



# ARMAL

## CASE STUDY

Industrial IoT for monitoring production

- Industry 4.0
- Production optimization
- Remote monitoring
- Energy consumption reduction

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## DISCOVER HOW ZERYNTH SUPPORTED ARMAL IN DEVELOPING AN IOT SYSTEM THAT ALLOWS REMOTE MONITORING OF THEIR PRODUCTION MACHINERY PARAMETERS.

**20**  
YEARS Machines' age to digitalize

**40%** Power consumption reduction

**4**  
MONTHS Return on IoT Investment



*Thanks to the collaboration with Zerynth, we have a real-time IoT monitoring system of our production line that allowed us to reduce the energy costs of machinery by 40%, recovering our investment made in IoT technology in just 4 months.*



Andrea Fornarelli - CEO, Armal

**Industry**

Plastic

**Asset**

Injection Molding Presses

## The Challenge

Process optimization, today, is a key factor for any manufacturing organization to reduce the time of **production cycles, increase product quality, and reduce costs.**

Armal has injection molding machines that produce plastic components of different sizes. Each machine has an average lifetime of 15-20 years, however, at the production level they are still in good condition. Concurrently, Armal needed to modernize their entire workflow in order to remotely monitor the machines and optimize their production.

One of their main problems was tremendous energy consumption. Armal was unable to monitor the performance of the machines, so they were looking for a solution that was capable of **controlling the energy consumption of each machine** in real-time so errors could be eliminated and they could proceed with improvements on the systems themselves.

Another problem was wasted time calculating and **monitoring the quantity of products produced.** Accordingly, Armal urgently needed to automatically calculate their produced products so manual work could be reduced and the number of defective components could be minimized. Another challenge was storing the data regardless of connectivity because the machines didn't have any internal storage capabilities.



## The Solution

The Zerynth team provided Armal with an Industrial IoT Platform for real-time monitoring for power consumption of their industrial machines and the entire production cycle.

An Edge Device was installed on each machine to collect 4 signals in retrofitting mode. Thanks to this collection of signals and their derivatives, Armal is **now able to monitor their entire production flow** from simple dashboards with the purpose of making machine data easily analyzed by Management, and being able to make strategic decisions. A monitoring system for the lighting system in the production plant was also implemented in order to optimize energy consumption.

Zerynth Platform shows information about the status of machines (on/off/alarm), the amount of energy consumed for certain periods of time, and **allows comparison of current data with historical data**. The dashboard also allows constant production performance monitoring by being able to control the number of injections, cycle times, automatic production time, manual production time and alarms for each machine.



## The Results

### Increased Automation

24/7 remote monitoring

### Improved Production

More accurate production KPIs

### Decreased Consumption

€€€ saved by optimizing power consumption

## Why did ARMAL choose Zerynth?

Armal has successfully completed its digitalization journey by obtaining an IoT solution capable of real-time power consumption monitoring for each machine. Thanks to this process, the costs for energy consumption of their machinery has been reduced by 60% compared to the earlier technologies used, and by 40% compared to the previous generation. In only 1.5 years Armal recovered their implementation costs. Moreover, in only 4 months their investment, made in IoT technology, was recovered.

Zerynth technology enables Armal to calculate the time required to produce 1 component for each type of machine, as well as monitor the total number of produced products, in real-time. Armal is planning further improvements to their monitoring process: they would like to manage the product traceability for each machine in order to calculate the production costs of each individual component, compare it with the production plans, and send automatic notifications if the target is not reached.

## About Zerynth?

Zerynth enables companies to streamline production processes and increase the value of connected industrial products. Through a plug-and-play IoT & AI platform, we connect any industrial machine, allowing for a complete 4.0 transformation quickly, flexibly, and securely.

Founded in 2015, Zerynth has grown steadily. Today it has 40+ team members with deep IoT expertise and industry knowledge with over 150 customers across many industries: from manufacturing to agriculture to energy to logistics. Zerynth is based in Pisa, Italy, but also is active in international projects, and foresees an expansion both in EU and non-EU countries during the next three years.

### GET START WITH ZERYNTH

*Ready to see what Zerynth can do for your business?*

**LET'S TALK!**

