

# CASE STUDY

**Industry:** Steel Industry  
**Customer:** Steel Plant in Germany

OFF-HIGHWAY  
**POWERTRAIN SERVICES**

## ▶ Off-Highway Powertrain Services Online Condition Monitoring service is key to improving reliability in Paper production

### ▶ Case Description

Following cardan shaft failures that had resulted in unplanned shutdown costs of more than **€100,000 per year**, the customer approached Off-Highway Powertrain Services (OHP Services) to implement a condition-based maintenance strategy for their paper machines across two plants.

OHP Services started working with this customer in 2013, providing a condition monitoring system on the most critical drives on a customer's automated production line.

The system was able to detect several critical faults before a machine breakdown occurred and dramatically reduced the number of stoppages due to powertrain system failure, saving the customer significant costs in lost production. Impressed by the results, the customer decided to implement a similar system for their second plant.

Now, both customer plants rely on OHP Services Online Condition Monitoring service to keep their machines up and running!

### ▶ Technology Snapshot

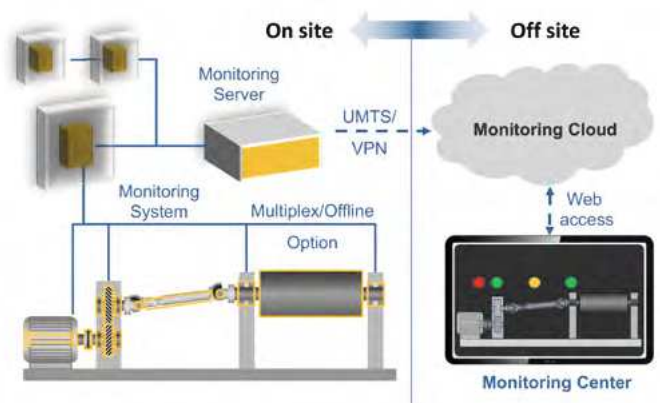
#### Online Condition Monitoring System

Acceleration sensors which measure vibration are placed on the machine components to-be-monitored (e.g. cardan shaft, motor, gearbox or bearing). The sensor signals are carried by electrical cable to a multi-channel diagnosis system and are evaluated by OHP Services experts.

Multiple monitoring systems are located throughout the production line to minimize the use of sensor cables. They are interconnected with a central monitoring server using a local network. The data is transferred through a secure VPN connection to the Monitoring Cloud and saved there.

OHP Services condition monitoring specialists perform regular vibration analysis and diagnosis from the remote monitoring center and based on the findings, corrective maintenance services such as alignment, repair, overhaul, inspection etc. are carried out.

Our Monitoring Cloud solution enables 24 hour monitoring and notification functionality.



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► **Challenge:**

- Implement condition-based maintenance so that recurring breakdowns of cardan shafts are avoided

► **Solution:**

- OHP Services carried out an initial vibration measurement on all powertrains to evaluate machine health right from the start
- Identify optimal measurement positions using the minimum number of sensors
- Online condition monitoring system was installed and a detailed installed base report was provided to the customer



► **Customer Value:**

- Reliability has increased due to early stage detection of faults even before vibration, noise, cracks etc. become apparent
- Ability to provide diagnostic services for the complete powertrain system
- Risks to property, people, quality, etc. due to possible cardan shaft failure is minimised
- Return on Investment (ROI) was achieved in less than 6 months

► **What's special?**

- OHP Services provides the best possible customized solution. We provide our customers with a flexible and customized condition monitoring system tailored to their requirements. We are also able to integrate our solution into an existing condition monitoring strategy.

OFF-HIGHWAY  
**POWERTRAIN SERVICES**

**WORLDWIDE**

Off-Highway Powertrain Services collaborates with manufacturers and logistics partners worldwide: benefit from our extensive network. By means of our Service Parts Availability Module, you can define which part are to be available, and how quickly they can be delivered to your location – regardless of manufacturers. We also offer customized spare parts to our clients on stock.

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This case study is exemplary only. Any and all information, data, values, products, procedures etc. which are mentioned in this case study vary from case to case and can be different. For calculation pertaining to your business, please refer to a Off-Highway Powertrain Services employee.