

# CASE STUDY

## Leveraging Process Compliance to Improve Product Quality

One of the largest manufacturers of home appliances serves 65 countries around the world. Following an incident that occurred in 2019, the company saw the need to rethink its supply chain. At first, the company had no visibility into how parts were produced and they found it difficult to verify whether these parts were produced within optimal production parameters. Faced with the problem of quality defects in the brush component of its signature stick vacuum, the company needed a solution that will lead to a reduction in faulty parts. Additionally, the company recognized the need to redeem its reputation. After meeting with the supply chain executives of the company, they agreed to install eMoldino's sensors on their toolings. Using mold life cycle charts and alerts, eMoldino was able to reduce unplanned production downtime by 4%, leading to an outstanding improvement in the company's production asset health and part quality. Additionally, our process anomaly analysis revealed a significant reduction in defect rate.

### Customer Challenges

The company maintains a significant number of toolings with its multiple suppliers. The lifecycle of these toolings play a significant role in the quality of the parts produced. The parts must be engineered carefully due to quality concerns to prevent product recalls. During a 3-year period of production, about 12% of the company's vacuum brushes started to malfunction which negatively affected the reputation of the company. In response, the company sought a solution that will effectuate end-to-end visibility supported by data analytics in its products parts manufacturing.

### Customer Challenges

- Improve Parts Quality
- Redeem its Reputation

### eMoldino Control Tower Solution

- Implement Process Anomaly Analysis
- Provide Mold life Cycle Charts

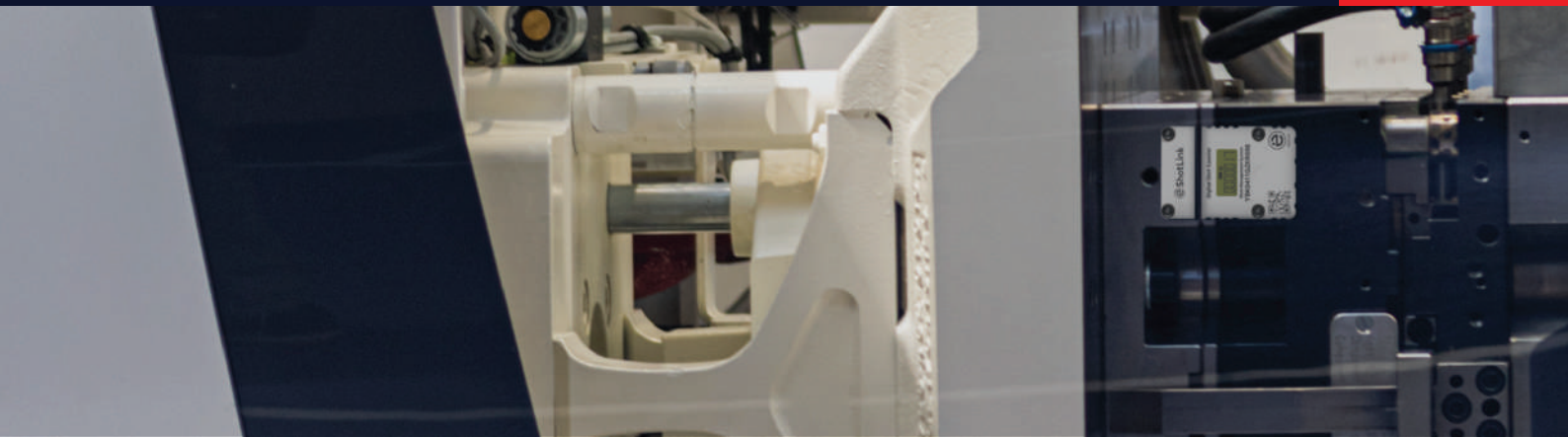
### Client Benefits

- Improvement in Quality of Parts Produced
- 4% Reduction in Unplanned Production Downtime

Through eMoldino's data processing, the company's supply chain executives were able to visualize and record data analytics specific to overcoming their challenges and achieving optimal efficiency in their supply chain.

### eMoldino Control Tower Solution

In an industry where parts quality plays an essential role in preventing product recalls, eMoldino utilizes AI/ML to leverage data in parts quality prediction. eMoldino's understanding of the current challenges



facing the home appliance industry is evident through the solution provided to the home appliance manufacturer.

**Process Anomaly Analysis:** In a bid to help the company produce quality parts, eMoldino implemented a process compliance assurance solution by providing a dashboard where the company could monitor process conditions and detect when deviations in cycle time, and temperature occur. This is made possible by examining the performance of its toolings. Using eMoldino's solution, our team was able to determine whether their toolings were showing normal or abnormal process conditions based on the temperatures of their molds. As molds must be operated within a certain optimal temperature to ensure quality parts production, we provided a platform that made it possible to measure the exterior temperature of the company's molds. This is usually done every few minutes to track temperature changes during the operation. In the end, this ensured consistent quality and lower estimated reject rates.

In collaboration with their team of supply chain experts, we discovered that less than half of the shots from their installed toolings were found to be deviating from the approved cycle time, indicating problematic performance. There was a below-average cycle time compliance observed, providing ample evidence that inconsistent production processes were leading to the production of substandard parts. The deviations in process conditions could be an indication that the tools were faulty or needed repairs.

To compensate, eMoldino was able to improve supplier compliance with cycle times to an above-average level after follow-up inspections. This resulted in a substantial amount of reduction in defects, thereby optimizing the cost associated with producing a single part. By examining parts produced outside of optimal process conditions in relation to the production costs, it revealed a significant waste in cost.

**Production Pattern Analysis:** Lack of access to real-time data over key process parameters was detrimental to the company's production output and quality. However, by implementing a production pattern analysis in each manufacturing facility, the company was able to compare suppliers' strengths and weaknesses in various parts production.

**Mold Life Cycle Charts:** Knowing that parts quality positively correlates with molds' health prompted eMoldino to provide a solution that was able to help estimate when the company's molds will reach the end of their life cycle and when maintenance tasks are required. This was made possible through alerts and charts provided, helping the company focus on the most impactful alerts to reach a suitable conclusion. By reducing the reject rates to maximize their molds' lives, eMoldino's solution helped the company save significantly in production costs.

## Client Benefits

Trusted by global brands, eMoldino's solution powered by AI and data analytics helps global companies not only achieve quality compliance but also overcome late part delivery, poor asset management, increasing costs, and mold maintenance-related issues. By collecting data through our IoT sensors and subjecting the data to



further analysis on the eMoldino platform, we provide relevant information that helps companies solve their manufacturing pain points.

The impact of the control tower solution powered by the sensor technology provided real-time and accurate data over the company's assets with regards to the maintenance and process parameters. This enabled the home appliance company to have visibility into their mold performance and provided them with predictive maintenance capabilities. The dashboard provided included maintenance alerts that informed them in real-time when repairs were needed to be done on their molds. This enabled the company to schedule appropriate maintenance actions based on the forecast, allowing them to significantly reduce unplanned production downtime by 4%. Additionally, eMoldino's process anomaly analysis showed a significant waste in cost by the company.

Following the partnership with the company, the solution provided a more precise scope of product recalls through a significant reduction in defect rate, thus helping the company redeem its image. This led to tremendous savings in manufacturing costs.

## Quote

"A total overhaul of every facet of our production process was inevitable but we had no idea how to begin. Working with eMoldino has enabled us to regain trust from our valued consumers, redeem our image while producing at an optimal speed to reach the market faster. The partnership has consolidated our efforts in developing products that meet our customers' needs."

– Company Procurement Manager

## About eMOLDiNO

eMoldino is an enterprise-level solution provider that specializes in cultivating digital transformation in the supply chain of fortune 500 partners worldwide. By utilizing cutting-edge technologies, such as AI and machine learning, eMoldino delivers data driven business intelligence to lead the industry 4.0 movement.

Our mission is to help global manufacturers rethink supply chain management, driving true corporate innovation and bring customer experience into the cycle.

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