Sight Machine Helps Major Industrial Manufacturer Reduce Scrap Costs by 30% Within Three Weeks

BACKGROUND

A major industrial manufacturer was experiencing quality issues in the production of pressure sensors, which led to high scrap rates. In order to solve the problem and reduce the associated costs, the company needed to understand what was causing variance in the responsiveness of the sensors based on temperature changes.

THE SITUATION

- → **Quality challenges were leading to increased scrap rates and costs**
- → **Unable to determine root cause of variance under different temperatures**

The company produces high-end pressure sensors for jet engines and deep sea oil drilling rigs. The sensors need to be accurately calibrated to perform in a wide variety of environments.

The key technology is a piece of silicon that changes resistance as it flexes, due to applied pressure. This resistance change is measured to determine pressure. Ideally, sensitivity should be the same for each device (linearity).

The problem was that linearity was highly inconsistent — driving up scrap rates and labor costs — and the company did not know why. The manufacturer needed to determine the root cause by utilizing process and quality data. Early detection is critical for reducing loss of both time and materials because it could be months between the time the silicon chips are created and when they are used to produce the sensors.

THE CHALLENGE

- → **Gathering data was manual and time-consuming**
- → **Getting complete data from multiple sources was difficult**
- → **Unable to easily do meaningful analysis**

The company's manufacturing excellence team, which focused on the cost of quality, was tasked with identifying the root cause of the variance. The team was able to get traceability data from late-stage compensation testing all the way down to silicon batch production, and production data from the machines, but analyzing production and quality data at scale was a significant challenge due to manually-intensive processes.

The solution was rolled out in less than one month, thanks to three key factors: 1. The project had a cross-functional executive champion with accountability and responsibility. 2. Sight Machine was given access to engineers and data owners with knowledge of the manufacturing OT and IT. 3. Sight Machine and the company participated in 15-20 minute, Scrum-like calls multiple times per week during the setup.

THE SOLUTION

- → **Streamlined ability to join "noisy" data from multiple sources**
- → **Identified additional data sources to augment traceability**
- → **Delivered analysis capabilities to non-data scientists**

Sight Machine's analytics platform was brought in to automate the data acquisition, analysis and visualization processes. This enabled the company to eliminate the lengthy, manual effort to get right to ROI quickly. Sight Machine was used to solve a number of data challenges, including:

- → **Cleansing data from multiple sources.** A large amount of data was stored in spreadsheets and other sources in different formats. Sight Machine automatically adjusted for gaps and inconsistencies in the data.
- → **End-to-end product traceability.** The company's implementation of SAP could not trace all the data from end-to-end. Sight Machine was able to find other data sources to augment traceability.
- → **Automated root cause analysis and statistical process control to boost analysis capabilities.** The company wanted to perform wide scale analysis of data from multiple sources. Sight Machine's platform provides for automated analysis from upstream configurations of data.

RESULTS

$500K+ Savings Identified in 3 weeks

Implementing in Multiple Facilities

The company's goal for the project was to produce demonstrable ROI through scrap reduction and process improvement. At the end of the three week roll out, the company had already identified more than $500,000 in potential savings and is now implementing Sight Machine's solution to the other product types and remaining manufacturing lines in the facility.