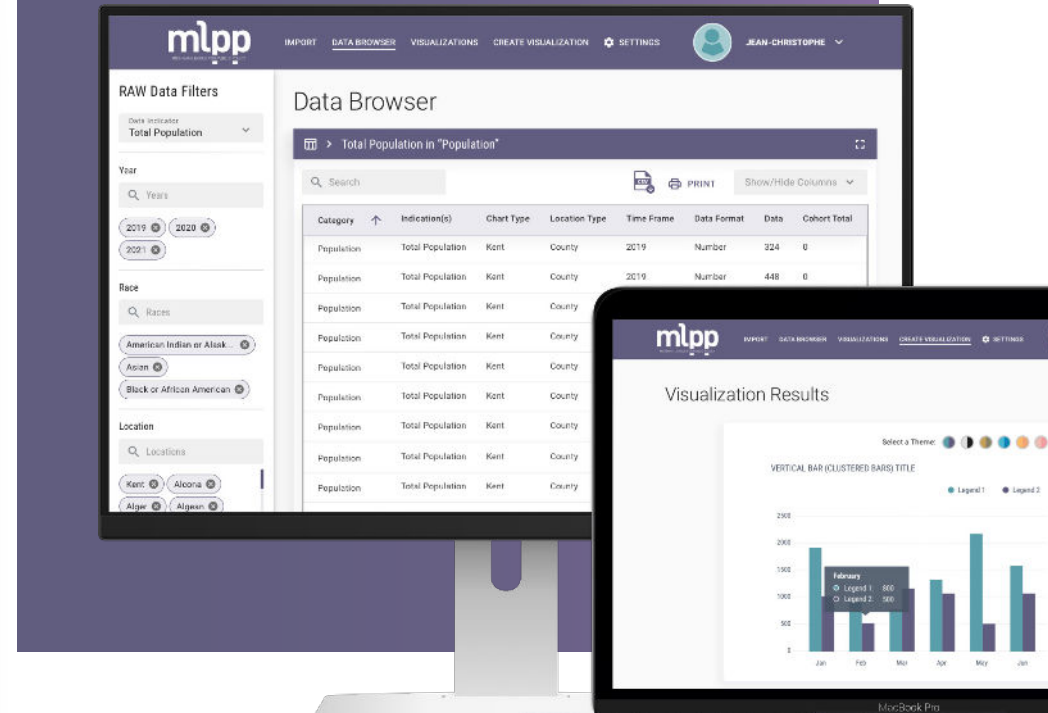
Michigan League for Public Policy (MLPP) is a non-partisan policy institute that uses a variety of statistics from dozens of sources to track and report on child welfare and poverty through its Kids Count program. MLPP wanted to centralize all their data to use in the regular creation of useful visualizations for policy makers. Over 30 years of past data needed to be imported, and an intuitive user interface created for importing all future data and performing data calculations and report.

“As a nonprofit without an in-house tech team, it was critical for us to work with a company that could translate technical processes into understandable terms. Trailhead excelled in this, and made the whole process pretty painless. In the end, they were able to create a solution where other companies came up short. We’re happy with our end product and had a great time building it.”

– **KELSEY PURDUE**, Project Director
Michigan League for Public Policy

DESIGN WORKSHOP + WEB PORTAL

The Trailhead team guided MLPP through a Design and Discovery Workshop to pinpoint the critical features required within their constrained timeline and budget. The new portal was delivered in just 10 weeks and included a centralized database, data import capabilities, data browsing features, and customizable charting and reporting. The portal produces visualizations and reports that are customizable,



TECHNOLOGY

- Angular Responsive Web
- ASP.NET 5 Web API
- MS SQL Server
- Microsoft Azure Cloud Services
- AmCharts custom charting

EXPERTISE

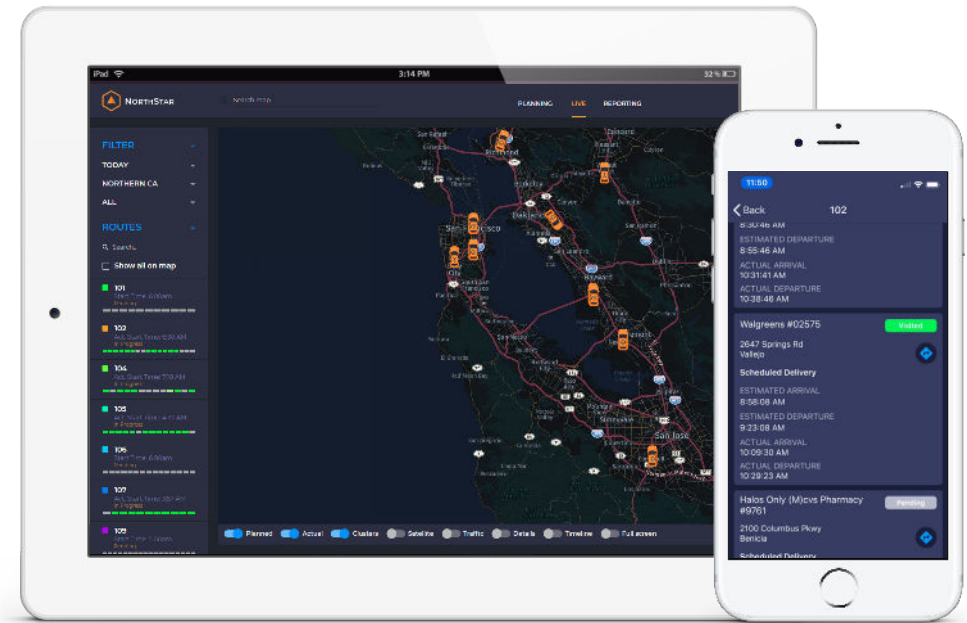
- Architecture
- Design
- Project Management
- API Development
- Web Development
- Cloud Services Setup
- Automated and Manual QA
- DevOps

BACKGROUND

NorthStar is a mobile workforce optimization platform. A dispatcher can upload work orders for route drivers, and then sequence the stops optimally for traffic, service windows and other factors. The dispatcher can view progress in real time throughout the day, and access reports and analytics afterwards. The driver uses a native mobile app to manage their stops and tasks, and can perform surveys, which allow for actions like scanning bar codes, taking pictures, getting signatures and providing other input.

WEB + MOBILE + LOGISTICS

Trailhead built the web front end, along with a back end service that uses a combination of routing and sequencing APIs paired with custom algorithms to plan and analyze routes. The solution is multi-tenant and hosted in the cloud, with tenants paying a monthly subscription fee per route. Trailhead also built a cross platform mobile app, and a completely dynamic and flexible survey feature, which allows the app to record whatever data the tenant needs to collect.



TECHNOLOGY

- Angular Responsive Web
- ASP.NET Core Web API
- ASP.NET Core SignalR
- Entity Framework Core
- Azure DB
- Notification Hubs
- Azure Queues
- Custom GPS Tracking
- REST API

EXPERTISE

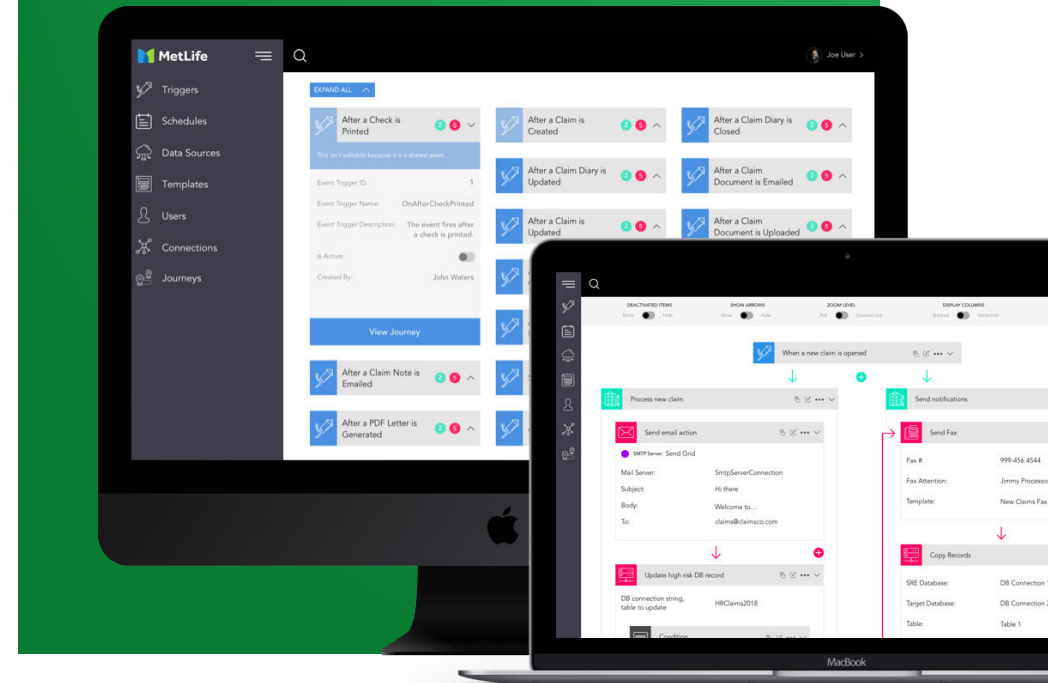
- Architecture
- Project Management
- Process Enhancements
- API Development
- Web Development
- Mobile Development
- Database Development
- Manual QA
- DevOps

BACKGROUND

JDi Data has built several insurance related products, and found a recurring need to configure actions that happen when various events occur, for instance, sending emails of faxes, updating database records, or FTPing files. They wished to build a product, FlowBot, that would be a configurable workflow engine that could serve all these needs and be sold as a standalone, multi-tenant cloud service.

FLOWBOT

Trailhead built the front end web application that allows management of FlowBot tenants and users, as well as a custom workflow design surface to allow events to be connected to tasks and actions. Trailhead also designed the UI/UX, built an API that the web app uses, assisted with porting existing workflow engine code to .NET Core, and made enhancements to DevOps and processes. The API runs in a Docker Container on Linux, and can dynamically operate with either SQL Server or MySQL databases.



TECHNOLOGY

- Angular Web
- ASP.NET Core
- SQL Server
- MySQL
- Docker
- WebAPI
- Entity Framework Core

EXPERTISE

- API
- Architecture
- Web
- Manual QA
- UI Design
- Database Development

BACKGROUND

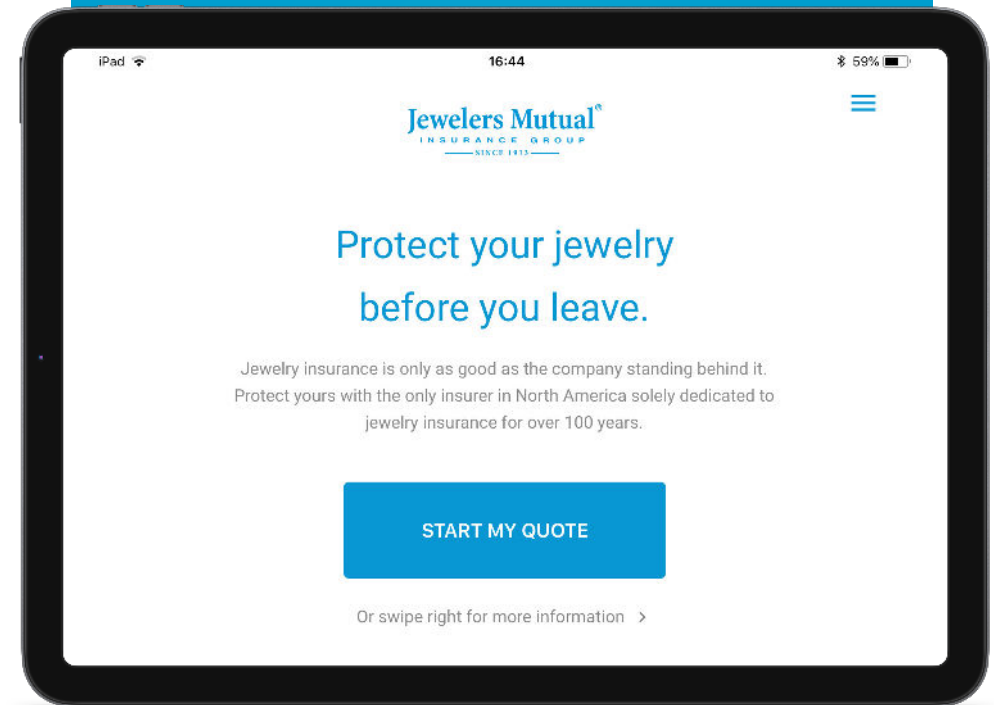
Jewelers Mutual Insurance wanted to deliver a new version of their LINK tablet app that would be built from the ground up. The new version needed to provide in-app administration, support iOS, Android, and Windows, and reflect new corporate branding standards. It would integrate with their Salesforce implementation and existing Jewelers Mutual APIs.

Trailhead provides unparalleled agility in execution and scaling to have the right level of resources to deliver quality technology. Their proactive approach in seeing the bigger picture is welcomed and uncommon. Trailhead's on time and on/under budget estimates are consistently met – I always clearly understand what I can expect from them.

– **BENJAMIN DEBOER**, Director, Corporate Innovation at Jewelers Mutual Insurance

CROSS-PLATFORM TABLET APP

Trailhead designed and developed a cross-platform tablet app allowing for significant code sharing between the iOS, Android, and Windows. Trailhead also assisted with Salesforce API development, and added DevOps to their deployment process.



TECHNOLOGY

- Xamarin.Forms (iOS, Android, Windows apps)
- Azure API Management
- Salesforce Custom APIs
- Microsoft App Center

EXPERTISE

- Architecture
- Project Management
- Salesforce API Development
- DevOps
- Manual QA
- App Store Deployment

BACKGROUND

Avail Technologies builds software and hardware systems for every aspect of public transit. Their driver interface application, the Mobile Data Terminal, ran on legacy platforms that were becoming difficult to update and maintain. Avail wanted to upgrade the MDT application to the latest technology and leverage the platform flexibility that .NET Core and Angular offer.

Trailhead continues to be an excellent partner to augment and complement our own internal Product Development team. They help us stay abreast of and current with the latest technologies. They are great to collaborate and work with, and they consistently deliver high quality solutions on time and within budget.

– RICK SPANGLER, CTO at Avail Technologies

TOUCHSCREEN WEB APP

Trailhead helped design and develop a modern touch interface web application that closely resembled the legacy application, but built it using the latest technologies. The new architecture allowed new capabilities and alleviated the constraints of the legacy system.



TECHNOLOGY

- Angular Responsive Web
- ASP.NET Core Web API
- ASP.NET Core SignalR
- REST
- NgRx

EXPERTISE

- Architecture
- Project Management
- API Development
- Web Development
- Automated QA
- Manual QA
- DevOps

BACKGROUND

Jewelers Mutual Insurance wanted an interactive holographic kiosk for customers in retail jewelry stores allowing them to view custom jewelry as a 3D hologram. With Holojem, users can interact with the 3D models and share them with friends.

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— **BENJAMIN DEBOER**, Director, Corporate Innovation at Jewelers Mutual Insurance

KIOSK + WEB + AZURE CLOUD

Trailhead designed and developed a scalable and distributed network of Windows 10 touchscreen kiosks, including remote administration and content delivery via the cloud. Jewelers can use a web application to manage their catalog, and content is immediately distributed to their kiosks.



TECHNOLOGY

- Windows 10 / UWP
- Azure DB
- ASP.NET Core WebAPI
- Entity Framework Core
- Angular Responsive Web
- Azure CDN, Verizon Secure VPN
- Azure B2C Authentication

EXPERTISE

- Architecture
- Project Management
- Windows Development
- Web Development
- Back-End / API / Database Development
- Cloud Deployment

BACKGROUND

Prein and Newhof is a respected engineering firm doing civil engineering, environmental consulting, asset management, grants and funding, and more. They needed technical experts to update a legacy app built for project management through a custom database.

WEB + MOBILE APPLICATION

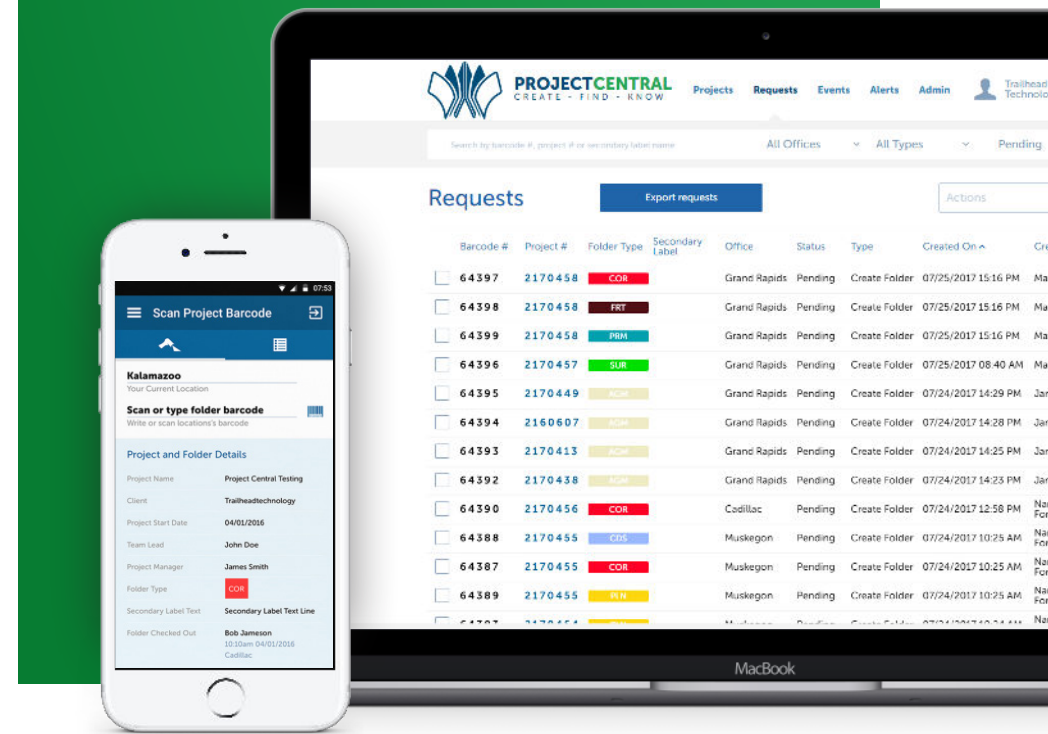
Trailhead interviewed users to determine the requirements for a replacement system and built a modern web application that would replace two existing systems. The team also implemented a data migration strategy and created a mobile cross platform companion app that would streamline workflow.

TECHNOLOGY

- Angular Responsive Web
- Xamarin iOS and Android
- SQL Server
- GPS
- Bar Code Scanning
- ASP.NET Core WebAPI
- Entity Framework Core

EXPERTISE

- Project Management
- Architecture
- Mobile & Web App Development
- Manual QA
- UI Design
- Back-End / API / Database Development
- Data Migration



BACKGROUND

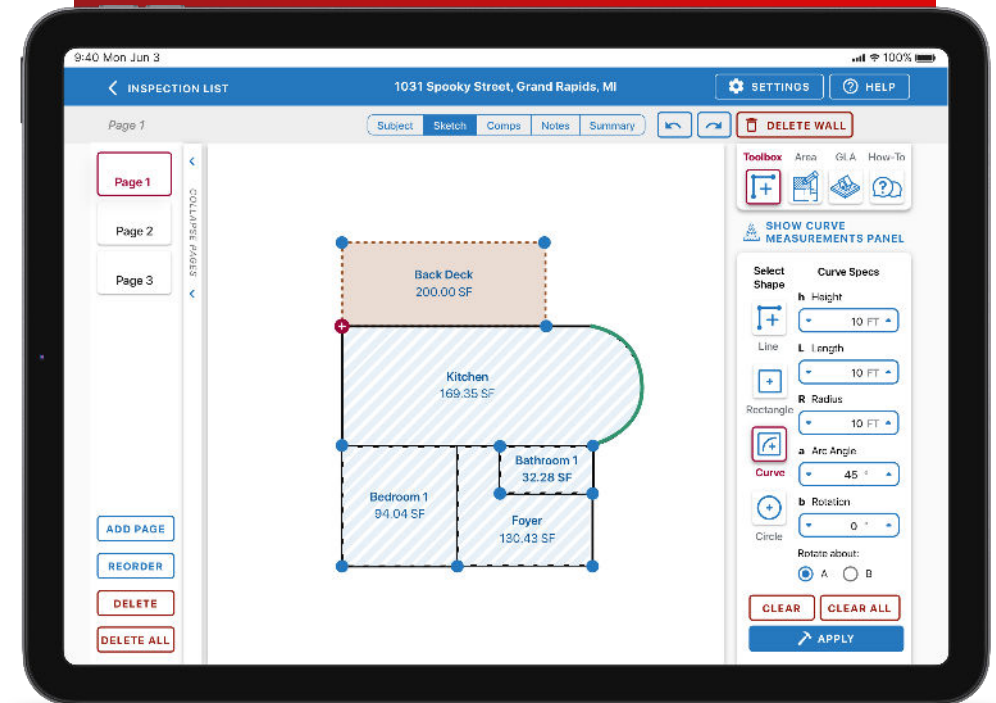
Bradford Technologies specializes in providing appraisal technology for the real estate industry. With current software about to expire, they needed a team that could guide them in the vision and development of a new tablet appraisal application.

The guys at Trailhead were an excellent group to work with...One of our requests was that it had to be super intuitive with a WOW type UX. The developers at Trailhead came through in flying colors with an app that exceeded everyone's expectations.

– JEFF BRADFORD, CEO at Bradford Technology

TABLET APPLICATION

Trailhead worked with business owners and appraisers to create a state-of-the-art iPad appraisal app, including a finger based property sketcher and a series of custom data entry features to streamline workflow, all integrated with the clients existing API.



TECHNOLOGY

- Xamarin iOS
- Powerful Custom Sketcher
- Image Management
- REST
- Custom Streamlined Form Input

EXPERTISE

- Project Management
- Architecture
- Mobile App Development
- Manual QA
- UI Design
- Legacy System Integration

BACKGROUND

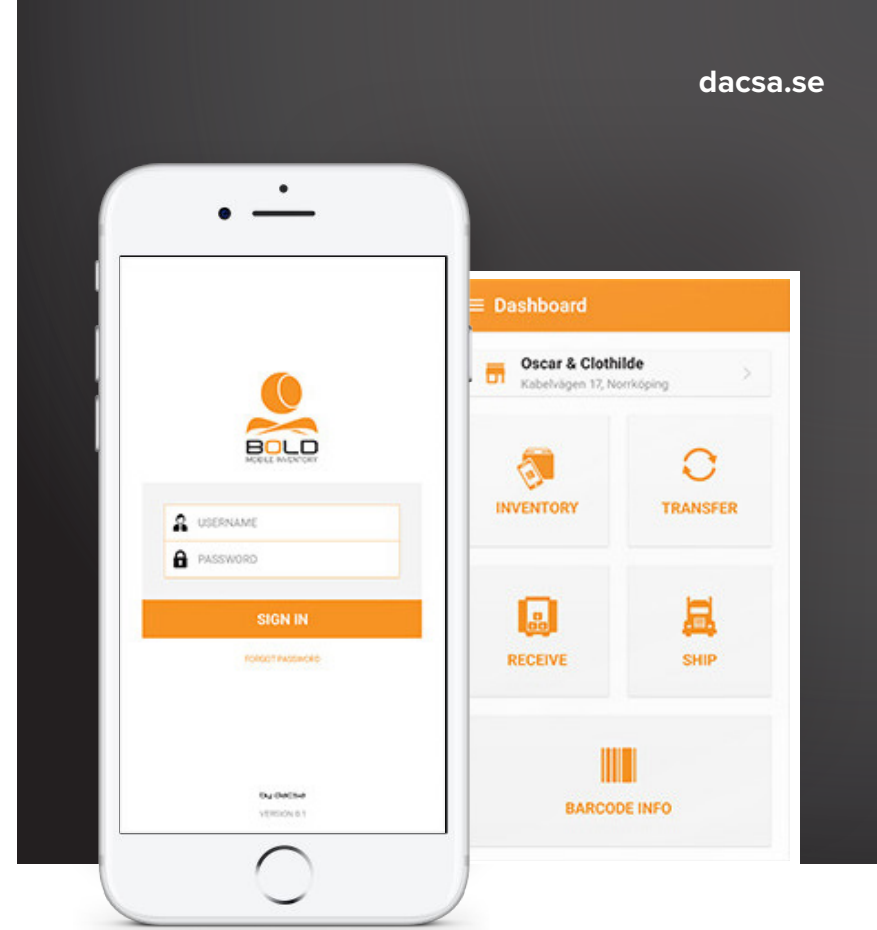
Dacsa is a Swedish software company that developed the BOLD eCommerce Suite for purchasing, selling, fulfilling, and delivering orders. They needed external expertise to build a mobile component that would seamlessly integrate with their product middle tier.

Trailhead has helped us develop an integrated mobile component and a platform for further mobile development – an area where we have no experience and not enough time for research and training.

– **ANDERS JERKERUS**, CEO at Dacsa AB

MOBILE + WEB APPLICATION

Trailhead augmented Dacsa's desktop system with an iOS and Android app for managing inventory and a companion web based sales dashboard. Features of the app integrated with their existing back end system and services.



TECHNOLOGY

- Xamarin Android
- Angular Responsive Web
- Web API 2
- Entity Framework
- SQL Server
- C#
- Bar Code Scanning
- GPS tracking

EXPERTISE

- Project Management
- Architecture
- Mobile & Web App Development
- Automated & Manual QA (Web and Mobile)
- UI Design
- Back-End / API / Database Development
- Legacy System Integration
- Data Migration
- Cloud Deployment
- Process Enhancements

BACKGROUND

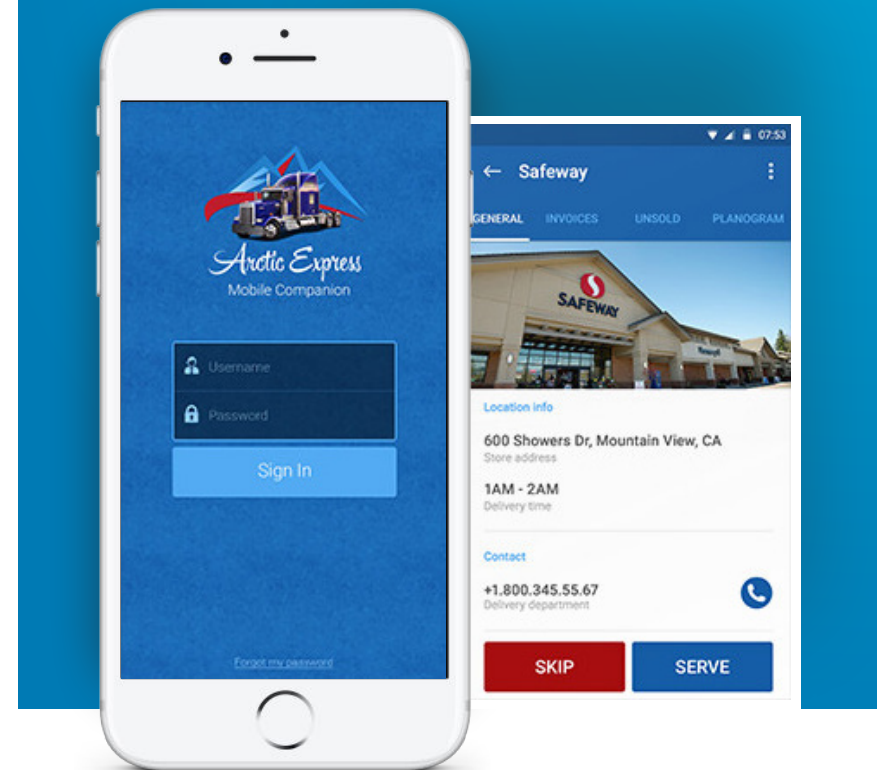
Arctic Express is Nestle's largest and most efficient Small Format Ice Cream and Frozen Food Distributor in the United States. They needed greater efficiency and logistics insights with their mobile workforce to track shipments and assist drivers in delivering products.

The Trailhead team developed a cutting edge GPS mobile application that has dramatically improved the visibility that we have into our distribution business. The team is professional, highly skilled, and specialized in developing custom software solutions that move the needle for your business.

– JOHN KEANE, VP at Arctic Express

MOBILE + WEB APPLICATION

Trailhead built a custom Android mobile inventory app to complement and connect with Arctic Express's existing DSD software (through API integration), allowing dispatch to see drivers' location in real time (with GPS tracking), assist with directions, and view ongoing operations from the Dispatch web app.



TECHNOLOGY

- Xamarin Android
- Angular Responsive Web
- Web API 2
- Entity Framework
- SQL Server
- C#
- Bar Code Scanning
- GPS Tracking

EXPERTISE

- Project Management
- Architecture
- Mobile & Web App Development
- Automated & Manual QA (Web and Mobile)
- UI Design
- Back-End / API / Database Development
- Legacy System Integration
- Data Migration
- Cloud Deployment
- Process Enhancements

BACKGROUND

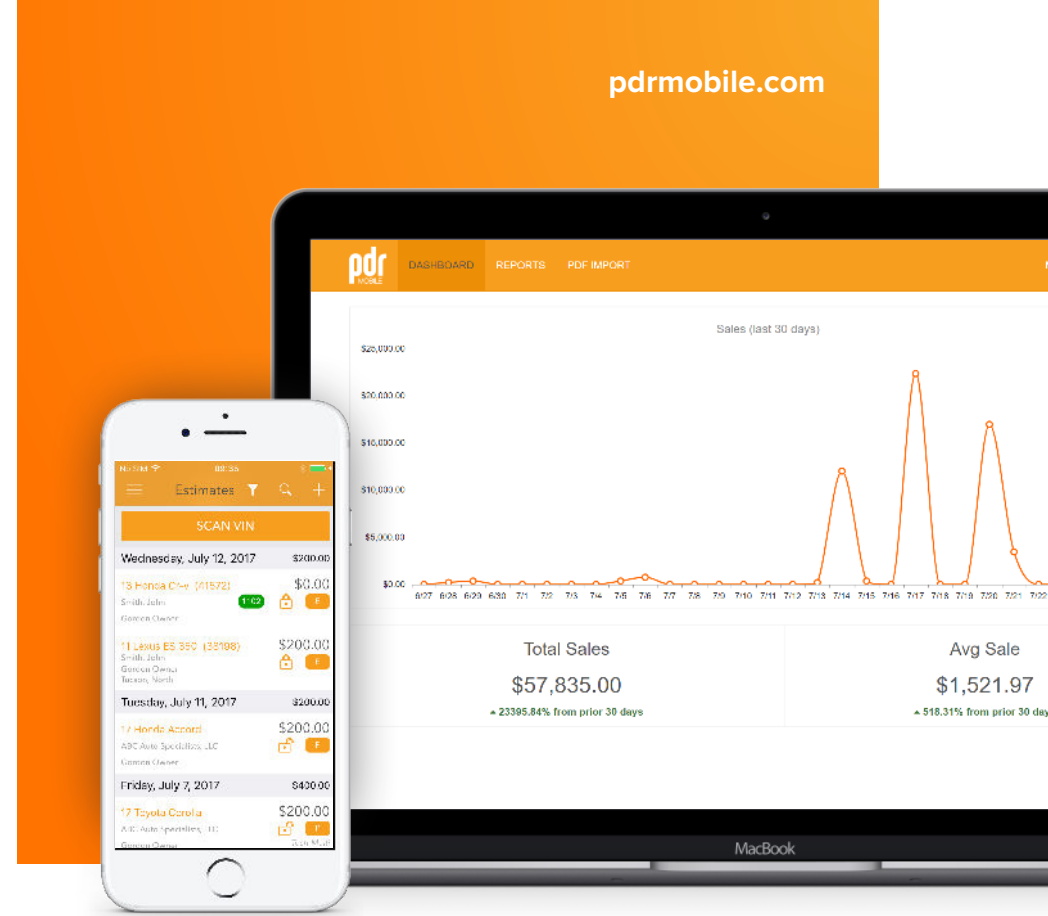
PDR Mobile provides paintless dent repair (PDR) businesses to estimate, repair, invoice and track payments from a mobile device. They needed a white label product that would integrate with their partners systems, be branded for partners, and include expanded features.

In Trailhead we found a long term partner that understands our business needs, can help us make technology choices, and swiftly implement new features across our solution. They helped us integrate our system with a B2C partner and streamlined our development process, continuous integration, and cloud deployment.

– GORDON KENASTON, CTO at PDR Mobile

MOBILE + WEB APPLICATION

Trailhead worked with PDR's existing mobile app, evolving the product with new features and across various technology components in order to make it ready for partner systems.



TECHNOLOGY

- Xamarin Android and iOS
- ASP.NET
- Entity Framework
- SQL Server
- Web API
- XML Parsing

EXPERTISE

- Project Management
- Architecture
- Mobile & Web App Development
- Manual QA
- UI design
- Legacy System Integration
- Back end/API/Database Development
- Cloud Deployment
- Process Enhancements

BACKGROUND

Drug Free Sport's AXIS platform is used by multiple sports associations, including the NCAA, NAIA, PGA Tour, and LPGA, to inform athletes about banned substances in supplements and medications. The legacy platform was hard to maintain and no longer met users' needs.

Trailhead exceeded our expectations for the project. They are professionals in helping your vision come to reality as well as technology tools you didn't know were possible! Our launch was seamless and Trailhead made the process enjoyable! We are so happy we partnered with Trailhead!

– ANNA BOTTOMS,

Senior Education Program Manager

WEB APPLICATION

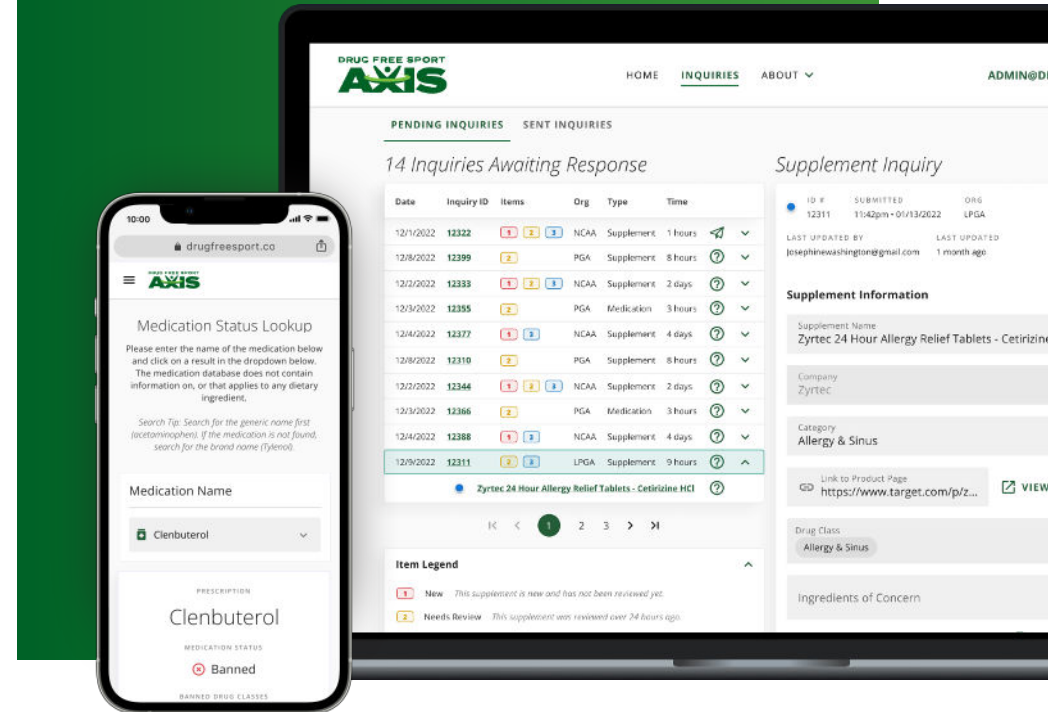
Trailhead and Drug Free Sport International collaborated closely in a workshop to identify legacy application features and define the requirements for the new release of AXIS. Trailhead designed the UI and user experience, and architected it utilizing .NET 6 and React hosted in AWS.

TECHNOLOGY

- React
- .NET 6
- AWS
- SQL Server
- AWS Cognito

EXPERTISE

- Architecture
- UI/UX Design
- Project Management
- API Development
- Web Development
- Cloud Services Setup
- DevOps
- QA



BACKGROUND

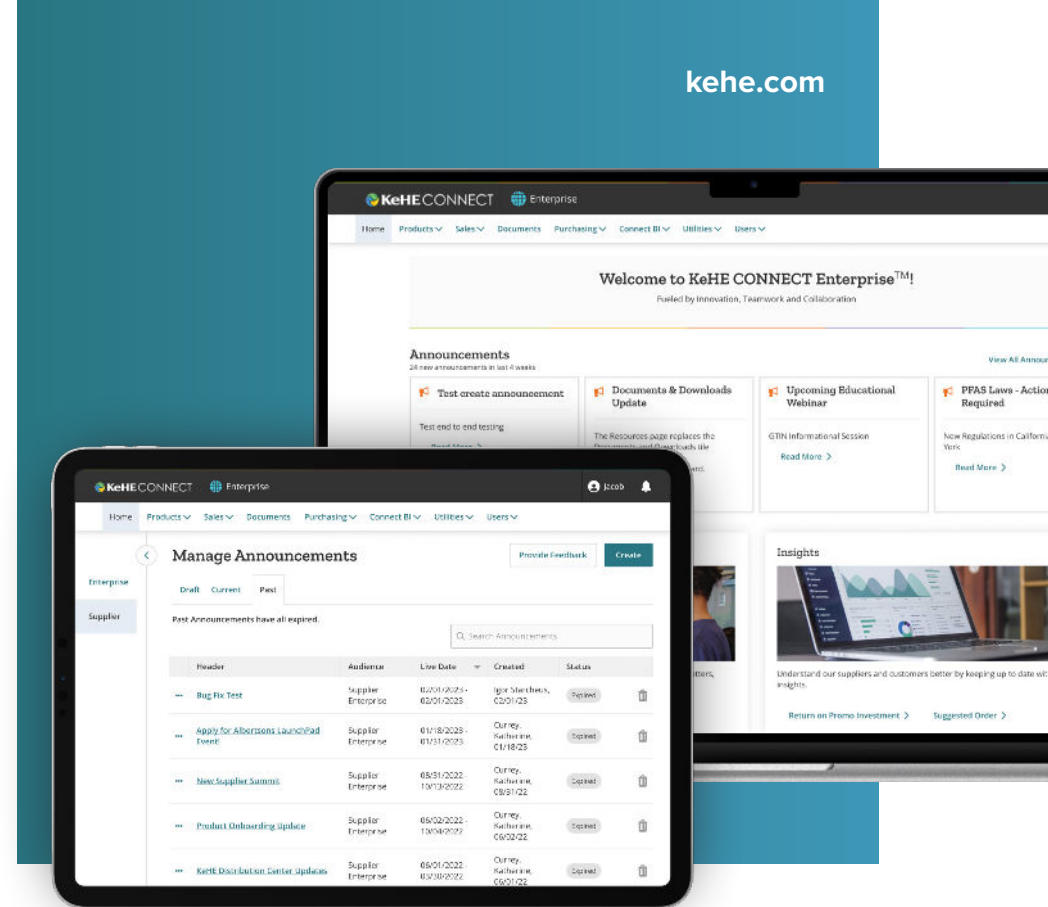
With more than 6,800 employee-owners and a 16-distribution center network across North America, KeHE is one of the largest and most respected pure-play grocery and natural distributors in the nation.

Trailhead quickly picked up our processes and architecture, and made some great additions to the frameworks we had in place. They delivered the system, including front and back end subsystems and a migration of legacy data on time and on budget. Trailhead worked seamlessly with our designers, business analysts and architects to independently deliver a high quality microservice.

– **JOE NICOTRA**, Sr Manager, Engineering IT

WEB APPLICATION

Work included a new back end microservice and a web front end for two end user portals and one administrative set of screens, as well as migration of legacy data.



TECHNOLOGY

- AWS Lambda
- AWS Secrets Manager
- AWS SQS
- AWS SNS
- AWS S3
- Duende Identity Server
- .NET 6
- ASP.NET Core
- Entity Framework Core
- PostgreSQL
- Angular
- Progress Kendo UI

EXPERTISE

- Project Management
- Microservices Architecture
- API Development
- Web App Development
- Front-end Unit Test Coverage
- Back-end Unit Test Coverage
- Manual QA
- DevOps



Our Services

Requirements Discovery

To create a strong foundation for the project, we facilitate simple discussions with key stakeholders to identify the big and small decisions that may affect the scope and cost of the system, and document your input.

User Interface / User Experience

Our UI/UX experts create interactive, clickable mockups for web and mobile apps, so you can engage in the experience of the design before writing any code. The design also involves usability, navigation flow, and responsive design.

Audits

We perform a “CTO for hire” style audit of your applications, data flows, personnel, security, and documentation, in order to give you a final results document with recommended actions.

Full Service or À la carte

We have the resources, the know how and the track record to take on your whole project or help with aspects of this process.

Architecture + System Design

In our agile process, design and development progress in tandem, but the overall system design and architecture is set up front, informed by the design and requirements to create a blueprint.

Migrate Legacy to Modern

We have worked with legacy technologies, and understand them well. We can help you migrate your legacy systems to cross platform .NET Core, wholesale or piece by piece, and train your team on the new technology.

Development + Testing

This is the man hour intensive part of the project, where the user stories are translated through the UI mockups and architecture to working, tested code, allowing a constant feedback loop, with short sprints where you can course correct.



For more information, visit
trailheadtechnology.com

Our Leadership Team



John Waters

John is a three time Microsoft MVP and experienced technology leader, entrepreneur and software architect extraordinaire. John has spent the last three decades architecting and implementing a range of high performance business solutions. He is proficient in modern technology and speaks at conferences worldwide.



J. Tower

Jonathan "J." Tower is a Microsoft MVP with over twenty years of software industry experience. He loves solving problems and the creative aspects of software development, as well as sharing what he's learned with others and helping to build community. J. speaks at conferences all over the world, sits on several non-profit boards, and organizes a professional software conference.



Josh Eastburn

Josh is a Telerik Developer Expert, Microsoft Technology Specialist, and an experienced software architect with over twenty years of experience as a software consultant. Josh enjoys using the latest technology to solve business problems and has worked with various industries including distribution, logistics, financial services, transportation, and education.



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