



## YOU'LL NEVER WALK ALONE IN A TOUGH ENVIRONMENT. CLOSE TO CEMENT CUSTOMERS WITH REMOTE EXPERT SERVICE

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by Thorsten Nogli, Michael Gottschalk and Jennifer Richardt, thyssenkrupp Industrial Solutions AG Business Unit Polysius, Germany and Daniel Mirbach, oculavis GmbH, Germany

**Networking, automation, and data-driven services** provide valuable insights into production processes and lead to a customer-centric orientation. Excellent services are the key to create **decisive added value** for customers. thyssenkrupp Polysius recognized this opportunity at an early stage and pushed ahead with the implementation of innovative technologies to optimize technical service processes. Remote services are an important component of today's comprehensive customer support.

As the leading full-service provider for the cement industry, the Business Unit (BU) Polysius of thyssenkrupp Industrial Solutions offers its customers worldwide seamless, fast, and holistic support for more than 800 cement plants with more than 17,600 machines and systems. Optimizing plant performance and availability and thus reducing total operating costs are the main goals.

Service was, is and will be „people business“. It thrives on partly long-standing business relationships and trust. During the Corona crisis, which made traveling to provide on-site services impossible, the service team **demonstrated reliable customer support using remote expert service when systems threatened to come to a standstill.**

Innovative services have been boosted and have demonstrated that machine-related operations such as **maintenance, servicing, short-term troubleshooting** and even commissioning as well as **startup of new plants** can be successfully carried out remotely.

With the **polysius® connect solution**, a comprehensive remote service has been developed that includes general remote applications, as well as for automation and operational support during commissioning and daily plant operation. About 120 experts provide efficient remote assistance and ensure that machine and plant downtimes are minimized. In addition, thyssenkrupp is building digital business models on this foundation.

### Boosting a century-young company into the digital age

For the Business Unit Polysius, remote expert service is basically not a new discipline. The offering already existed before the Corona pandemic, but travel restrictions and distance regulations decisively triggered the need to change “traditional” process.



Close to customers with remote expert service

Equipped with competencies, responsibility and focused aim, the service team seized the chance and started expanding digital services. Within four weeks, the right remote software solution was found in oculavis SHARE, industrial-grade hardware was defined, existing processes were analyzed and redesigned, use cases were determined, experts were trained, and key users were selected. Furthermore, a business model was set up, and the new service offering was communicated transparently to customers.

### Mechanical stress on machine and plant parts

The cement industry is raw material-, energy- and emission-intensive. Production takes place where natural limestone deposits can be found. Construction sites are noisy, dusty and, depending on the production site, hot or frosty. The **demands on human and machine are extreme** to ensure economically operation of crushers, transport equipment, mixing beds, rotary kilns and grinding systems.

Despite careful engineering, the mechanical stress on machine and plant components in a complex production process is high. At the same time, increasing outputs of significantly more than 20,000 tons of cement per day require an **efficient service management**.

### Remote expert service: the new normal

Remote access and remote control on cement plants have been used so far. Experts can measure certain values such as vibrations or temperature, indicate deviations, and avoid damages or even total machine downtimes.

By implementing remote expert service in the existing portfolio OEM specialists are empowered to provide technical knowhow via live support **within hours instead of being blocked with a long business trip** to the client. This is particularly beneficial when the situation is ambiguous and a rapid need for action is necessary. Through numerous site jobs, remote services are no longer the future, but rather **“the new normal”**.

## More than just a video call function

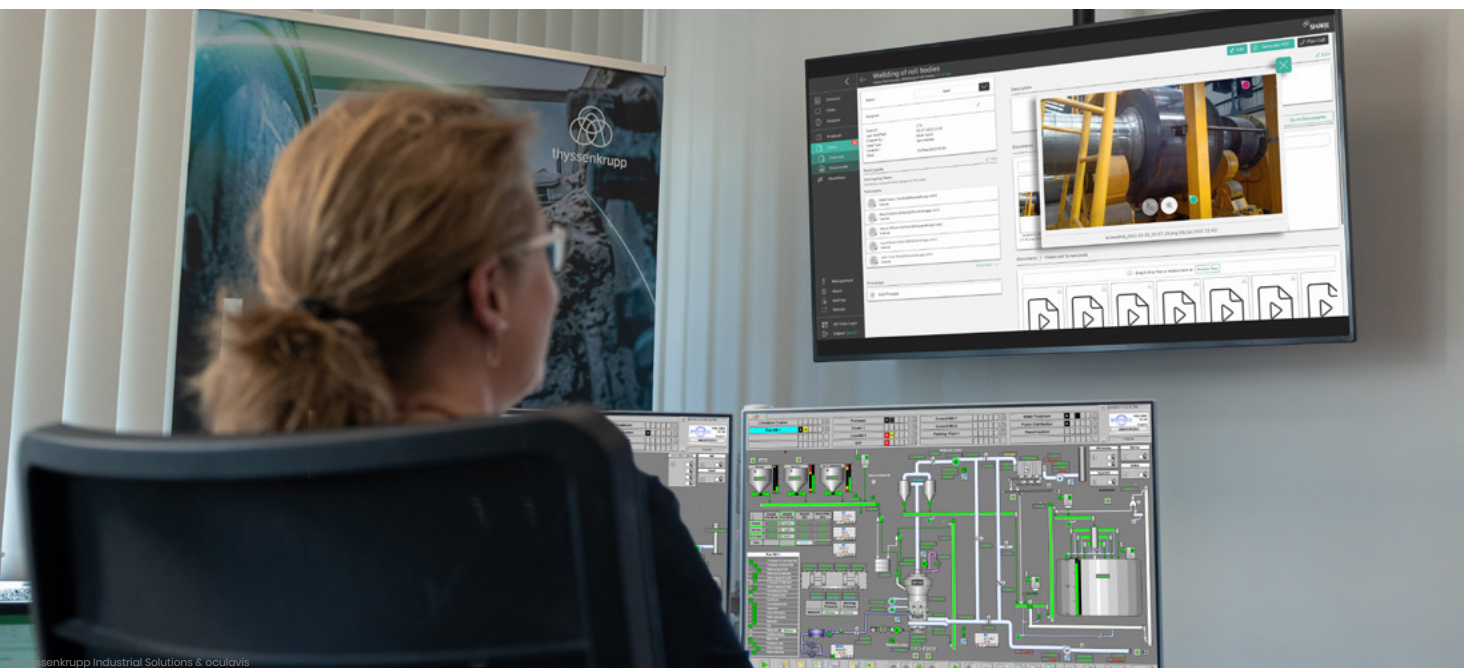
The digital support is the **equivalent of an on-site appointment** and incorporates all the major aspects, ie, it is **solutions-oriented, professional, appreciative and personal**. Remote expert service with polysius® connect is based on oculavis share, which was developed by the Aachen-based scale-up oculavis to optimise processes in mechanical and plant engineering and to build new business models in service.

The service solution enables an expert to connect live to the client via encrypted connection. He can **virtually see through the eyes of the customer on the machine** using a smartphone, tablet, or smart glasses. AR annotations are available to guide the machine operator on site with **visual instructions solve technical issues**. Knowledge about the respective application and associated targeted processes are **centrally documented in one platform**. Remote service calls can be technically documented with images and video recordings and systematically linked to customer plants in cases.

OEM experts and service technicians obtain an overview of the number and type of service cases and can also share the knowledge gained with colleagues. The **data is stored securely in the cloud in compliance** with data protection regulations.

## From Germany to Serbia and Mexico – remote expert service around the globe

Final mechanical work, the installation of a new sub-control software and the adjustment of a kiln had to be carried out remotely to complete the commissioning process and put it into operation at a Mexican customer's cement plant. This was a kiln system requiring special knowhow. The operation was supported by a thyssenkrupp service team on-site and pyroprocessing experts from Germany. polysius connect was used in combination with RealWear HTM-1 smart glasses, which allowed hands-free working. **The deployment time was approximately 3h – significantly less than the amount of time required to travel to Mexico.**



Remote troubleshooting of a cement system from the Digital Control Center

The advantages of the remote commissioning included: **considerable cost and time savings**, further training of the thyssenkrupp service team, fast response time and commissioning. Had it not been for the remote service option, the kiln would not be operational and would have been shut down indefinitely due to COVID travel restrictions.

Another success story of remote expert service with polysius® connect was the inspection of a girth gear in Serbia. Involved were technical staff of the customer, a field service technician and a POLDRIVE® expert from thyssenkrupp Polysius. Smartphones were used for the virtual collaboration. Necessary for the successful inspection were very good photo and video quality as well as AR annotations, which were very helpful for displaying the areas to be inspected.

The added value briefly: additional training and knowledge acquisition for the customer's personnel, significant cost and time savings as well as a **detailed report generation for the customer**. The customer was finally impressed by the advantages that he placed a follow-up order for the remote pre-installation of a kiln cylinder.

### Next level: Digital Control Center

The expansion of digital services at thyssenkrupp has already begun. It is subject to continuous development and adaptation to the needs of plant operators. thyssenkrupp Polysius has established a Digital Control Center in Beckum/ Germany, that allows automation and plant operation experts to access data of cement plants worldwide in real time.



AR video call with machine specialist on site

The Digital Control Center provides an offer for customers to improve production and to achieve process optimization over the entire life cycle of a cement plant. In combination with remote access, control and expert service, entirely **new smart services can be created, much easier implemented and monetized.** The range of possible applications is versatile: from typical use cases with customers such as error analysis and correction, inspections, repairs, and maintenance to even more complex remote operations like spare parts and wear parts business, trainings, in auditing plants,

### Excellent customer service with sustainable customer solutions

Successfully launched in the Corona pandemic, remote expert service fits perfectly into the automation, digitization strategy and into the goal to transform the cement industry from #grey2green. The solution makes a valuable contribution to **exploiting the full productivity potential of cement plants** by ensuring that maintenance is carried out on schedule, systems are optimally adjusted, necessary inspections are carried out without long lead times, and downtimes are thus reduced.



Digital Control Center allows automation & plant operation experts to access data worldwide in real time

in retrofitting and modernizing systems, and in consulting to optimize production parameters. Even in the internal collaboration between service units polysius® connect is used, so that OEM experts can support young talents and service personnel in their daily work. In addition, other mobile devices have been and will be integrated in the future to enhance visual support. These include for example infrared cameras or drones.

Remote Expert Service is highly efficient, **reduces both internal organizational costs for time-consuming travel** and enables specialists to provide their expertise within hours and be the eyes and ears for the customer – because from now on, customers will never walk alone in a tough environment.



oculavis GmbH  
Vaalser Str. 259  
52074 Aachen  
Germany  
Tel. +49 241 894 388 0  
[www.oculavis.de](http://www.oculavis.de)