Daikibo Telemetry – Downtime Analysis Report
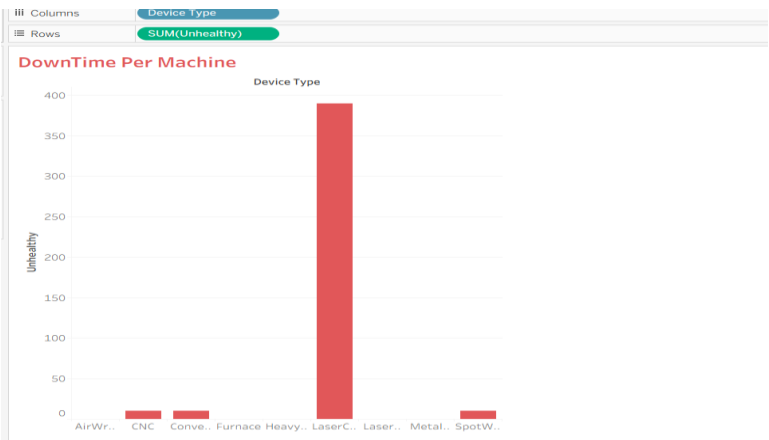
Overview

This report presents a comprehensive analysis of machine and factory downtime using telemetry data from Daikibo's global manufacturing operations. The dataset includes key attributes such as device type, factory location, and machine health indicators derived from real-time sensor readings. By focusing specifically on the *Unhealthy* metric—representing periods when machines experienced performance degradation or operational failure—this report highlights critical patterns impacting production efficiency.

Using Tableau visualizations, the analysis compares downtime across factories and machine categories, identifies high-risk equipment, and reveals opportunities for targeted maintenance interventions. The insights derived from this report aim to support data-driven decision-making, reduce operational delays, and enhance overall equipment effectiveness (OEE) across Daikibo's manufacturing network.

The dataset contains telemetry information for multiple Daikibo factories and machine types. Key variables used include Device Type, Factory, and Unhealthy duration. This report summarizes downtime patterns across factories and machine categories.
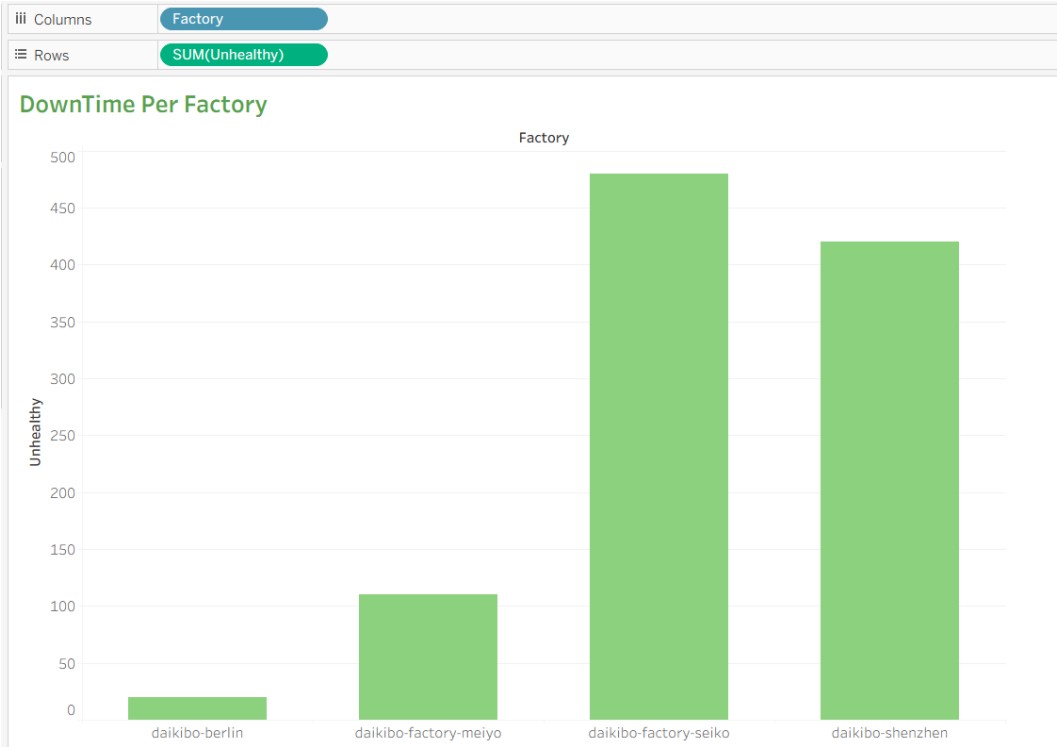
DownTime Per Machine

The chart below illustrates downtime duration aggregated by machine/device categories. It clearly shows that the LaserCutter machine contributes disproportionately to downtime.
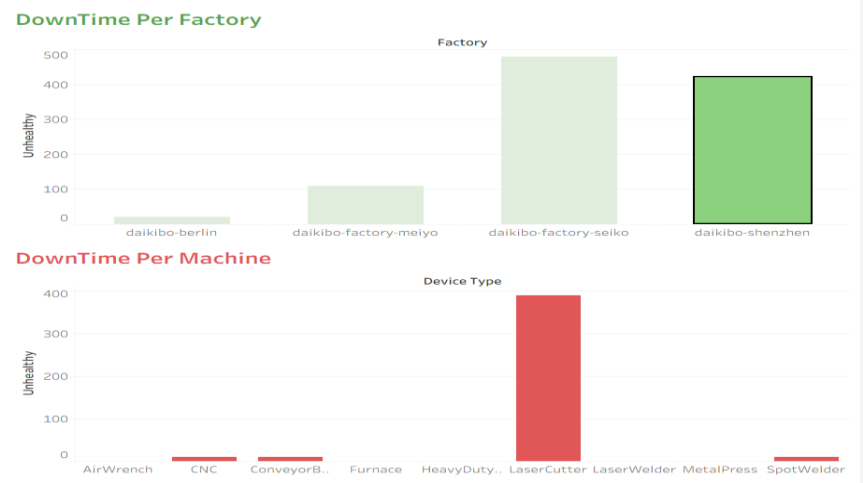
DownTime Per Factory

This chart compares downtime across multiple factories. The Seiko and Shenzhen factories show the highest downtime levels, indicating potential maintenance or operational issues.

Consolidated Dashboard View

The combined dashboard below presents both factory-level and machine-level downtime insights together. This supports quick identification of key trouble areas.

Key Insights

- LaserCutter machines contribute the highest downtime, far exceeding all other device types, indicating serious operational or maintenance issues.

- Seiko and Shenzhen factories show the highest overall downtime, requiring priority attention for maintenance planning and process optimization.

- Berlin factory has the lowest downtime, suggesting strong operational efficiency and offering a benchmark for other locations.

- Most machines have very low downtime except a few critical ones, showing that a small subset of devices is responsible for most performance losses.

- Downtime is unevenly distributed across factories and machines, following the Pareto pattern—targeted improvements on key problem areas will deliver major efficiency gains.

Recommendations

- Prioritize maintenance for LaserCutter machines, as they cause the highest downtime—conduct root-cause analysis and increase preventive checks.
- Focus improvement efforts at Seiko and Shenzhen factories, which show the most downtime—audit processes, maintenance schedules, and staffing.
- Use the Berlin factory as a benchmark, adopting its effective maintenance practices and operational workflows across other locations.
- Implement predictive maintenance using telemetry data to detect failures early and reduce unexpected machine breakdowns.

Conclusion

The analysis shows that downtime is driven mainly by a few high-impact machines and factories, especially the LaserCutter and the Seiko and Shenzhen sites. In contrast, the Berlin factory demonstrates strong operational efficiency. By focusing improvements on critical problem areas and adopting predictive maintenance practices, the organization can significantly reduce downtime and enhance overall productivity.