Increasing Manufacturing Throughput through Machine Learning

Actionable Insights • Accurate Decisions

Client

American subsidiary of an American multinational food, snack, and beverage corporation

The Problem

The client was looking for an analytics service provider for the Supply Chain Services Metrics team responsible for improving all key operational KPIs.

The Before State

A plant producing ~3000 lbs chips an hour has lower Operational Equipment Efficiency (OEE) due to the impact of the packaging segment stops contributing to fryer downtime/throughput reduction.

Large Equipment in the manufacturing line was operating well below capacity and had a high production waste.

Packaging Efficiency: Frequent Stops in one packaging line will increase other packaging lines' load and impact overall packaging efficiency.

Operator Effectiveness: Every Packaging Stop needs attention from the Operator, preventing them from performing other scheduled operational tasks.

Scheduling Challenges: Adjustment of Daily production planning to account for lines experiencing frequent faults.

The LatentView Solution

An early warning system to predict stops in advance (30, 60 & 180 minutes) in packaging & processing was developed.

We developed a Diagnostic Tool to spot packaging issues.

Our On-site coordinator visited the pilot plants to understand the operational process, which helped us derive features for modeling.

Approach

- Packaging stops data was used for attributing Processing Downtime and Throughput events
- The time-series data format was converted into a cross-sectional form for modeling purposes
- Statistical models were applied to predict and target Processing events
- Operational thresholds were found for key factors driving the event

Differentiating aspect of the project

- Identifying key factors to predict downtime/throughput reduction on an hourly basis
- Building a real-time visualization tool to monitor the key factors and take necessary mitigating actions

The After State

Incremental wastage reduction ~4500 lbs/month for POC plant.

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Additional output was gained by predicting downtime (13000 lbs/month) for the POC plant.

About: LatentView Analytics

LatentView Analytics is a leading global data and analytics service provider helping companies turn data into actionable insights to gain competitive advantage. As a trusted analytics partner to the world's most recognized brands, LatentView solutions provide a 360-degree view of the digital consumer, fuel machine learning capabilities and support artificial intelligence initiatives. LatentView's success is driven by a commitment to deliver unrivalled analytics solutions that enable Fortune 500 companies in the retail, CPG, BFSI, high tech, healthcare and other sectors to predict new revenue streams, anticipate product trends, improve customer retention, optimize investment decisions and turn unstructured data into a valuable business asset. LatentView has offices in Princeton, N.J., San Jose, Calif., London, Singapore and Chennai, India with more than 600 employees globally.

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