

# Predictive Maintenance for Industry 4.0



# Project 'Zero Downtime': How to Start Predictive Maintenance

*"These days, you don't fix things when they break  
but right before they break."*

Regular maintenance and inspections have been the order of the day to ensure the maintenance of all equipment, machines, components or technical devices in general. In the age of Industry 4.0, these precautionary measures are supplemented and substantially enhanced by Predictive Maintenance (PdM).

This proactive type of maintenance is almost symbolic for Industry 4.0 and promises the greatest success.

## More Than Just a New Type of Maintenance

One of the most straightforward applications of predictive maintenance is to monitor a production line, e.g. with a vibration sensor or microphone. As soon as there are irregular vibrations or changes in operating noise, they may be the first signs of early breakdown.

With predictive maintenance, things would have been different:

- Sensors detect critical parameters such as temperature, vibration or humidity.
- The readings are aggregated and checked for anomalies in real-time. An unusual vibration pattern with a simultaneous rise in temperature could, for instance, suggest an imminent engine failure.
- The system, which has been trained with the help of machine learning, sounds an alarm when data patterns become conspicuous - long before the system finally fails causing significant damage.

### **The result:**

With predictive maintenance, unscheduled maintenance downtime is a thing of the past.

## Tangible Benefits?

- No unscheduled maintenance downtime
- Lower maintenance costs
- Increased turnover and profit
- Better security for employees and customers
- Stay fit for the future

ASM  weber  SYSKRON 

 thyssenkrupp  GÜDEL 

# 6 Steps to Your Successful Predictive Maintenance Project

Anyone who introduces predictive maintenance must solve all the sub-problems of Industry 4.0: From networking and storage to business logic. This requires the right approach:

- **Define Project Goal**  
Increasing uptime or optimizing spare part logistics are some examples of possible project goals.
- **Identifying Stakeholders**  
Be it shop floor workers, IT or the workers' council: a strategic project, such as predictive maintenance, requires the cooperation and participation of many parties.
- **Define Intermediate Goals**  
Introducing predictive maintenance takes time. Intermediate steps, like the implementation of condition-based monitoring, allow companies to benefit from the increased level of digitization at an early stage.
- **Retrofitting Sensors**  
Often, existing sensors can be used. Where no sensors are available, legacy machines can be retrofitted at low cost.
- **Ensure Data Transmission**  
Sensor data are to be transmitted electronically to a central IT system. For this purpose, suitable transmission channels must be set up.
- **Clarify Data Retention and Operation**  
A coherent operating concept is required for the vast amount of data that has to be collected. elunic offers its customers proven standard solutions to accomplish this task.



Reduction of Service Times and Costs through **Predictive Maintenance**

## Start Small to Achieve Great Things

Once the technical prerequisites for collecting and processing the sensor data are in place, we recommend starting with a small pilot project.

To do so, it is sufficient to visualize a selected parameter, such as the machine temperature. By observing the data series, the project team gains valuable insights into the process observed and its underlying cause-effect relationships.

Once it was determined which sensor signals and anomalies precede a machine problem, a prediction model can be developed that forms the basis for predictive maintenance.

## elunic AG: I4.0 Competence for SMEs

Every company must face the digital transformation trend and make the transition from a traditional machine manufacturer to a software company. The project management should be carried out internally to build up competency in-house.

With an experienced I4.0 service provider like elunic, companies can accelerate their digitization process considerably. We also support you in choosing the right technology and the best methodical approach from the wide range of possible options.

Successful companies have chosen elunic as their business partner, because:

- **Experienced partner for I4.0 & predictive maintenance**  
Dozens of medium-sized companies have successfully entered the I4.0 age with elunic. With its 15 years of experience, the service provider, based in Munich, will also make your digitization project a success.
- **Well connected**  
I4.0 projects succeed in cooperation with manufacturers and suppliers only. elunic's network has been benefiting its customers all around and, thus, enables fast decision-making and access to best practices.
- **On-Stop Strategy and Platform Provider**  
elunic designs tailor-made I4.0 strategies for its customers. The in-house software platform allows for quick implementation and rapid project success.

Consulting, development & integration of your AI projects - all as a one-stop solution.

**elunic AG**  
Erika-Mann-Str 23  
80636 München  
T: 089 / 4161 737 - 30  
info@elunic.com  
[www.elunic.com](http://www.elunic.com)

