

Smart manufacturing – unlock the key to success

Companies today face constant pressure to be more competitive and efficient in how they produce a range of standards and guidelines, as well as complex client specifications. In addition, companies increasingly want to conserve energy and manufacture their products using sustainable resources. So how can plants and processes be optimized while at the same time achieving operational goals in an environmentally aware and continuous manner?

5 STEPS TO A DIGITAL FACTORY:

- **1.** M2M communication: let your machines talk to each other
- **2.** Connectivity: provide transparency at all levels
- **3.** Analytics: contextualize information from valid data
- **4.** Usability: think in a user-centric manner
- **5.** Scalability: stay open and agile for the latest developments





Smart and interdisciplinary networking – from the smallest device to the entire factory – is how you can prepare a production plant for the future. In a smart factory, material flows manage themselves and production areas communicate with each other. The equipment can be scaled up flexibly and easily adjusted down to a batch size of one. Production in a smart factory conserves resources and is a sustainable solution: only the energy actually needed is consumed. As a result, the improvement of these plants in an intelligence-led, iterative way is virtually unlimited. According to current estimates, the potential for savings in the food and beverage industry alone is 50 billion US dollars per year.

The zenon software platform supports you in transforming your plant into a digital smart factory and thereby increasing your overall equipment effectiveness (OEE). You will benefit from a modular concept that ensures communication not only between machines but also across different levels in the company. This connects the production and management levels and, thus, improves the competitiveness of your business. Over 300 native zenon drivers enable the processing of large amounts of data in heterogeneous industrial landscapes. This also supports your digitalization strategy across locations. Additionally, the zenon software platform reduces the complexity of your big data projects.

How zenon supports your digital transformation

ENERGY DATA MANAGEMENT

Do you want to receive and analyze detailed information about your energy consumption, and develop steps to make your production equipment and processes more efficient?

- Identify the potential for savings
 by linking your production data to
 the actual energy consumption
- Benefit from visualization of all consumption data related to your machines and processes, or the entire production site, and break down the energy requirements transparently
- Work with an end-to-end platform that allows you to directly intervene in and control processes
- In the event of an issue, notify the responsible personnel automatically via SMS or email
- Establish an ISO 50001-certified energy data management system with zenon
- Make well-informed decisions
 using customized reports in realtime or based on stored data.
 Display energy performance
 indicators, trends or complex
 diagrams in a variety of formats.
- Collect back-up data either locally or in the cloud

FLEXIBLE AND CONDITIONS-BASED PRODUCTION CONTROL

Do you want to map out your equipment and process landscape in a clear, resource-efficient manner and readily achieve your operational goals?

- Benefit from zenon, a SCADA
 application Supervisory Control and Data Acquisition that controls and monitors your entire plant in detail
- Bring together heterogeneous hardware and software landscapes in a networked overall solution: zenon's scalability does not restrict your growth or the implementation of later requirements
- Monitor the status of production on mobile devices and acknowledge alarms at any time, anywhere

- Create and distribute reports on standardized and company-specific KPIs quickly and easily
- Analyze the data from your equipment in real-time and based on historical values
- Identify causes of inefficiency, such as equipment downtime, material bottlenecks, delivery delays or breakdowns
- Find additional production capacity through performance analysis
- ► Contextualize data for further use in all higher-level systems
- ▶ Work with user-friendly and

- customized interfaces
- Trust in certified security, for example, BACnet for building automation
- Keep track of multiple locations: zenon can be scaled up to a cloud application, and performance can be compared using cross-site dashboards



Better than a crystal ball: zenon Predictive Maintenance provides an opportunity for facility management to be ready for the future

PLANT PERFORMANCE AND PREDICTIVE MAINTENANCE

Do you want to know when a machine needs to be serviced or a component has to be replaced, in order to avoid unnecessary equipment downtime?

- Monitor all relevant device data in real-time: temperatures and pressures, electrical voltages or mechanical vibrations, and much more
- Schedule future production activities and processes using dynamic virtual forecasts
- Get alerts and archive interventions
- Notify service technicians via SMS or email, and grant remote access (client workstations, web server)

- Optimize plant performance with intuitive reports to pinpoint error types and frequency
- Avoid peak loads and the associated additional costs of energy consumption with the help of continuously calculated consumption forecasts
- Support the operator or service technician with specific help videos, plans or PDF files for increased efficiency

- Benefit from reliable data exchange using artificial intelligence such as Azure Machine Learning or SAP
- Leverage services from the Microsoft Azure cloud computing platform to harness data with machine learning

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