



BROAD
ANALYTICS ASSOCIATION

BAA Datathon Case Competition
Fall 2025
Case Materials



Welcome!

In recent years, the intersection of supply chain resilience and regional manufacturing has moved to the forefront for businesses and communities. This Datathon case invites you to engage with the Michigan Logistics Coalition’s “Connected Midland” initiative—a network of companies spanning manufacturing, warehousing, and transportation. As a shared platform reflecting the region’s logistics ecosystem, ChainSight embodies both the challenges and the promise of rebuilding modern supply chains through data. Using the provided datasets and your critical thinking, uncover the story behind ChainSight and chart a clear path to a more connected, resilient Midland.

Datathon Case Study

Michigan Logistics Coalition – “Connected Midland” Initiative

Instructions

You are participating in a datathon organized by the Broad Analytics Association at MSU. This is a team-based simulation of a real-world consulting problem involving data and supply chain challenges.

Presentation Time: 10 minutes per team, followed by Q&A

Slides: Limit to 10 content slides (you may include appendix slides)

Tools: Any (PowerPoint, Google Slides, Tableau, Excel, etc.)

Deliverable: Your recommendations for the Michigan Logistics Coalition

Judging Criteria: Your team will be evaluated based on the following weighted categories:

- **Problem Understanding (25%)** – Have you correctly identified and prioritized the key problems at MLC?
- **Data Insights & Analysis (25%)** – Did you use the provided datasets to uncover meaningful trends or errors?
- **Recommendations & Feasibility (25%)** – Are your recommendations practical and sustainable given the constraints?
- **Presentation & Communication (15%)** – Are your findings clearly structured, concise, and persuasive?
- **Creativity & Innovation (10%)** – Did you go beyond obvious fixes and suggest new or unique approaches?

You may conduct external research and collaborate in teams of 1–4 students. The judges are not grading you on technical sophistication, but on your ability to frame problems, use data, and communicate clearly.

Recommended tools include: Tableau, PowerBI, Excel, Python (Pandas, NumPy), GenAI

Background – A Region in Recovery

Midland County, Michigan, was once a thriving industrial area supporting Tier 2 and Tier 3 automotive suppliers. However, the COVID-19 pandemic triggered a wave of shutdowns. By the end of 2021, many small and mid-sized suppliers had closed or reduced operations. Logistics networks became unreliable, inventory levels became unstable, and customer service declined.

In 2022, a nonprofit group called the Michigan Logistics Coalition (MLC) was created to rebuild the region's supply chain ecosystem after years of fragmentation and disruption. MLC includes 15 small and mid-sized member companies from across the logistics value chain - ranging from plastics manufacturers and Tier 3 auto suppliers to regional warehousing providers and last-mile carriers.

Member companies chose to engage with MLC and the ChainSight platform for several key reasons:

- Access to shared forecasting data from nearby suppliers and customers to improve demand planning
- Collaborative logistics opportunities, such as joint trucking routes or shared warehouse capacity
- Technical assistance and grant-funded tools (like ChainSight) to modernize their operations at low cost
- Increased visibility into supply chain risks (e.g., shipment delays, supplier backlogs)
- A stronger collective voice in applying for state and federal supply chain resilience grants

For many of these smaller firms, MLC represented a unique opportunity to level the playing field with larger competitors—without the need for costly individual investments in software or consultants.

The “Connected Midland” Initiative

To accelerate recovery and modernize supply chain coordination, the Michigan Logistics Coalition (MLC) launched a digital initiative called Connected Midland in early 2023. At its core is a web-based platform named ChainSight, developed in-house with grant funding from the State of Michigan.

ChainSight was designed to provide shared data visibility, forecasting accuracy, and operational coordination for MLC’s 15 member companies — all small and mid-sized firms across manufacturing, warehousing, and transportation.

ChainSight Features and Goals

The platform was built to:

Aggregate Supply Chain Data

Securely collect and structure data across:

- Sales orders
- Inventory levels
- Demand forecasts
- Shipment and delivery status

Improve Forecast Accuracy

Use basic machine learning (Facebook Prophet) to predict demand trends by SKU and region, and highlight discrepancies between forecasted and actual demand.

Track Logistics Performance

Monitor delivery timelines across carriers and regions, flag delays, and help identify on-time delivery issues.

Identify Collaboration Opportunities

Spot overlapping delivery routes, underutilized warehouses, or partially loaded trucks to encourage cost-sharing among members.

Flag Disruption Risks

Integrate third-party data (e.g., weather, port delays, fuel price spikes) to detect potential disruptions early.

Early Success: Delta Plastics

In its early months, ChainSight showed real promise. Delta Plastics, a Tier 3 auto parts supplier, fully adopted the system within the first six weeks. By consistently uploading structured sales, forecast, and inventory data, Delta unlocked meaningful insights almost immediately.

ChainSight's forecasting module detected a recurring pattern of under-forecasting for a key product line, leading to repeated stockouts and urgent expedited shipping. Using ChainSight's forecast vs. actual dashboards, Delta adjusted safety stock thresholds and improved planning accuracy.

Within one quarter, Delta achieved:

- 45% reduction in stockouts
- 32% cut in expedited freight costs
- Increase in on-time delivery rate from 76% to 91%

Delta Plastics became a strong internal advocate for ChainSight, even presenting their success in a member town hall. However, most companies struggled to replicate these outcomes — not because ChainSight lacked potential, but because it was plagued by execution and support challenges.

Challenges That Emerged

Despite early success stories, ChainSight soon faced a range of technical, organizational, and adoption issues:

1. Inconsistent Inputs

Member companies submitted data in different formats — some in Excel, others

in PDFs or emails. Product IDs weren't standardized, fields were missing, and some companies submitted weekly while others uploaded monthly. ChainSight lacked automated validation, forcing all cleaning to be done manually by MLC's lone technical staff.

2. Delayed Updates and Manual Processes

Data ingestion happens only once per day. The system lacks real-time syncing, and companies cannot directly update records. Rahul — the platform's developer and tech lead — manually ingests files and regenerates forecasts and dashboards on a fixed schedule. This results in delayed insights and stale dashboards.

3. Forecast Model Limitations

ChainSight uses the Facebook Prophet model for time-series forecasting. While simple and interpretable, it struggles with:

- Sparse or noisy sales data
- Sudden demand shifts (e.g., new products, promotions)
- Short lifecycle SKUs

The result is frequent over/under forecasting and skepticism among users.

4. Low System Usability

The front-end dashboard lacks self-service features. Users can't explore data deeply, customize views, or adjust model parameters. Many member companies still rely on Rahul to generate PDF summaries or screenshots to share internally.

5. Overdependence on One Person

All data integration, model training, error handling, and report generation depend on Rahul Mehta, MLC's only technical employee. When Rahul is unavailable, the entire ChainSight ecosystem stalls. No one else has access or training to support users, fix bugs, or update dashboards.

6. Non-Technical Barriers: Culture, Collaboration, and Trust

While technical issues have slowed ChainSight's adoption, several non-technical challenges have also contributed to its decline — especially around company culture, inter-company dynamics, and communication.

- **Limited Trust in Shared Systems:** Many smaller member companies are hesitant to share operational data — even in an anonymized format — for fear that competitors or larger members may gain an advantage.
- **Lack of a Data-Driven Culture:** Forecasts are often based on gut feel, and few companies have analysts or digital tools.
- **Low Cross-Company Collaboration:** There is little direct interaction between companies, and knowledge sharing is minimal.
- **Overreliance on MLC as a Service Provider:** Instead of learning how to use ChainSight independently, companies depend entirely on Rahul to deliver insights.
- **Communication Gaps:** Onboarding and training are lacking. Some users don't know how to interpret the dashboards or how their data impacts performance.

7. Grant Funding at Risk

The State of Michigan's grant is contingent on three key KPIs:

- Increase member company engagement to 80%
- Improve forecast accuracy across the platform
- Reduce late shipments by 20%

If progress is not shown in the next three months, funding will be pulled. This would likely result in the project shutting down.

Current State of the Organization

MLC has just two full-time staff:

- **Karen Lopez** – Interim Director, focused on funding, public relations, and outreach
- **Rahul Mehta** – Technical Manager, responsible for all things ChainSight (build, support, training, reporting)

Karen is focused on securing another round of funding. Rahul is overwhelmed by technical work, data management, and member support. ChainSight adoption is falling, and trust in the platform is at risk.

Your Role

You are part of a consulting intern team brought in to analyze the problems, use available data, and deliver recommendations to improve the project.

You will receive 3 simplified CSV datasets:

- **orders.csv** – Order data, forecasted and actual quantities, on-time delivery
- **company_profiles.csv** – Info on company engagement, upload format, support usage
- **inventory_forecasts.csv** – Weekly SKU-level forecasts vs. actual demand

Your Mission

In your 10-minute presentation, address the following:

1. Identify the Core Problems

- What are the root causes of the current failures at MLC and ChainSight?
- Which problems are organizational? Which are technical?

2. Recommend Data-Driven, Sustainable Solutions

- How can ChainSight be improved without overloading Rahul?
- How can you improve data quality and forecast accuracy?
- How might you boost adoption among disengaged companies?
- What metrics should MLC track?

3. Prioritize

Imagine you were hired as an intern or analyst at MLC for a full year — but you could only work on one major problem.

- What issue would you prioritize, and why is it the most important one to solve?

This question is about strategic thinking. The most successful teams will:

- Identify which problem has the greatest impact on the ChainSight initiative
- Consider time and resource constraints
- Think through what can realistically be accomplished in one year
- Explain how solving that issue might unlock or enable other improvements