



thyssenkrupp

Insights\_Polysius



# Digitization improves processes

Oldenburg. Dieter (38) blinks as the morning sun reaches his eyes. He glances at the clock – only half past six. “Alexa, lower the blinds again and wake me up in an hour.” As the room gradually darkens Dieter gently falls asleep again.

Erfurt. Driving along a country road, Janine (23) hears a strange noise from the engine. She reduces her speed and heads for a garage. “Can you take a look at it?” The mechanic connects his laptop to the vehicle and quickly finds the fault. A few adjustments and Janine can continue her journey.



Bochum. Johanna (32) moves her deckchair a little further into the shade so she's not blinded by the sun. She returns to her book as a small robot whirs around her mowing the lawn.

Digitization has long since found its way into many areas of our lives: Voice-controlled computers make our everyday lives more convenient, digital diagnostic devices communicate with our cars to detect faults in seconds. And robot helpers are taking on more and more tasks in the home and garden. There is hardly an industry that remains unaffected by digitization. thyssenkrupp Industrial Solutions has recognized this and is putting its faith in smart digitization coupled with specialist knowledge. The key word is [digitized expertise](#).

Industrial facilities – be they quarries, cement works, steel mills, coke plants or chemical factories – and machines are complex high-tech structures in which a wide range of precisely coordinated processes take place. As in a living organism, each step must be exactly matched to the others. Everything is interconnected. Take for example a chemical plant for the production of polyether polyol, an important intermediate product for the plastics industry. To make polyether polyol various intermediate steps are necessary. First, hydrogen peroxide is produced, which is then used for the synthesis of propylene oxide. Finally this propylene oxide is used to produce polyether polyol. Each of these processes in turn consists of a whole series of individual sub-processes working together like the gears in a clock.

For this clock to function smoothly, careful management and monitoring are essential – over the entire lifecycle of the plant. Thanks to many years of experience as reliable partners in the engineering, procurement and construction of such plants all over the world, the experts at thyssenkrupp Industrial Solutions can draw on a wealth of expertise in plant and process design. Performance increases or the resource use during plant operation can thus be predicted extremely realistically.

With its [360-degree service](#), thyssenkrupp Industrial Solutions offers its customers all-round, worry-free support – from management of spare and wear parts to repairs and on-site support, modernization and rebuilds through to plant management, including advice from experienced experts. The digital services on offer range from drone inspections to remote maintenance and comprehensive monitoring of plant performance. All installations are monitored and their performance analyzed throughout their lifecycle. Digitization and expertise are always closely interlinked – this unbeatable combination produces algorithms for a wide variety of plants and machines. Reliable predictions can only be made when both sides work closely together. Damage or unplanned downtimes are thus avoided – which is good for operating costs and good for occupational safety.

The PlantScan 3D method also helps here: A laser scanner maps the entire plant and individual machines, in some cases down to component level, and transfers the data to a three-dimensional model. The result is a millimeter-precise image of all buildings and installations. New builds and rebuilds can be simulated precisely to scale before they are implemented. The method can also be used for wear analysis on machines to prevent breakdowns. The non-contact PlantScan 3D method also scans inaccessible areas of the plant and avoids downtimes and risks in project execution due to time-consuming measurements.

[Guarantee for long-lasting efficiency](#)

The plants supplied by thyssenkrupp Industrial Solutions are often in operation for 30 to 40 years. Plant operators therefore often have to contend with changes in operating conditions. For example, environmental regulations may change or raw materials may no longer be available in the usual quantity and form. To ensure that plants are always in line with current requirements and to increase their efficiency, revamps and upgrades are necessary. Digitization plays an important role here, for example through the digital modeling of plants for better planning of revamps or upgrading with sensors. Remote-controlled ship unloaders and bucket wheel excavators, digital inventory management and automated storage systems are just a few examples of solutions that increase the productivity of processes, increase occupational safety and reduce operating costs. Building Information Modeling (BIM) provides architects, designers and plant operators with a collaboration tool allowing information to be exchanged and agreed upon right from the start of the planning phase.



---

**The bottom line:** The combination of the analysis of valuable process data and the expertise of thyssenkrupp Industrial Solutions' engineers makes plants in numerous industries as safe, efficient and resource-friendly as possible – whether it's in the manufacture of fertilizers, in polymer and electrolysis plants, refineries, coke plants, steel mills, cement works or in the mining sector.

---

