Tool Depot Hammer Supplier Selection Analysis

A Data-Driven Cost and Logistics Analysis

Sowmya Reddy Yella & Jan 6th, 2025

Executive Summary

Supplier A Recommended

Based on lower total costs ($365,565.60)

Carrier X Selected
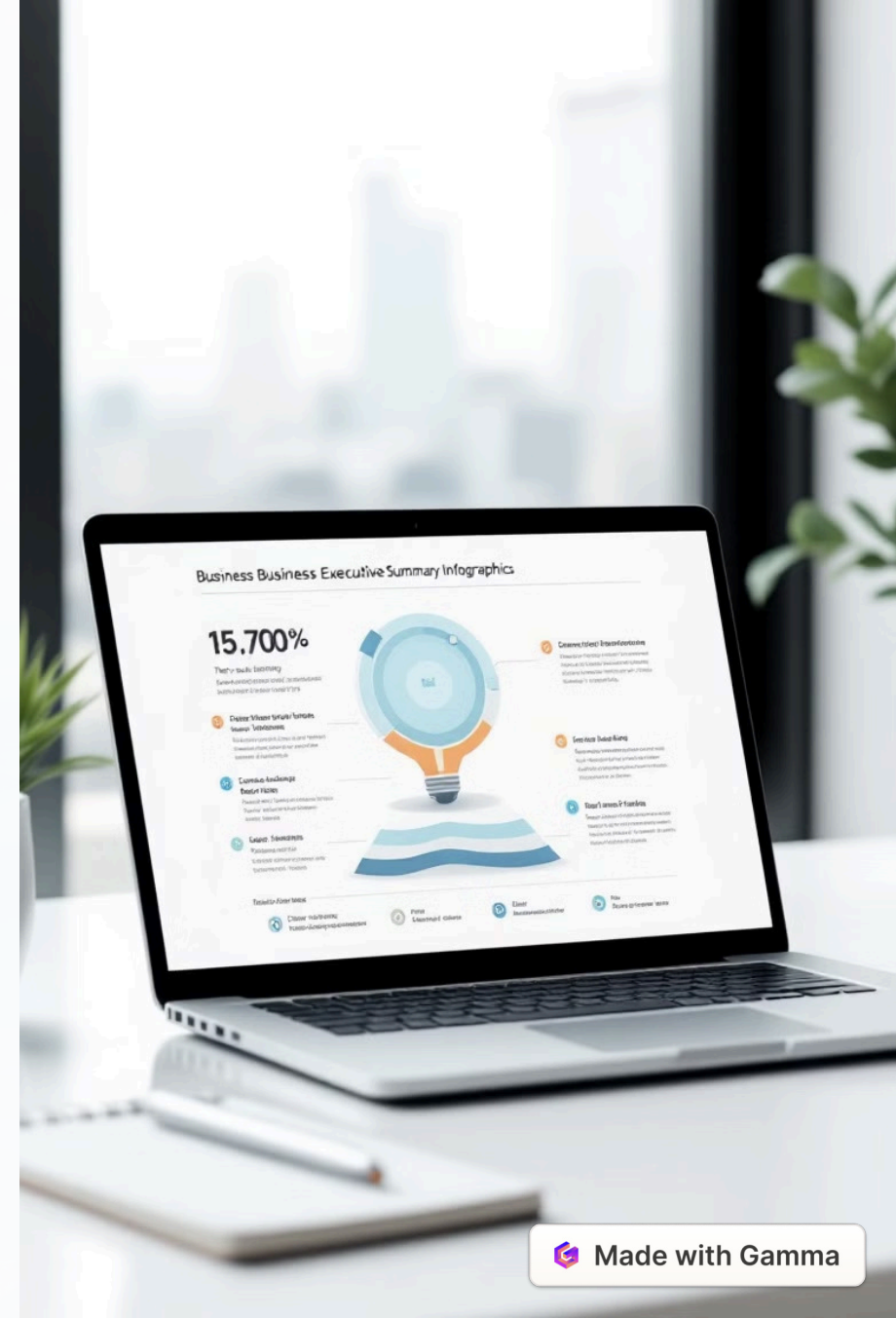
Most cost-effective shipping option for both suppliers

Projected Demand Growth

10% Year-Over-Year (YOY)

Implementation Start Date

August 3, 2015

Problem Statement & Objectives

Objective

Identify the most cost-effective supplier (Supplier A or Supplier B) for hammers.
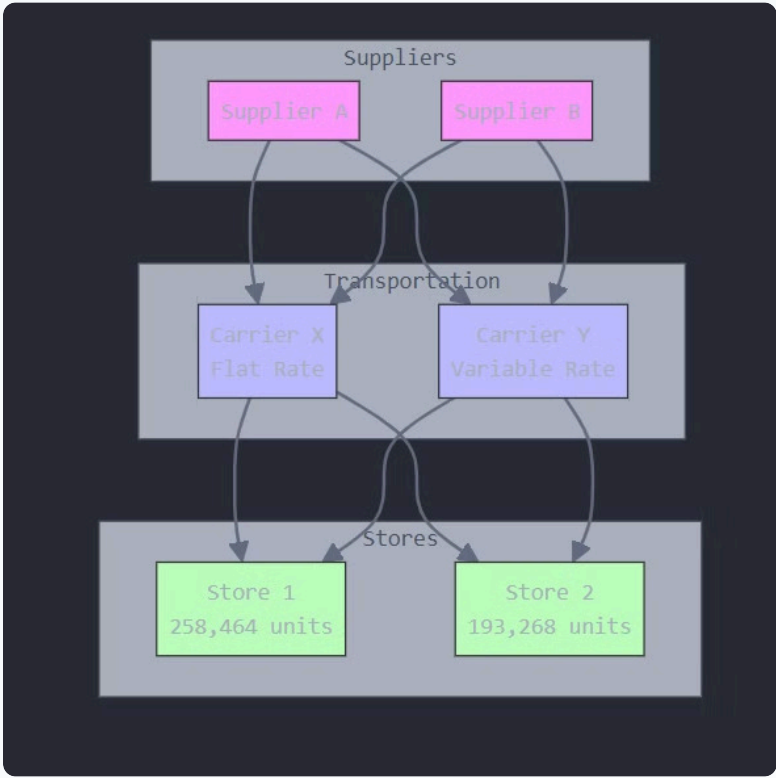
Key Constraints

- Current Setup: Supplier A (wrenches, saws), Supplier B (drills)
- Timeline: Implementation by August 3rd, 2015
- Must use same supplier for both stores
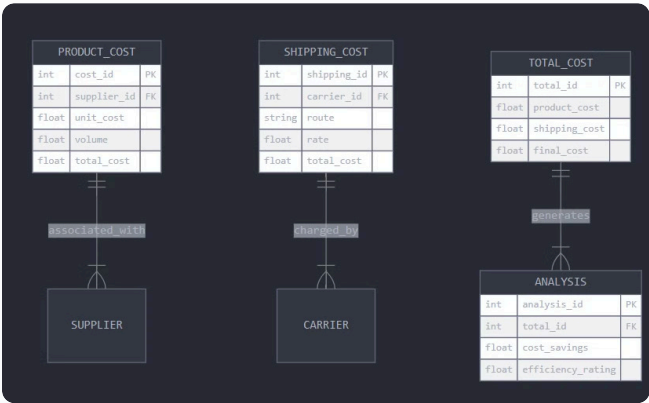
Key Factors Considered

- Product Costs: Supplier A ($0.80/unit) vs. Supplier B ($0.82/unit)
- Shipping Costs: Carrier X (Flat Rate) vs. Carrier Y (Variable Rate per Pound)
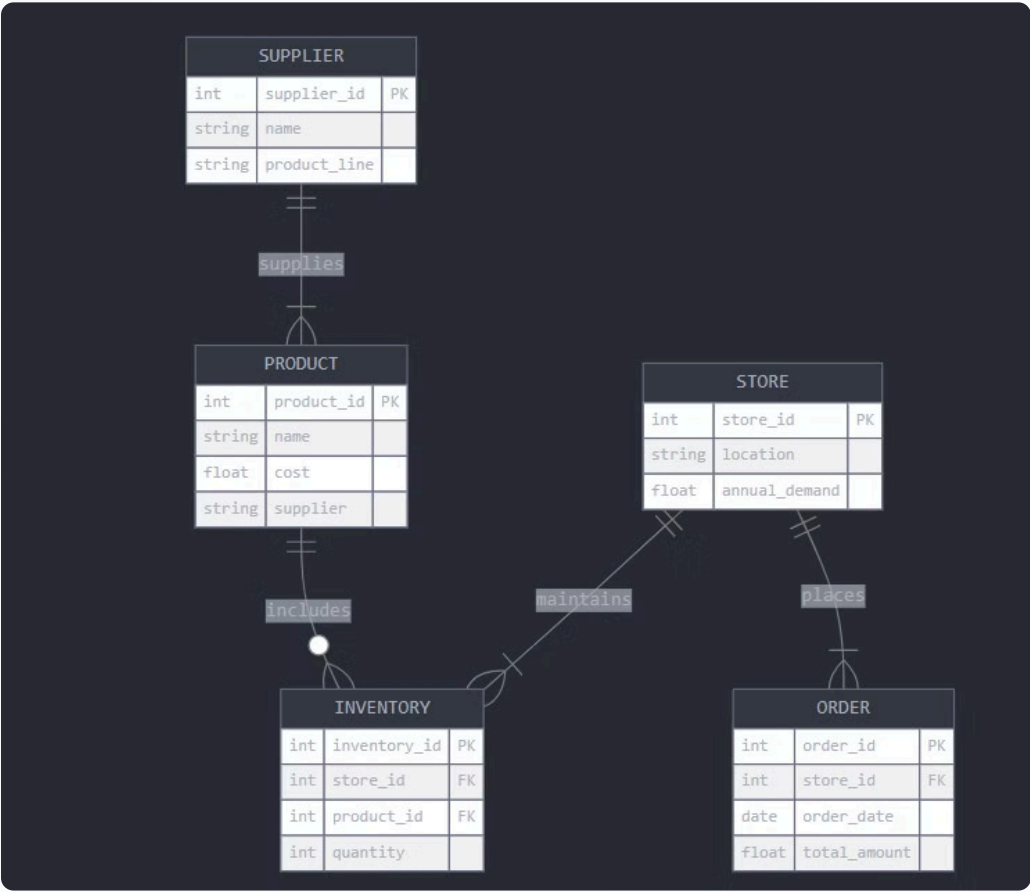- Projected Demand Growth: 10% YOY

Product and Total Cost Analysis Schema

Carrier Rate and Shipment Management Schema

Tool depot supply chain flow

Tool Depot Inventory and Order Management Schema

Forecasted Hammer Orders
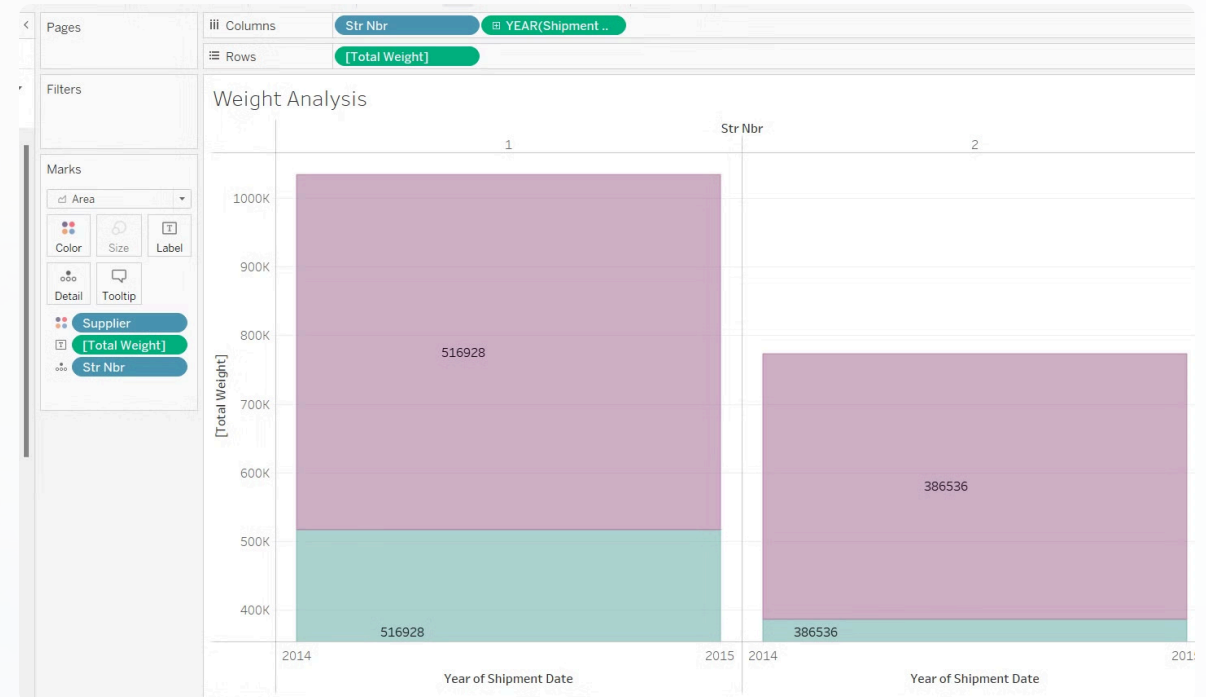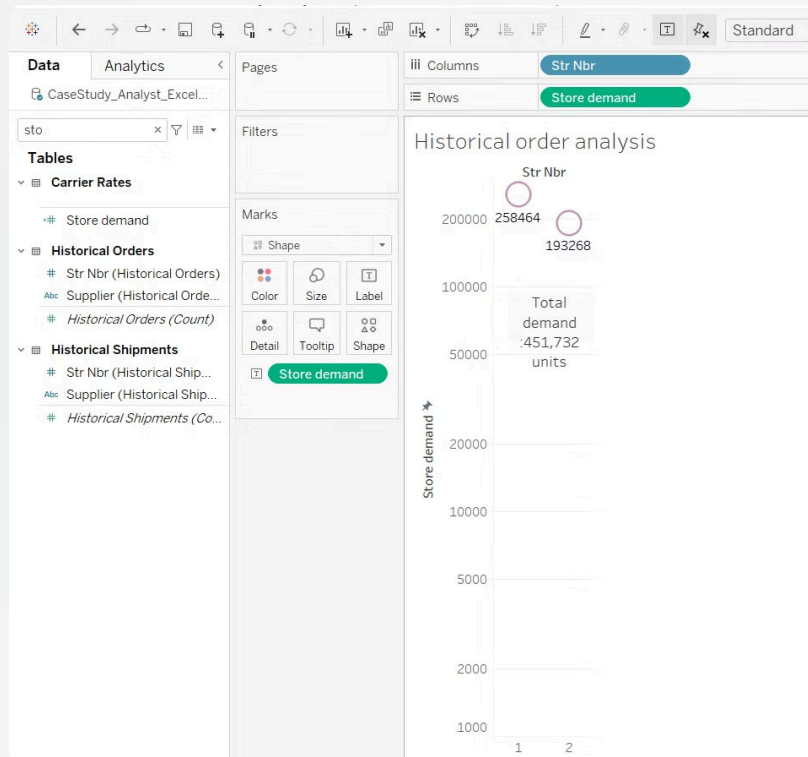
Shipment Capacity Check:

- *Maximum capacity per shipment: 44,000 lbs*
- *Store 1 needs: 516,928 lbs ÷ 44,000 = 12 shipments*
- *Store 2 needs: 386,536 lbs ÷ 44,000 = 9 shipments*

10%

YOY Growth
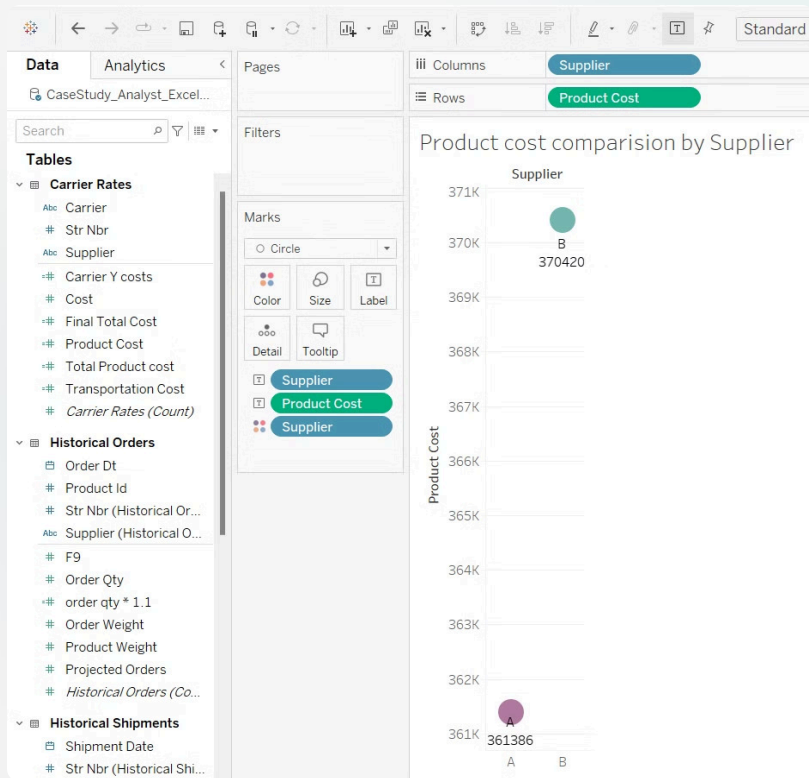
Based on historical wrench order data

451,732

Total Units

Store 1: 258,464 units, Store 2: 193,268 units

903,464

Total Weight (lbs)

Calculated at 2 lbs per hammer

Made with Gamma

Product Costs

Supplier A

1

451,732 × $0.80 = **$361,385.60**

Supplier B

2

451,732 × $0.82 = **$370,420.24**

Cost Difference

3

Supplier A is cheaper by $9,034.64
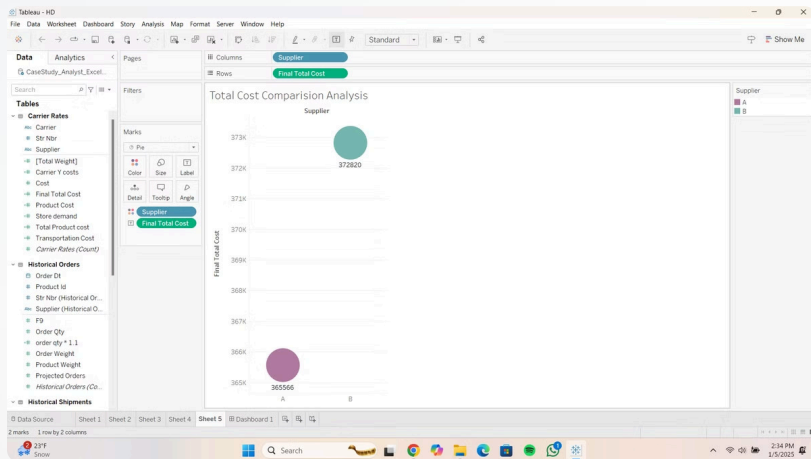
Transportation Costs

X = flat rate, Y = variable rate
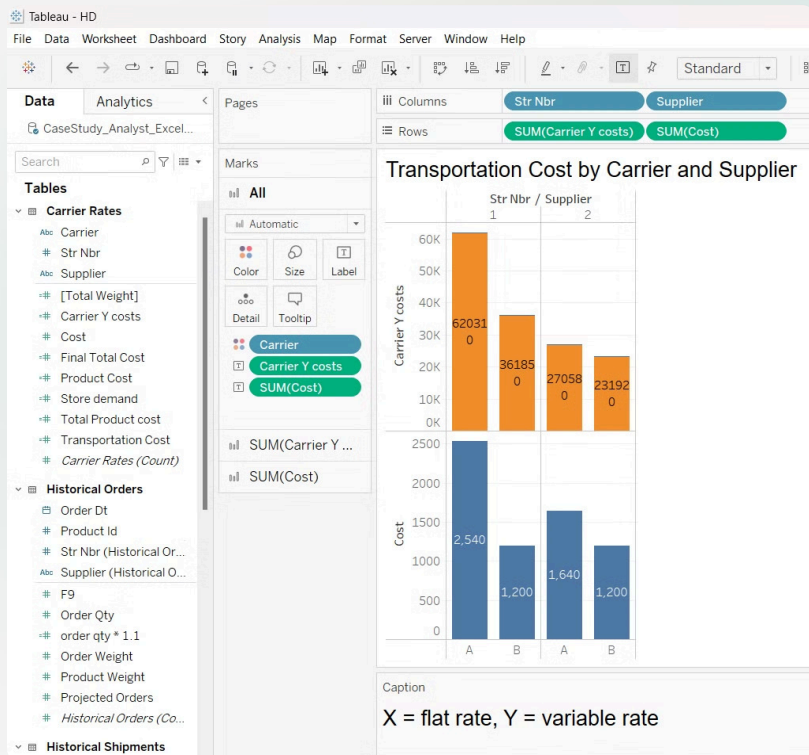
Store	Supplier A (Cost)	Supplier B (Cost)	Cheaper Option
Store 1	$2,540 ✅	$1,200 ✅	Supplier B
Store 2	$1,640 ✅	$1,200 ✅	Supplier B

Selected Carrier: **Carrier X** for both suppliers (most cost-effective choice)

- Lower total cost vs variable rate
- Sufficient capacity for projected volumes
- Integration with existing shipments
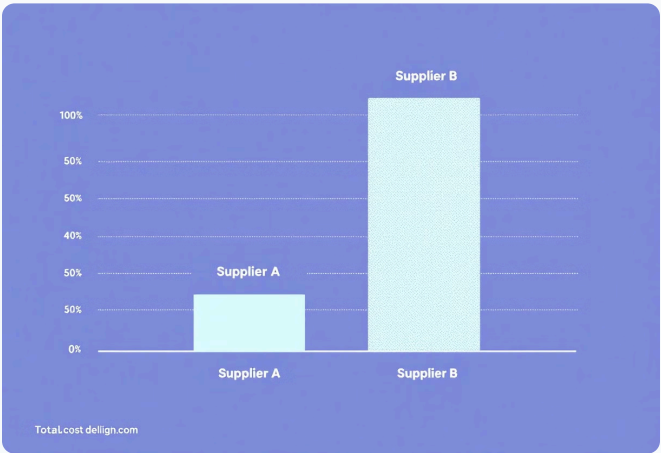
Capacity: Up to **44,000 lbs per shipment**.

Made with Gamma

Cost Comparison Summary

Metric	Supplier A	Supplier B
Hammer Unit Cost	$0.80	$0.82
Total Product Cost	$361,385.60	$370,420.24
Total Transportation Cost	$4,180	$2,400
Total Cost	**$365,565.60** ✅	$372,820.24 ❌

Key Takeaway: Supplier A is **$7,254.64 cheaper overall**.
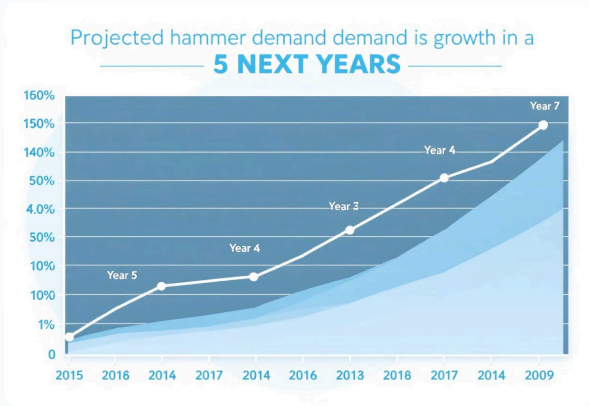
Key Insights & Findings

Cost Efficiency

Supplier A provided a total cost savings of $7,254.64.

Optimal Shipping

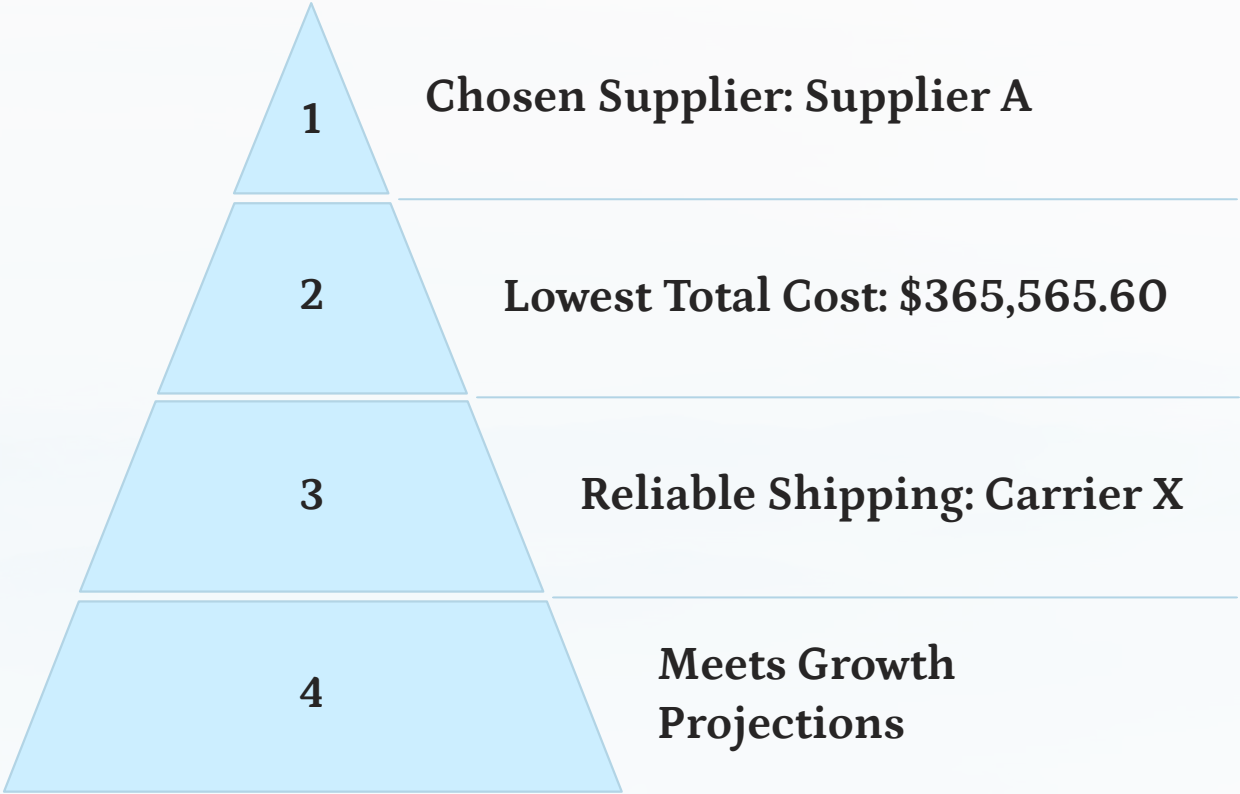Carrier X (Flat Rate) offered the most cost-effective solution for both suppliers.
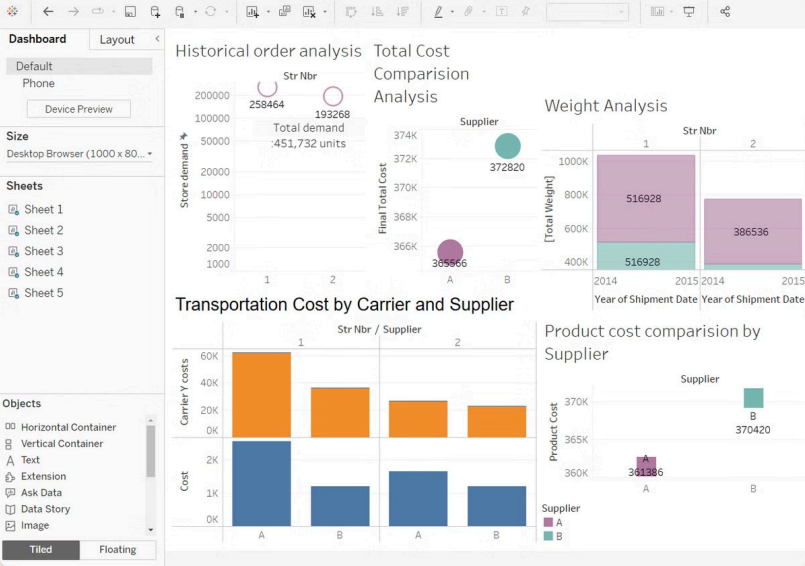

Demand Growth

Both suppliers can meet the forecasted demand increase.

Final Recommendation

1 **Chosen Supplier: Supplier A**

2 **Lowest Total Cost: $365,565.60**

3 **Reliable Shipping: Carrier X**

4 **Meets Growth Projections**

Strategic Benefit: Optimized cost savings, enhanced supply chain reliability, supports long-term goals

Thank You!