

Tool Depot Hammer Supplier Selection Analysis

Introduction

Case Background

Tool Depot requires a supplier selection for their new hammer product launching August 3rd, 2015. Currently operating with:

- Two stores sourcing from multiple suppliers
- Supplier A: provides wrenches and saws
- Supplier B: provides drills

Problem Statement

Select the most cost-effective supplier while ensuring:

- Reliable supply chain operations
- Meeting projected 10% growth
- Same supplier for both stores

Objectives

- Analyze product and transportation costs
- Evaluate supplier capabilities
- Recommend optimal supplier choice

Executive Summary

Analysis conducted to select optimal supplier for Tool Depot's new hammer product line, launching August 3rd, 2015. The current situation involves two stores sourcing from Supplier A (wrenches, saws) and Supplier B (drills).

Analysis Framework

Data Sources

- Historical order data
- Supplier cost proposals
- Carrier rate information
- Product specifications

Methodology

- Demand forecasting using historical data
- Cost comparison analysis
- Transportation cost optimization
- Total cost of ownership evaluation

1. Project Parameters

Key Specifications

- Product Pricing:
 - Supplier A: \$0.80/unit
 - Supplier B: \$0.82/unit
- Shipping Options:
 - Carrier X: Flat rate
 - Carrier Y: Variable rate
- Constraints:
 - 44,000 lbs per shipment maximum
 - Same supplier requirement for both stores
 - Expected 10% year-over-year growth

2. Analytical Approach & Calculations

A. Demand Forecasting

Baseline Calculations:

- Store 1: $234,967 \times 1.10 = 258,464$ units
- Store 2: $175,698 \times 1.10 = 193,268$ units
- Total Projected Demand: 451,732 units

B. Weight Analysis

Product Weights Reference:

- Wrench: 2.2 lbs
- Saw: 1.2 lbs
- Drill: 8.3 lbs
- Hammer: 2.0 lbs (new product)

Total Weight Calculations:

- Store 1: $258,464 \text{ units} \times 2 \text{ lbs} = 516,928 \text{ lbs}$
- Store 2: $193,268 \text{ units} \times 2 \text{ lbs} = 386,536 \text{ lbs}$
- Total Weight: 903,464 lbs

C. Cost Analysis

Product Costs

- Supplier A: $451,732 \text{ units} \times \$0.80 = \$361,385.60$
- Supplier B: $451,732 \text{ units} \times \$0.82 = \$370,420.24$
- Cost Difference: \$9,034.64 (favoring Supplier A)

Transportation Costs

Supplier A:

- Carrier X (Flat Rate):
 - Store 1: \$2,540
 - Store 2: \$1,640
- Carrier Y (Variable Rate):
 - Store 1: $516,928 \text{ lbs} \times \$0.12 = \$62,031.36$
 - Store 2: $386,536 \text{ lbs} \times \$0.07 = \$27,057.52$
- Best Option: Carrier X Total = \$4,180

Supplier B:

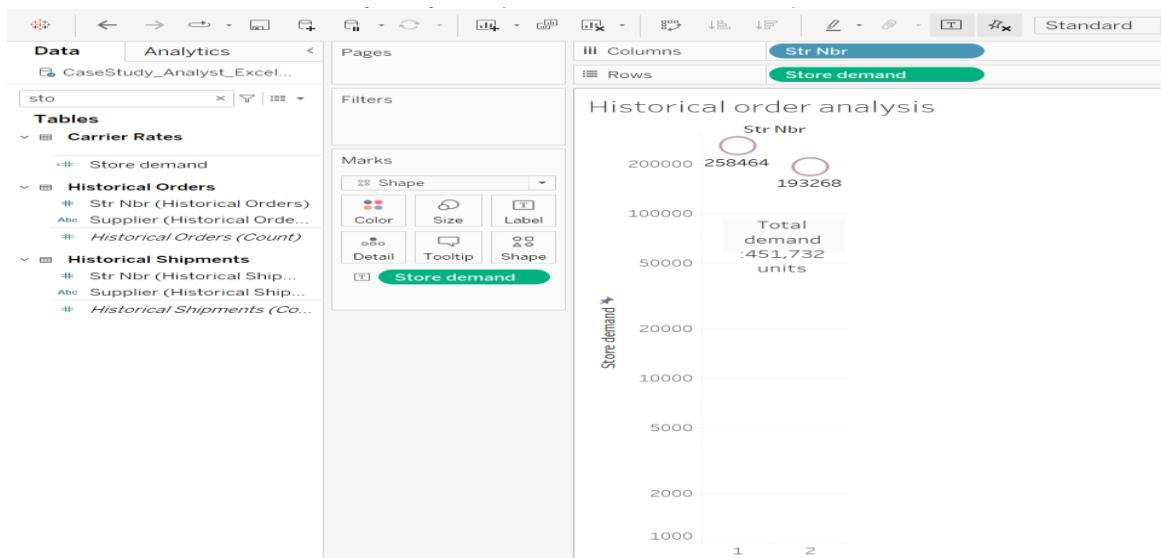
- Carrier X (Flat Rate):
 - Store 1: \$1,200
 - Store 2: \$1,200
- Carrier Y (Variable Rate):
 - Store 1: $516,928 \text{ lbs} \times \$0.07 = \$36,184.96$
 - Store 2: $386,536 \text{ lbs} \times \$0.06 = \$23,192.16$
- Best Option: Carrier X Total = \$2,400

D. Total Cost Comparison

- Supplier A: $\$361,385.60 + \$4,180 = \$365,565.60$
- Supplier B: $\$370,420.24 + \$2,400 = \$372,820.24$
- Net Savings with Supplier A: \$7,254.64

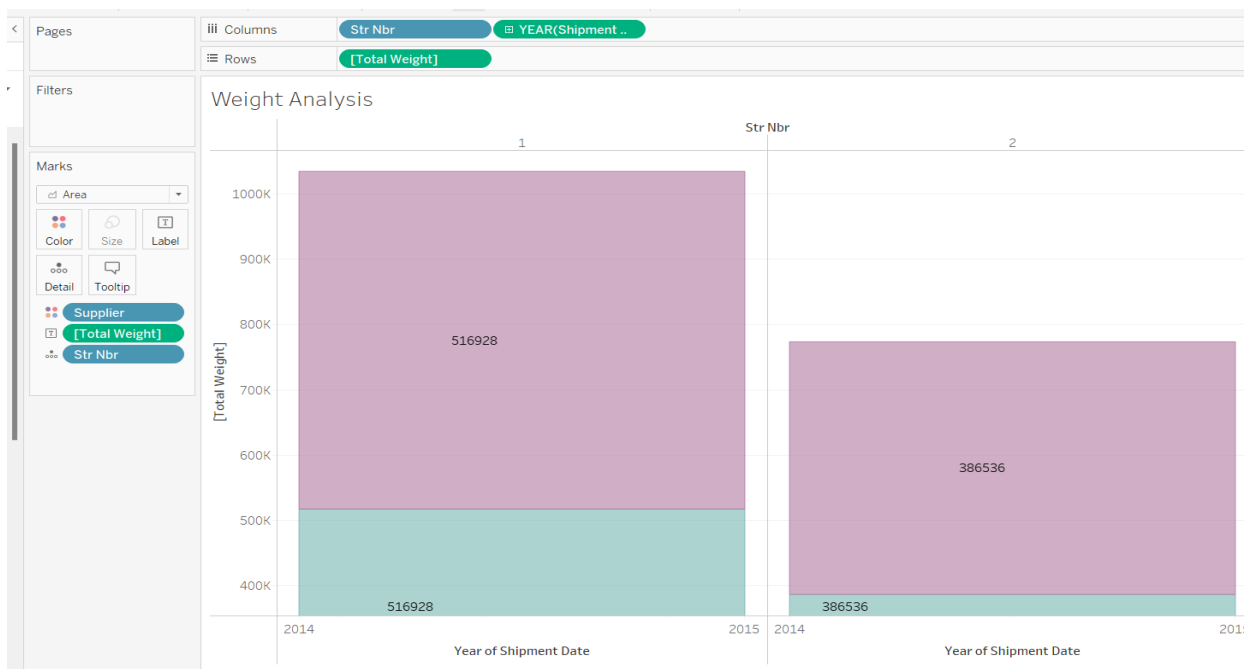
3. Data Visualization Analysis

A. Historical Order Analysis



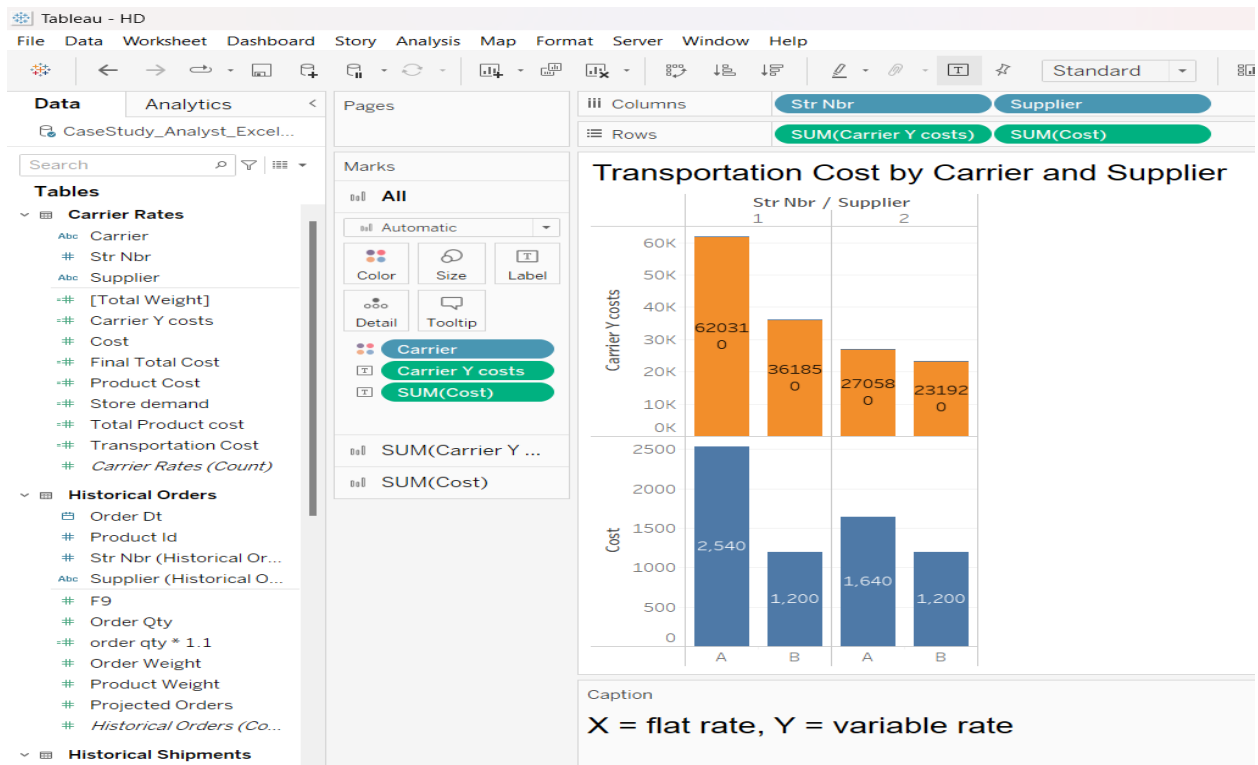
- Demonstrates historical order volumes (2014-2015)
- Shows 10% growth projection
- Validates supplier capacity assumptions

B. Weight Analysis Trends



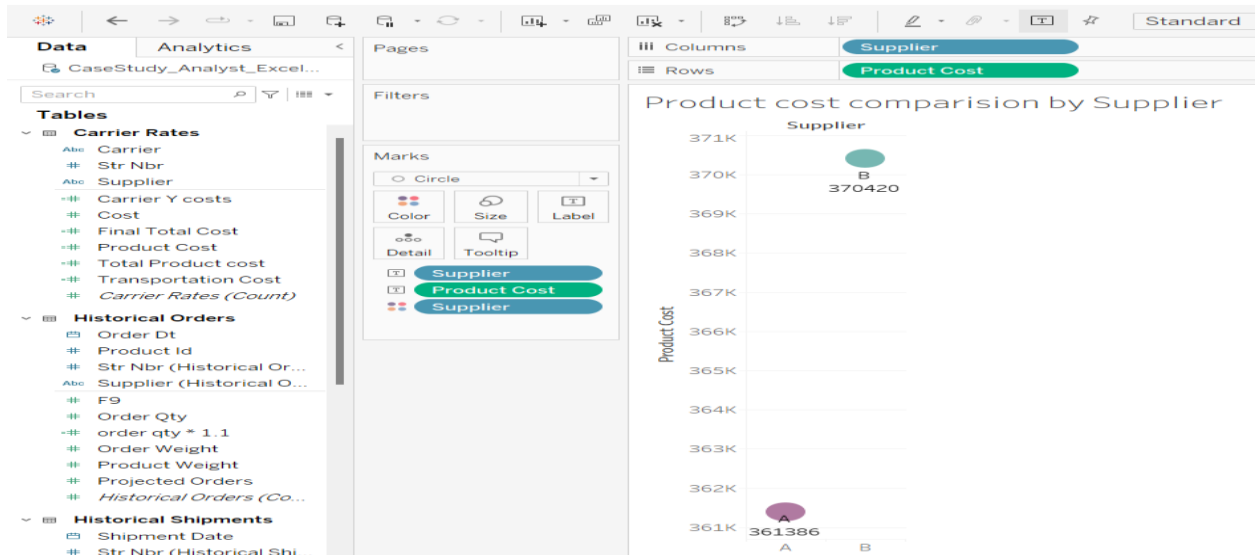
- Displays weight handling trends
- Shows consistent growth patterns and Validates capacity management.

C. Transportation Cost Analysis



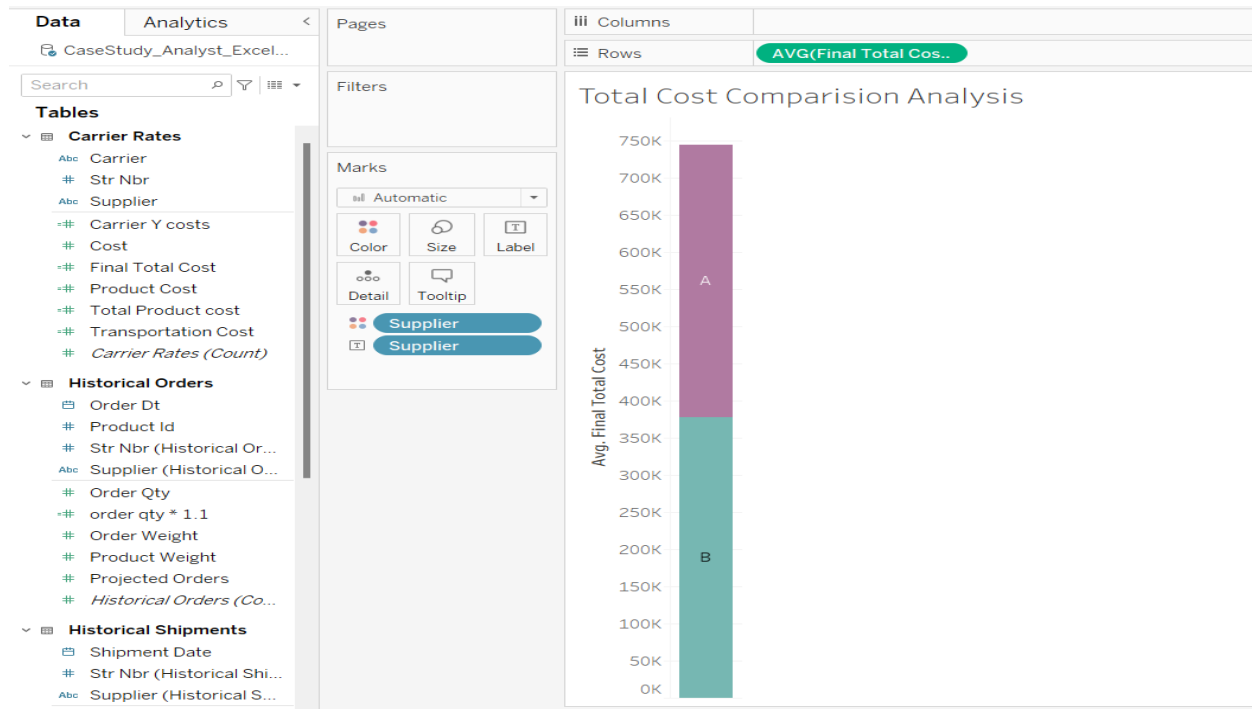
- Compares carrier costs
- Shows flat vs variable rate impact
- Supports carrier selection decision

D. Product Cost Comparison



- Illustrates unit cost differences
- Shows total cost impact
- Validate cost calculations

E. Total Cost Comparison



- Shows comprehensive cost analysis
- Demonstrates total cost advantage
- Supports final recommendation

4. Key Assumptions

1. Hammer demand mirrors wrench order patterns
2. 10% growth projection remains consistent
3. Product quality is equivalent between suppliers
4. Shipping capacity remains stable
5. No seasonal demand variations

5. Risk Assessment

Identified Risks and Mitigation Strategies

1. Demand Forecast Accuracy
 - Mitigation: Regular forecast reviews and adjustments
2. Transportation Rate Changes
 - Mitigation: Contract rate guarantees
3. Capacity Constraints
 - Mitigation: Regular capacity planning reviews

6. Implementation Plan

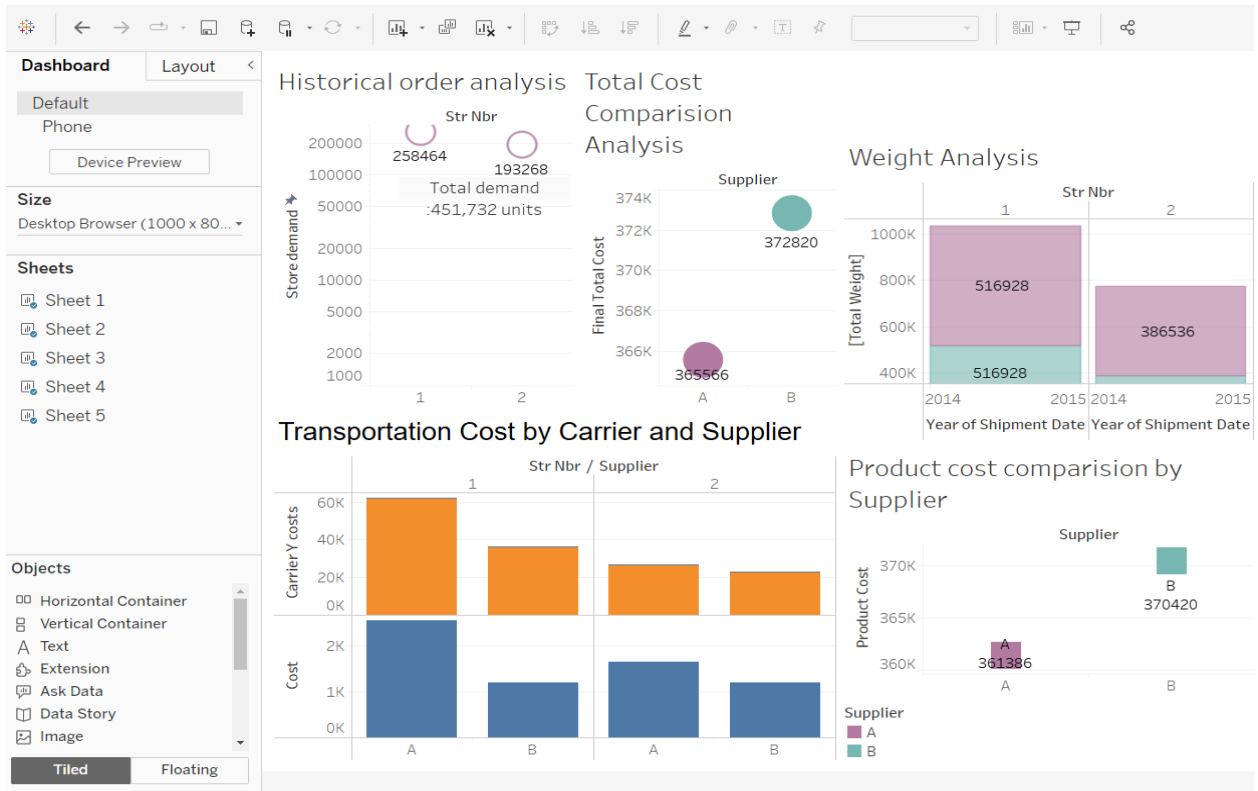
Key Considerations

1. Timeline alignment for August 3rd, 2015, launch
2. Integration with existing shipment schedules
3. Performance monitoring metrics setup
4. Regular cost and efficiency review schedule.

7. Decision Criteria

1. Total Cost Optimization
2. Transportation Efficiency
3. Growth Capacity
4. Operational Feasibility

8. Final Recommendation



Recommendation: Select Supplier A

Justification:

1. Lower total cost (\$7,254.64 savings)
2. Proven ability to handle projected growth
3. Efficient shipping solution with Carrier X
4. Successful integration with existing product lines