LISTEN TO MACHINES: SOUND-BASED MACHINE ANALYTICS
Optimize Production Line Efficiency and Cut Operating Costs with Artificial Intelligence

THE BUSINESS CHALLENGE

Manufacturing sites must constantly ensure that production lines are functioning smoothly. This is especially challenging in sites equipped with decade old machines that are prone to functional anomalies. This is the situation that Nestlé was experiencing. On average, the maintenance team expected that every hour, each machine in their plant (up to hundreds of machines) could have a failure. Accordingly, each hour, line operators would abandon their tasks to manually check the machines - sometimes doing an empty journey, when the machines were running smoothly.

While this maintenance process is pivotal to ensure product quality and avoid hefty costs, the manual system was inadequate. Having a faster, automated way of tracking functionality was a key requirement for our client.

THE SOLUTION

Thus, our engineers developed a tool that could predict shutdowns earlier and more accurately, and allow operators to resolve or prevent the failures in a timely manner. The solution does this by:

- Collecting data from microphones on manufacturing lines to track machine sound patterns in real time
- Comparing live sound data with historical data labelled by manufacturing line operators to detect anomalies
- Signalling the discrepancy on a dashboard to notify operators in real time, in a centralized, use-friendly manner

The solution streamlines the process of anomaly detection and classification, notifies operators of issues and enables them to intervene in roughly half a second, thus increasing failure response speed and efficiency. Additionally, the real-time dashboard provides operators with a much needed comprehensive overview of the production plant, such to localize where the majority of failures occur, and act on their biggest weaknesses. The model continues learning in real time, and constantly improves its identification and classification of anomalies.

BUSINESS IMPACT

0.5s

Reaction time to machine anomalies

Efficiency

Increased efficiency and reduced operating costs

*Watch a presentation of this case study from our CTO, Timon Zimmermann.*

Want to know more? Contact us at contact@visium.ch or visit www.visium.ch