

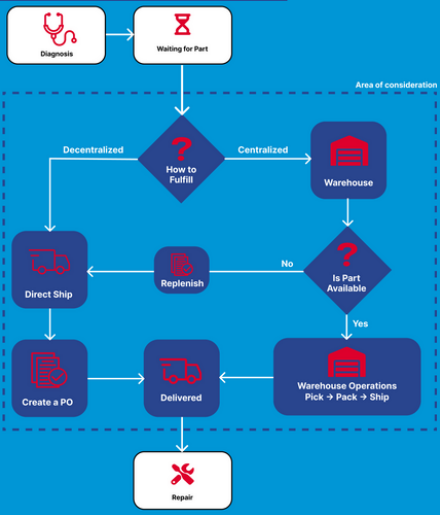
## Client Background

**PepsiCo Equipment Service Network**

Provide support and maintenance for Pepsi Dispensing Equipment across U.S. & Canada

150 Suppliers | 300 Locations | 25,000+ SKUs | 2,000 Ship-to Locations

## System Model



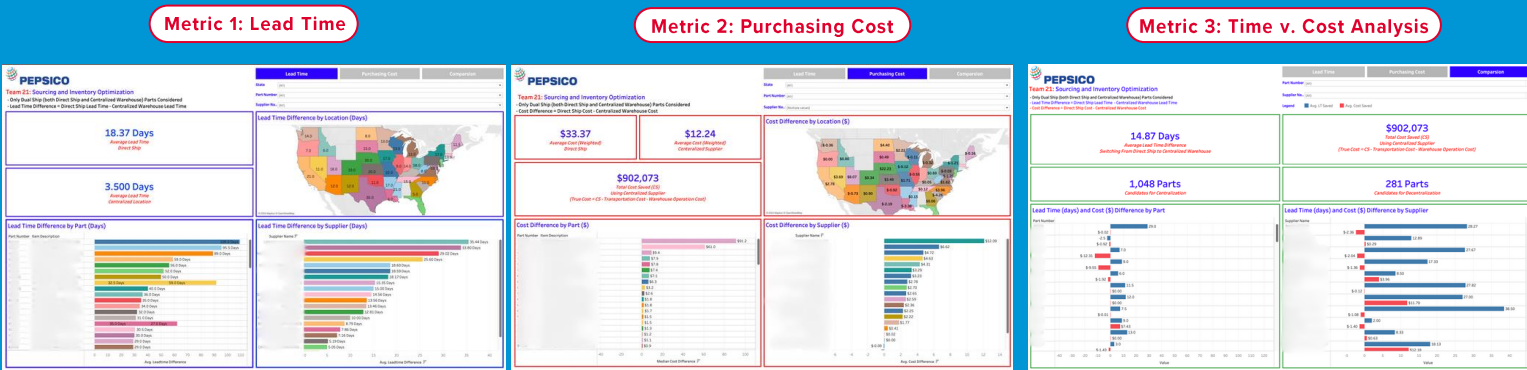
## Problem Statement

- PepsiCo Equipment Services (PES) wants to evaluate the effectiveness of its recently centralized procurement and distribution model for spare parts.
- The aim is to develop data analysis systems that not only enhance visualization but also pinpoint optimization opportunities.
- This will present the opportunity for further expansion of this model to other SKUs and departments within PepsiCo.

## Approach

- Stakeholder Interviews**
  - Provided an assessment of the effectiveness of the centralized procurement and distribution model.
  - Revealed a significant gap: PES lacks robust systems to effectively analyze performance metrics such as Lead Time & Purchasing Cost.
- Process Flow Mapping**
  - Visualized the complete flow of processes, from initial part requisition to final delivery.
  - Helped identify interdependencies and potential points of failure that were not be obvious from a general analysis.
- Data Analysis**
  - Integrated a high-level data-driven inventory analysis of the raw data.
  - Used Python to concatenate and process outputs as CSV, and Tableau to highlight KPIs and specific performance metrics using CSVs.

## Results



\*Analyzed data set contains only dual sourced SKUs

## Discussion

**Direct Ship** ↓ **Centralized Supplier (Sellersburg)**

**Average Time Difference**

2021 : 12.69 Days  
2022 : 14.87 Days  
2023 : 17.31 Days

Duration between ordering a shipment and its delivery

**Average Cost Difference**

2021 : \$748,501  
2022 : \$902,073  
2023 : \$2,386,288

Expenses linked with purchasing goods/services

## Recommendations

- Strategic Centralization**
  - Centralize areas that intersect with cost & time savings to streamline operations and save additional costs.
  - Consider decentralization for parts with negative cost & time differences.
- Leverage Dashboard Insights**
  - Utilize dashboard info to identify opportunities for purchasing cost & lead time savings that don't intersect.
- Explore Lead Time Improvements**
  - Distance & time saved are not directly correlated, indicating potential supplier operational issues.
  - Enhance lead time beyond centralization by addressing operational inefficiencies.