Freight Delay Performance Dashboard June 2024 Summary Report

Project Overview

This dashboard project analyzes freight delivery delays for June 2024 using SQL and Power BI. The goal was to identify which carriers and dispatchers were contributing most to delays, assess the distribution of on-time performance, and examine daily trends. The data was queried in Google BigQuery and visualized in Power BI Desktop using a local CSV export due to sandbox limitations.

Tools and Technologies

- **Google BigQuery (Sandbox)**: Used to write and execute SQL queries for data summarization
- **Microsoft Power BI Desktop**: Used for visualizing key delay metrics and building the final dashboard
- **CSV Export**: Used to bring BigQuery results into Power BI for local analysis

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Dataset Summary

- **Source**: Simulated freight delays table: `freight_analytics.freight_delays`
- **Total Loads in June 2024**: 150
- **Key Metrics Captured**:
- Average delay per carrier (in minutes)
- Total loads and delay by dispatcher
- Daily average delivery delay
- On-time delivery breakdown (Early, On-Time, Late)

Visuals and Insights

1. Average Delay by Carrier

- **Top Delay**: Marten (37.5 min)
- **Lowest Delay**: CH Robinson (11.7 min)
- **Insight**: A clear performance gap exists, with Marten and Bison leading in delay times.

2. Total Loads by Dispatcher

- **Top Dispatcher**: S. Lee (35 loads)
- **Insight**: Higher load volume does not necessarily result in higher delays. S. Lee had the most loads with the lowest average delay.

3. On-Time Delivery Breakdown

- **Early**: 36.7%
- **On-Time**: 32.7%
- **Late**: 30.7%
- **Insight**: Nearly 1 in 3 loads were late. On-time performance was not the majority.

4. Daily Average Delivery Delay

- **Notable Spikes**: June 10 (109.3 min), June 28 (79.3 min)
- **Insight**: Delay spikes suggest possible scheduling or staffing issues on certain days.

Limitations

- BigQuery sandbox does not allow saving queries or data snapshots.
- Power BI Free tier prevents publishing online; dashboard exists only locally.
- No terminal-level delay data was available; terminal filter is non-functional.

Conclusion

The dashboard effectively identifies delay trends by carrier, dispatcher, and date. While S. Lee stands out as a high-performing dispatcher, carriers like Marten should be investigated further. Daily delay spikes suggest the need for more granular operational reviews.

Next Steps (Optional)

- Consider expanding dataset with additional months or real terminal data.
- Add cost impact estimates for late loads.
- Develop an R or Python script for automated monthly updates.

Prepared by: Nikki Carlson **Tools Used:** Google BigQuery, Microsoft Power BI Desktop **Date:** July 2025