



PREDICTIVE MAINTENANCE, ENABLED BY IOT DATA

Good maintenance is the only way to keep machines running continuously. With the help of the IoT, among other things, we can determine the perfect moment to carry out maintenance, taking anticipated events into account. You can take a look into the future and decide for yourself what it should look like.

PREDICTIVE POWER

By capturing data in the Internet of Things (IoT), you can have a lot of data available. Thanks to the IoT, machines can talk to each other, but we can also amass large volumes of data on which we can run a whole host of analyses. Even older machinery installations can be monitored by the insertion of an additional IoT device. Using the Internet, the input from the sensors can be made directly available. With this, we can predict patterns and uncover the life cycles of components, then align maintenance to these. One of the conclusions might be that there are further parameters (that we had not been monitoring in the past) which give better indications of when something is likely to go wrong. In this way, we can discover measurable correlations with huge predictive power.

A PERMANENT EAR

Nowadays, data from multiple sensors can be transferred over the IoT to an Internet platform for analysis. It is possible to combine other data sources, such as the history of the machine's operations, maintenance history, production data (production quality, product failures, production downtime, etc.) with the data input from a variety of sensors, as well as environmental data such as temperature, humidity, air quality, etc. Big data has no value without analysis; it tells us little without comparing the parameters with breakdown data or with the standard values for machines. Data scientists can use machine learning algorithms to create a predictive maintenance model. Based on changes in one or more parameters, the model predicts when asset failures are likely to occur. As more data is kept, the model can also be further tuned.

BENEFITS

High asset availability

Using the PdM model, you can avoid downtime by timely intervention in your maintenance plans, proposing the necessary machine modifications and carrying out appropriate maintenance. Not only are your production staff happier, but your end customers also certainly appreciate the timely delivery of their products.

Reduction of maintenance costs

Insight into future machine malfunctions and failures helps you improve the organization of your maintenance. This can mean less unnecessary maintenance, with immediate cost savings. In addition, the possible negative impact of maintenance work is reduced. Major gains in efficiency are certainly available when you can plan maintenance work better. For scheduled work, you can consider how best to deploy qualified technicians, plus the availability of both materials and any required downtime for the asset. You avoid overtime and the unavailability of materials, which can save you a lot of money.

Improved asset reliability

Using predictive maintenance you raise your safety to a higher level. Looking at the current operation and the predicted failures of dangerous assets (and dangerous substances) reduces health risks and accidents.

PdM project



Identify critical assets with data

Identify data (CMMS data, sensor, RCA, environment, ...)



Select assets for pilot project



Prescribe actions to be taken in CMMS



Monitor data using the PdM model & Dashboards



Predict failures

Use data analytics & machine learning



Creating a knowledge base

By storing data you create an important source of knowledge. This is then enriched by analyses, machine learning and testing the PdM model against reality.

Applying a new business model

As the OEM of a device or machine, PdM opens up a whole new world where you can do more than just deliver a product to your customer. You can offer your customers the guaranteed use of your products as a service. For example, you guarantee the running hours of the motor you supply, monitor the operation of the motor via sensors, and offer maintenance services over a collaborative platform with your customers and suppliers. This allows you to generate additional revenue streams, because your customers get much better asset availability and service.

REALDOLMEN WILL GUIDE YOU THROUGH THE IOT LANDSCAPE, AND WILL SUPPORT YOU IN YOUR PDM PILOT PROJECT

Realdolmen is one of the few ICT partners in Belgium that can handle all aspects of an IoT project. We have the knowledge and infrastructure in-house to make such projects a success. We work with partners (in an ecosystem) to construct your end-to-end solution. This allows us to further develop the available platforms until they fully meet your needs. Realdolmen has also developed its own platform that can be implemented quickly and easily in Azure, AWS, Google, IBM, etc. It is modular and therefore easy to personalize to match your project and your wishes. It is also compatible with almost all devices or data types and is scalable (Cloud, VPC, Hybrid). We can also integrate your IoT architecture with your current IT landscape or with IoT platforms in the cloud.

We can support you every step of the way in your PdM pilot project. Realdolmen has the necessary expertise in each of the following domains:

- **Asset selection:** Which assets are critical to your production process or guarantee the proper functioning of your installation or machine? Improvements in the maintenance of these assets will provide you with the most value.

- **Data identification:** High quality data is very important. We investigate the availability (historical and current), relevance, reliability and quality of your existing data.
- **Data exploration:** Our data scientists set to work on the data, using a variety of analysis tools and machine learning to convert the data into a Predictive Maintenance model. The model uses algorithms based on the trends and history of one or more parameters to indicate when asset failures are imminent.
- **Data monitoring:** Interaction with the maintenance staff is crucial in testing the model against reality. Dashboards and reporting are important for communication with engineers. As more data is kept, the model can also be further tuned.
- **Predict & Prescribe:** The model helps to improve maintenance. The output of the model can be integrated into the CMMS to control predictive actions. In the final phase, additional artificial intelligence can be applied to take the last step towards prescriptive maintenance. This involves the system using the CMMS to make proposals with regard to desirable actions.

WOULD YOU LIKE TO FIND OUT MORE?

Be sure to visit our website www.realdolmen.com to stay updated on our latest news and events.

Would you like to contact us straight away? Simply send an email to info@realdolmen.com or call us on +32 2 801 55 55.