



# Aimpoint

Digital

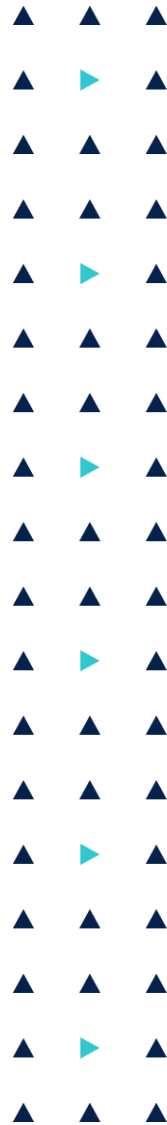
## A Holistic Approach to Supply Chain Optimization

Supply Chain Optimization Workshop

Yash Puranik



# Agenda



01

Aimpoint Digital



02

Strategy sets the tone for success



03

Case studies

# Meet your speaker



## Yash Puranik

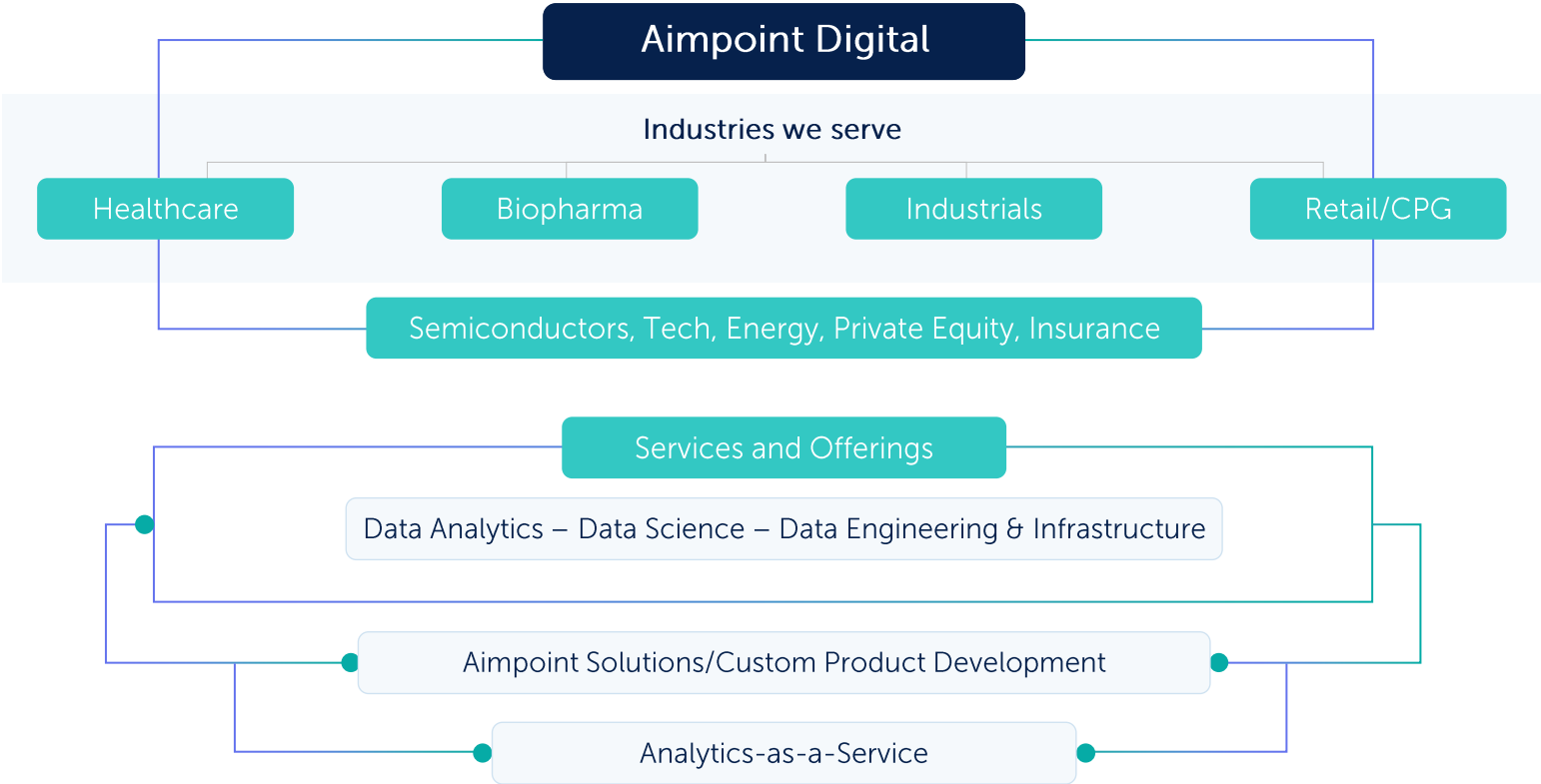
Principal Data Scientist  
Boston, MA

---

- PhD in Chemical Engineering
- Optimization theory, algorithms and commercial solver development
- Delivering optimization projects across multiple industries

# Aimpoint Digital

Our team consists of top-tier analytics experts, digital consultants, data scientists, and engineers who collaborate with our clients to drive sustainable economic growth from digital, data, and analytic capability development



## Our Firm

Extensive track record delivering data and analytic engagements across the project continuum; from large scale enterprise transformations to advanced use case solutioning and continuous support

### Three key elements of differentiation:

- 01 Level of Expertise
- 02 Client First Mentality
- 03 Service Economics

Our team has worked for some of the top management consulting & analytics firms in the world (e.g., BCG, Deloitte, PwC, The Information Lab, Accenture, etc.)

# Our Areas of Expertise

Advisory + Enablement + Execution

## Data Analytics

- Self-Service Analytics
- Data Visualization
- Tableau / Power BI Training
- Digital Process Automation
- API/Connector Development
- Custom Tools/Macro
- Spatial Analytics

## Data Science

- Dataiku Training & Enablement
- Predictive Modeling
- Machine Learning Engineering
- AI Systems
- Mathematical Programming
- Simulation

## Data Engineering and Infrastructure

- Systems and Process Analysis
- Data Modeling
- ETL / ELT Pipeline Dev
- MLOps
- Data Architecture
- Infrastructure Modernization
- DataOps & FinOps

## Analytics Strategy

Digital Strategy & Roadmap  
Enablement

Strategy  
Platform

Operating Model  
Governance

Our  
Partners

alteryx



+ a b l e a u



dbt

snowflake

GUROBI  
OPTIMIZATION



Aimpoint  
Digital

# Aimpoint members in the audience

Experienced in advanced analytical applications across many industry verticals



Will Miller  
CEO & Founder



Christa Margossian  
Head of Data Science



Max Benjamin  
Head of Data Analytics



Anusheela Banik  
Senior Data Scientist



Edward Valentine  
Lead Data Scientist



JD Love-Epp  
Principal Analytics  
Consultant

## Diverse educational background

- Industrial Engineering
- Chemical Engineering
- Biomedical Engineering
- Economics
- Environmental Studies

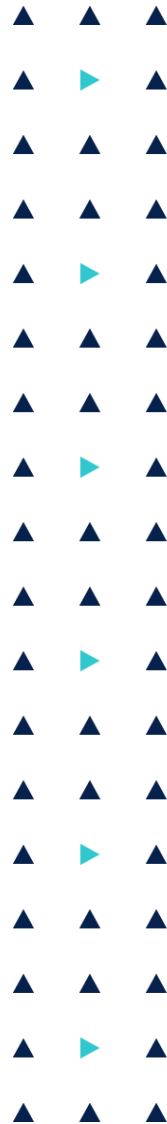
## Industry background

- Financial
- Management and Analytics Consulting
- Oil & Gas
- Retail
- Biopharma

## Relevant experience

- Rapid prototyping of analytics projects including simulation, optimization, geospatial analytics and NLP
- Advanced statistical and AI forecasting techniques
- Infrastructure and strategy for clients across many verticals

# Agenda



01

Aimpoint Digital



02

Strategy sets the tone for success



03

Case studies

# Does this sound familiar?

Awareness of the potential benefits of data, but a lack of access to the right data and tools



"We make a lot of decisions in silos, and we don't see the picture holistically."



"We don't have a way to connect data and see what the pain points are."



"It feels like there isn't enough testing being done (QA/Unit) because of resource constraints and being a small team."



"How do we create a view of the data that is higher level... so our product managers can be thinking about long term trends versus month to month?"



"It can be difficult to prioritize tasks and unclear what the priorities should be."



"We make manual adjustments and maintain that data in Excel...these calculations in Excel... as years go on, we've been finding that it's been crashing."



# Analytics Maturity Model

Analytics Maturity / Value / Data Need

What happened?

Application Reporting

Operational BI

Ad-Hoc Reporting & OLAP

Strategic Dashboards

What's happening now?

Alerting & Embedded

Self-Service Analytics

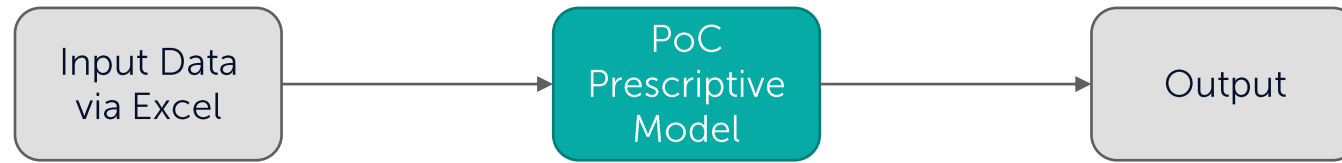
What will happen?

Predictive

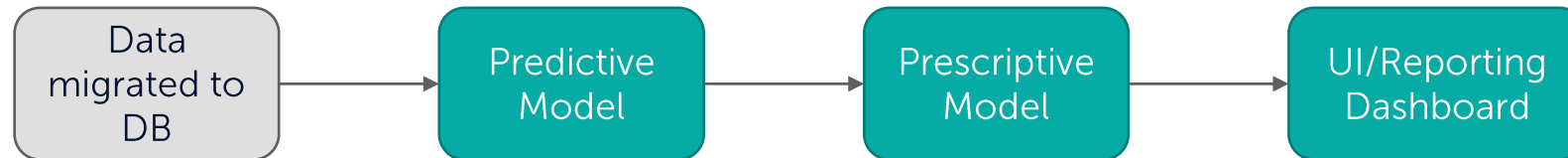
What is the best that can happen?

Prescriptive

# Analytics orgs are often asked to demonstrate value of advanced analytics **before** they can invest in data foundation



Once model is proven valuable, team can revisit other aspects of the analytics pipeline



# Modern supply chains have many facets

Incredible opportunities for improvements in a supply chain across various applications

## Supply chain facets

## Applications



S/OP & Demand Planning

Predictive demand modelling, demand sensing, tactical planning and scenario analysis



Materials & Sourcing  
Procurement

Sourcing value and procurement value optimization, visualization and review of contracting



Inbound Logistics

Logistics, order, network and freight optimization for raw materials



Manufacturing

Production optimization, OEE value emphasis and plant floor visualization



Inventory Management

Intelligent inventory management and demand-supply matching optimization



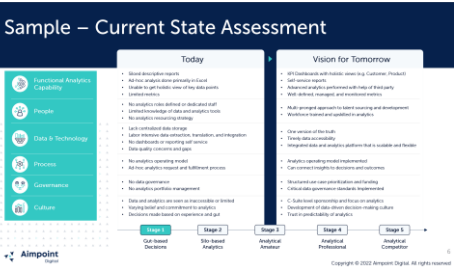
Outbound Logistics &  
Distribution

Distribution and outbound network optimization with predictive performance alerting

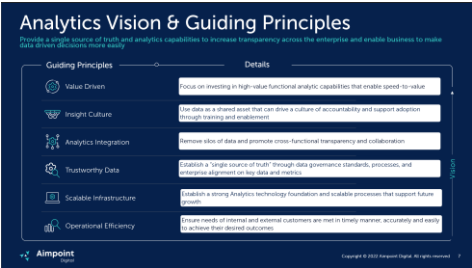
# Our Approach – Strategy that Drives Value

Outputs of a Strategic Assessment immediately deliver value by providing clarity, communicating the vision, and driving consensus for what is needed to be successful beyond a technology implementation or migration

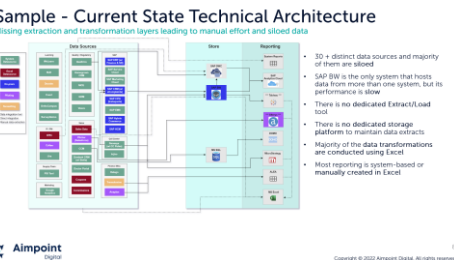
## Current State Assessment



## Future State Vision



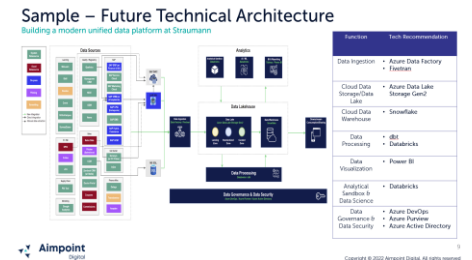
## Infrastructure and Capability Assessment



## Strategic Roadmap & Enablement Plan



## Future State Architecture



# A holistic strategy based on foundational principles



## Cloud First

Select Cloud-hosted solutions where possible



## Cost Effective

Select cost-effective solutions with consumption-based pricing



## Ease of Maintenance

Leverage pre-built integrations and managed services where possible



## Modern Tools

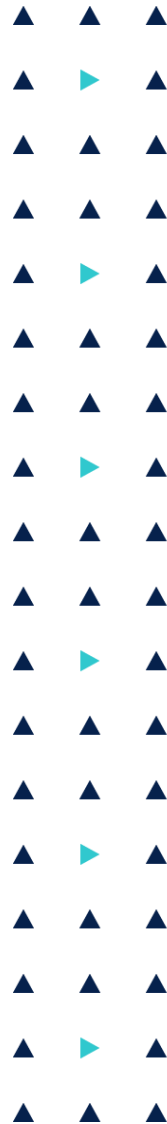
Select best in class tools within the Modern Data Stack



## Modular Design

Design in a modular fashion to avoid vendor lock-in

# Agenda



01

Aimpoint Digital



02

Strategy sets the tone for success



03

Case studies



Case Study 01

# Site Selection

# Use case: last-mile drone delivery rollout planning

- A large retailer hired the client to pilot drones for last-mile deliveries
- Client is tasked with identifying 150 store locations out of 4,000+ stores with high financial potential to prioritize

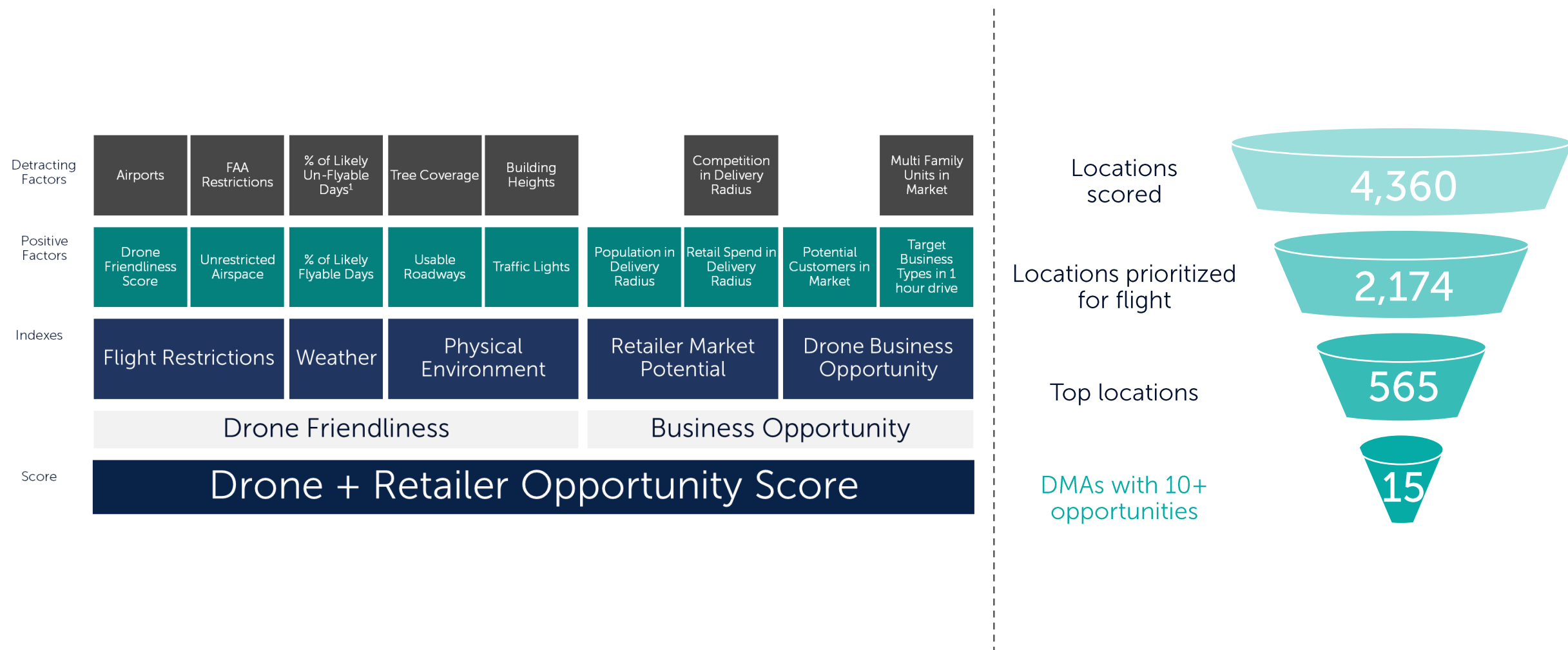


Need to identify and balance factors that impact drone friendliness and business opportunities



# Significant effort needed for data collection and synthesis

15 designated market areas (DMAs) identified to target initial roll out



# Success based on multiple ingredients

Project of vital importance for the client's business model



## Gathering external data

Identifying and incorporating data from multiple vendors



## Using complex data types

Raster analysis of satellite data for analysis of tree cover and related factors



## Geospatial analytics

Competitor analysis and geographical analysis of the stores



## Visualization

Intuitive visualization to convey results to stakeholders effectively



## Modular design

Analysis implemented in an extensible manner to ensure project can be used as a sales tool for other clients



Scan QR code to view dashboard



Case Study 02

# Facility Location

# Use case: design/operations for hub/spoke network

## Background & Challenge



- Fulfill demand by **optimally transporting** goods from one facility to another (distribution centers, warehouses, facilities) whilst maintaining customer SLAs
- Challenge in identifying the right balance of investment/operating costs

## Business Impact



- Minimize transport costs
- Optimal selection of new hubs

## Data Product



- Route **optimization model**
- **Output schedule** with a handful of scenarios to review and implement

# Solution packaged in a business-friendly form

Easy-to-use interface within a software platform already adopted by the organization



# Hub and Spoke Network

Optimized Station Network with Incremental Hub Addition (Demo)



## Controls

Additional Hubs  
6

Manufacturing Facility  
All

Proposed Hub  
All

Destination Market  
All

Shown networks are illustrative, show only the manufacturing portions of the networks, and are based on an optimization of distance traveled.

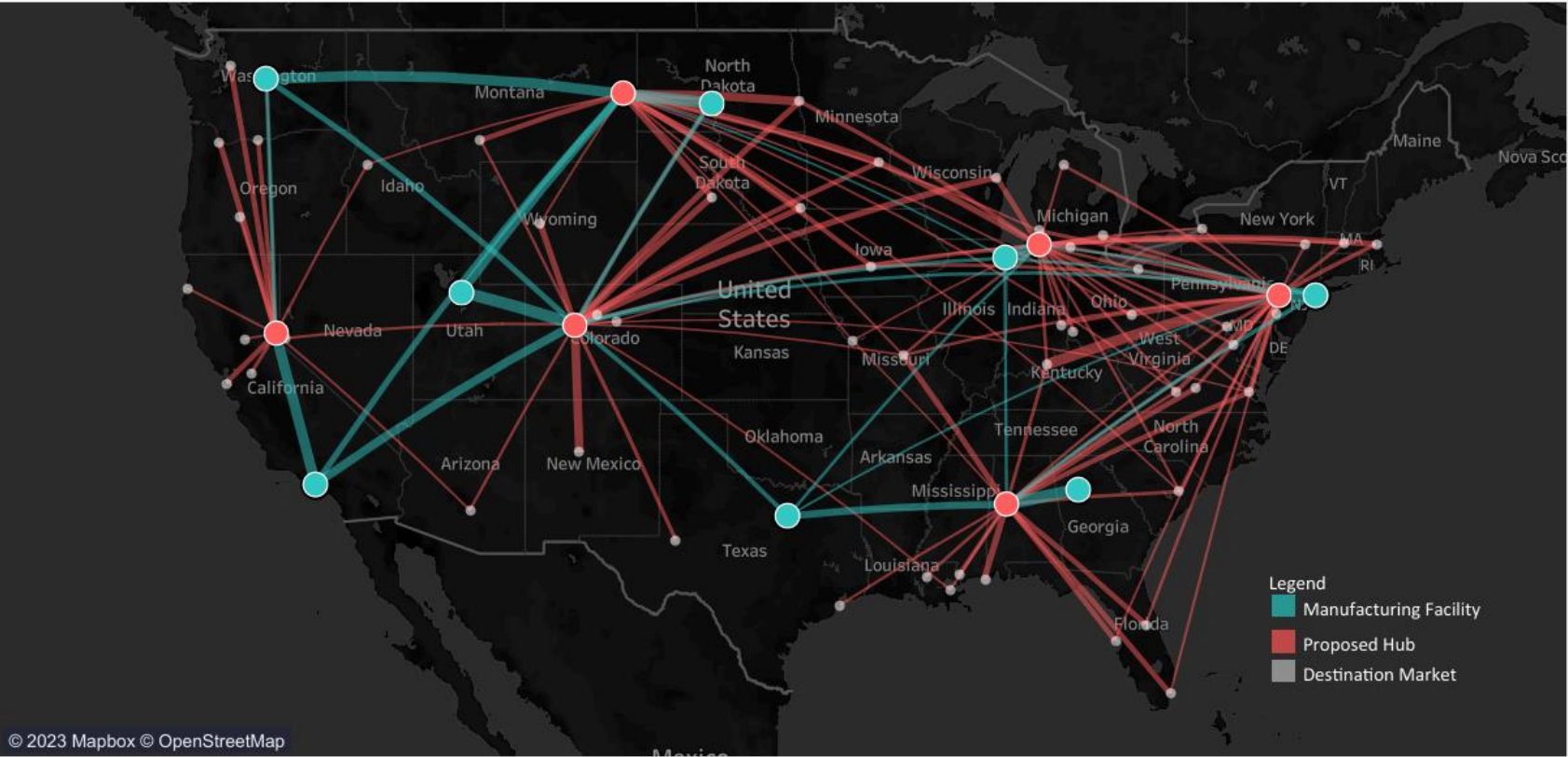
Aimpoint Digital



Weighted Distance  
305.2M miles



Number of Hubs  
6 hubs



Icons: Mehwish | Designed by: JD Love-Epp, William Wirono



Aimpoint  
Digital

<https://public.tableau.com/views/SupplyChainNetworkOptimizationDemo/HubNetworkOptimization>

Copyright © 2023 Aimpoint Digital. All rights reserved



**Aimpoint**  
Digital