Data Analyst Portfolio

Power BI

python™

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Project

Shipment Delay Analysis

Operational Performance & Delay Reduction Insight

Business Context & Objective

Business Problem

Content

- Shipment delays reduce operational efficiency and reliability
- Management needs to identify where delays originate
- Focus on actionable insights, not just volume

Objective

- Measure delay performance
- Identify delay concentration by ship
- Recommend targeted operational improvements

Dataset & Methodology

Data & Methodology

Content

- Dataset: Shipping movement records (~823K rows)
- Fields: Ship, Port, ETA, ATA, Delay Minutes
- Defined delay as ATA – ETA (minutes)
- Data Processing:
  - Cleaned missing & blank values
  - Standardized datetime fields
  - Calculated delay metrics

Tools

- Python (Pandas)
- SQLite
- Power BI (DAX)

Key KPIs (Executive View)

Overall Shipment Performance

823.67K

Count of Total Shipments

219K

Delayed Shipment

26.63%

Delay Rate

73.37%

On Time Rate

Where Do Delays Occur

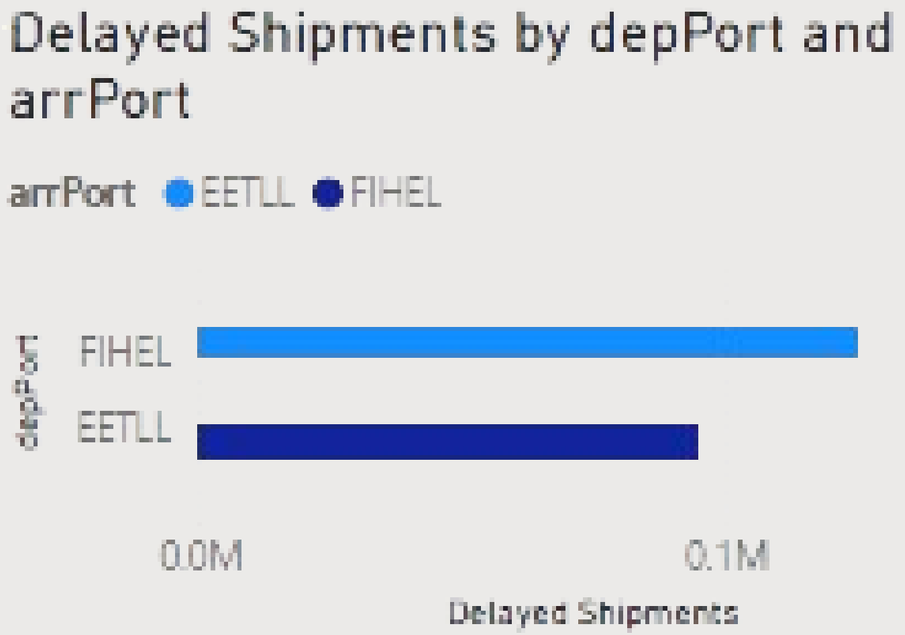
Delay Distribution Analysis

Insight

- Delays are not evenly distributed
- Certain ships consistently experience higher delays

Root Cause Direction

Delay Drivers Insight

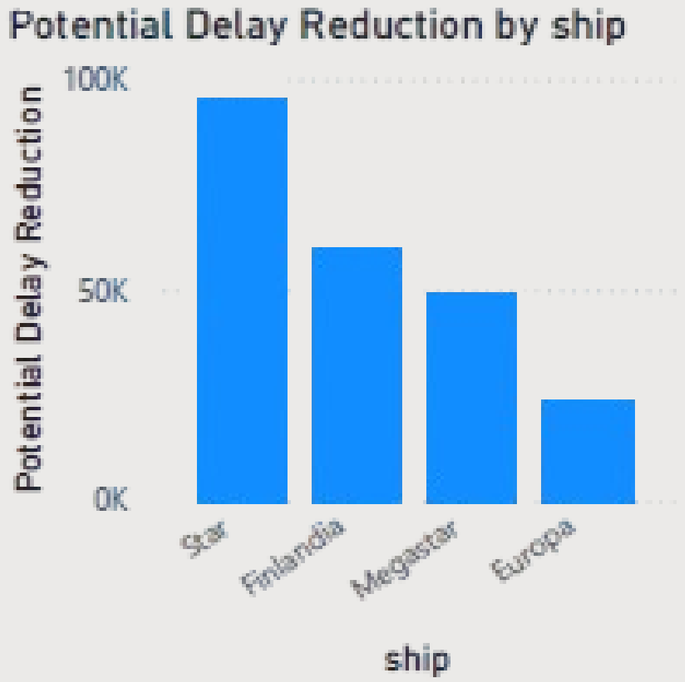


Insight

- Delays are more related to departure readiness
- Route complexity is not the dominant factor

Potencial Delay Reduction

Potencial Delay Reduction Impact



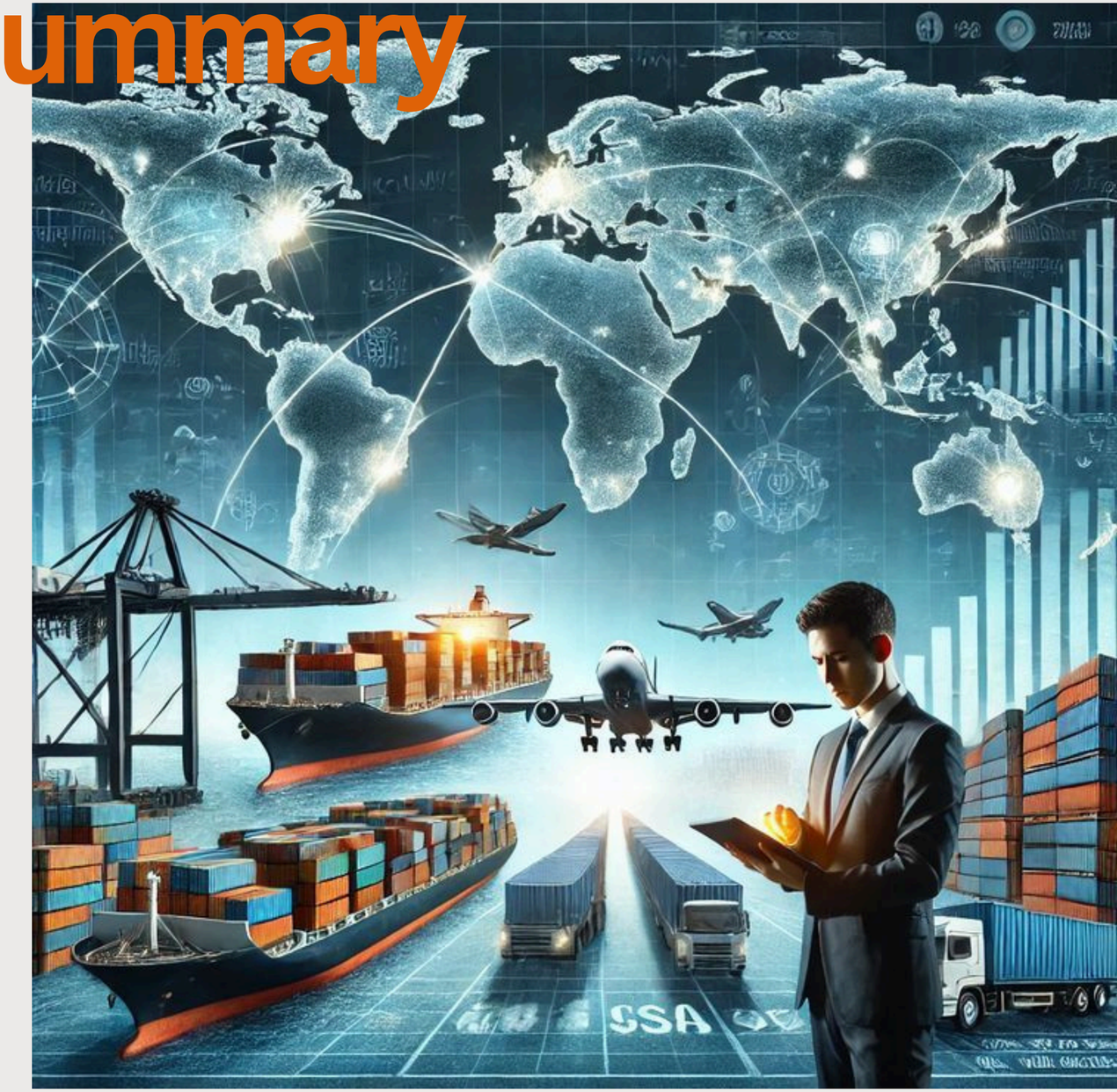
Insight

- A small subset of ships accounts for a large share of delays
- Targeting top vessels yields maximum impact with minimal effort

Key Insight Summary

Key Insight

- 26.63% shipments are delayed, avg delay 5.21 minutes
- Delay concentration is vessel-driven
- Targeted interventions outperform route-level optimization



Recomendations & Next Steps

Recomendations

- Prioritize operational review for top 2–3 vessels
- Implement stricter departure readiness checks
- Track departure punctuality as a leading KPI
- Focus on vessel-level execution before expanding route-level optimization

Optional

This dashboard supports data-driven operational decisions.