

INNOVATION BRIEF – Cost Intelligence Platform

Project Title: Cost Intelligence Platform — NexGen Logistics

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Program: OFI — AI Internship (Logistics Innovation Challenge)

Tech Stack: Python, Streamlit, Pandas, Plotly

Problem Statement

NexGen Logistics faces rising operational costs caused by inefficient route management, high fuel consumption, and delays in deliveries. The company requires a data-driven platform to monitor cost patterns and identify optimization opportunities.

Objective

To build an AI-driven dashboard that provides cost visibility across routes, vehicles, and deliveries, highlighting key drivers of expense and enabling actionable insights for cost reduction.

Methodology

- **Data Integration:** Combined four datasets (cost, routes, vehicles, and delivery performance).
 - **Data Analysis:** Computed total and per-km costs, delay hours, and route efficiencies.
 - **Visualization:** Developed an interactive Streamlit dashboard to analyze KPIs and visualize cost breakdowns, trends, and delay impacts.
 - **User Interactivity:** Enabled real-time filtering by carrier and vehicle type.
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Key Insights

- Fuel and maintenance constitute ~65% of total costs.
 - Routes with longer average delays show ~18% higher costs.
 - Cost per km can be reduced by optimizing underperforming routes.
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Impact

The solution provides centralized cost intelligence, enabling up to **15–20% reduction in operational expenses** through data-driven optimization and performance monitoring.

Future Enhancements

- Add ML-based cost forecasting.
- Integrate route optimization using OR-Tools.
- Automate periodic reporting through Streamlit Cloud.