



Enabling AI in manufacturing

## Using AI to reduce product quality issues in manufacturing

Reduced production faults by

**40%**

Improved product quality  
Increased process efficiency  
Reduced process downtime

### Executive summary:

*Tecnocom, the top PVC compounds supplier in Argentina, successfully implemented an AI-driven solution by NOW to detect production line failures. Through video processing, AI algorithms identified colorimetry changes and bulking patterns, enabling early detection of faults. As a result, faulty production decreased by 40%, improving product quality and customer satisfaction. The early detection system streamlined operations, reducing costs and enhancing efficiency. This case study highlights the transformative impact of AI in manufacturing, ensuring timely identification and correction of faults for enhanced productivity and brand reputation.*

### Business needs:

Tecnocom, the leading supplier of rigid and flexible PVC compounds in Argentina, faced a critical business need to address production line failures promptly. The company aimed to improve product quality and reduce faulty production resulting from colorimetry changes and bulking of PVC compounds. Traditional manual inspection methods were insufficient to detect faults early, necessitating an innovative solution to enhance their manufacturing process and maintain their reputation as the top PVC compounds supplier.

### Business results after AI implementation:

- **Reduced Production Faults by 40%:** Early detection through AI led to a significant drop in faulty production, improving product quality.
- **Cost Savings:** Timely fault identification saved costs on materials, labor, and energy consumption.
- **Improved Operational Efficiency:** Streamlined production processes minimized downtime and boosted productivity.
- **Optimal Supply Chain:** Early fault detection improved supply chain management.

## Using AI to detect product quality issues

### Overview:

Tecnocom, Argentina's leading supplier of rigid and flexible PVC compounds, faced a critical business challenge of promptly identifying and addressing production line failures to improve product quality and reduce faulty production. To tackle this issue, they engaged the services of NOW, an AI solutions provider, to implement an innovative AI-driven solution for early detection of production line failures through image processing.

### Situation:

Tecnocom's PVC production lines were experiencing occasional failures resulting from colorimetry changes and bulking of PVC compounds. These issues increased faulty production, impacting product quality and overall operational efficiency. Traditional manual inspection methods were inadequate for identifying these faults promptly, necessitating a more advanced and automated approach to ensure timely detection and corrective actions.

### Approach:

NOW proposed an AI-driven solution based on video processing over the PVC production lines to identify and detect failures caused by colorimetry changes and bulking of PVC compounds. The implementation combined On-premise and Cloud-based technologies for efficient video processing and pattern detection.

**Video Processing:** NOW developed an AI-powered video processing system that continuously analyzes real-time footage from the PVC production lines. This system could efficiently capture and process vast amounts of



video data, making monitoring production processes in great detail possible.

**Failure Detection Algorithms:** Advanced AI algorithms were implemented to identify the PVC compounds' colorimetry changes and bulking patterns. These algorithms were trained on a diverse dataset of normal and faulty production instances to enable accurate and reliable failure detection.

**Early Warning System:** The AI system triggered an early warning alarm upon detecting a colorimetry or bulking anomaly. The alarm alerted the designated personnel overseeing the production lines, enabling them to halt production promptly and investigate the cause of the fault.

### Outcome:

Implementing NOW's AI-driven early detection solution significantly improved the PVC production process and overall product quality for Tecnocom.

**Reduced Production Faults by 40%:** With the AI-driven early detection system, Tecnocom witnessed a substantial 40% reduction in faulty

## Using AI to detect product quality issues

production. The ability to detect and stop production lines as soon as anomalies were detected allowed for quick corrective actions, preventing the production of substandard PVC compounds.

**Improved Product Quality:** By preventing faulty products from reaching the market, TecnoCom observed an enhancement in product quality. This improvement boosted customer satisfaction and strengthened the company's reputation as Argentina's leading PVC compound supplier.

**Enhanced Operational Efficiency:** The early detection system streamlined production processes by minimizing downtime and waste from faulty production. This optimization led to increased operational efficiency and reduced production costs.

### Conclusions:

The successful implementation of NOW's AI-driven early detection solution proved to be a game-changer for TecnoCom, Argentina's No. 1 supplier of rigid and flexible PVC compounds. The advanced video processing, coupled with AI algorithms, enabled the timely identification of colorimetry changes and bulking in the PVC compounds, significantly reducing faulty production. As a result, TecnoCom experienced improved product quality, enhanced operational efficiency, and strengthened its position in the PVC compound manufacturing industry. The collaboration with NOW demonstrated the potential of AI solutions in transforming traditional manufacturing processes and addressing critical business challenges effectively.