KAESER KOMPRESSOREN SE RELY ON INDUSTRY 4.0

"Compressed air as a service" – a new, dynamic business model
with the highest failure safety thanks to predictive maintenance

Currently, the opportunity for innovation is particularly present in new business models. If you digitize, you benefit. As has KAESER KOMRESSOREN SE, the market leader for compressed air generation, compressed air preparation and compressed air distribution. The company has once again lived up to its role as an innovator with its "Compressed air as a service" based on an Industry 4.0 solution. Kaeser's customers operate production facilities that depend on continuous airflow. "Compressed air as a service" enables them to obtain compressed air as and when required, without the expense and investment in compressors. They only pay for the compressed air that is supplied by the Kaeser compressor installed on site. In order to provide failsafe "Compressed air as a service", Kaeser monitors all the compressed air stations round the clock and services the equipment before a fault can lead to failure. The sensors in the compressors supply enormous quantities of data that is correlated via machine-to-machine platforms, SAP HANA and predictive maintenance. This data is then analyzed and evaluated for predictive maintenance purposes. Different user groups access the SAP data with different end devices. For example, planners for material and application planning on PCs and service technicians around the world with smartphones or tablets. They are specifically informed when necessary and receive secure access via mobile apps. They are thus able to be at the customer's premises in time to keep compressors running. In the future, partners and customers will also be able to access any relevant data they require via secure app containers.

AT A GLANCE

- "Compressed air as a service" as new business model, thanks to Industry 4.0 solution
- Predictive maintenance based on recorded compressor sensor data, with analysis and forecast model for early maintenance times
- Fully automated filling of industry PCs through the M2M platform helps contribute toward minimizing efforts required by initial commissioning and operation of the facilities
- M2M platform to record and collect sensor data in real time about the functions of the compressed air stations
- Reduction of outages of Kaeser customers' compressors and production facilities
- Initial app development, ongoing expansion of the app features and integration of standard apps by T-Systems' Global Mobile App Factory in line with growing customer needs
- Application management of Kaeser's SAP HANA Cloud platform mobile services by T-Systems
- Permanent mobile access for Kaeser's service employees and (in future) for service partners worldwide
- High satisfaction among Kaeser customers thanks to on-demand, high-availability compressed air as a comprehensive, carefree package
- Fully managed Industry 4.0 solution for Kaeser from a single source

T··Systems·

THE REFERENCE IN DETAIL

CUSTOMER. KAESER KOMPRESSOREN SE, a European stock corporation, is one of the world's leading suppliers of products, services and systems for supplying production and work processes with the energy source compressed air. Compressed air management systems from Kaeser are sold in more than 100 countries and provided with comprehensive services. The family business, based in Coburg (Upper Franconia) has 5,000 employees worldwide; 1,900 of these are employed at two manufacturing sites in Germany. In 2013, the company generated revenue of more than 650 million euros.

CHALLENGE. Kaeser's innovative operator models offer different purchase and service models for its compressed air stations, as well as "Compressed air as a service". This enables the customer to save entirely on investment costs, expenses for maintenance, and instead, to obtain the compressed air at a contractually agreed price per cubic meter "Pay as you use". The compressed air supply is operated and managed by Kaeser. The systems are constantly monitored by Kaeser's service center. In order to ensure the high availability of the compressed air systems and thus the smooth operation of the customer's production facilities, Kaeser wanted to offer an industrial 4.0 solution with predictive maintenance. The functions of the compressed air stations around the world not only need monitoring but the huge amounts of data collected also have to be analyzed in real-time in order to solve potential problems via forecast models even before a fault occurs. The mobile provision of relevant data is intended to simplify and accelerate the service process. Kaeser also provides its employees with mobile devices such as smartphones and tablets. The mobile devices, their apps and content must be made secure and managed according to Kaeser's requirements.

SOLUTION. The Industry 4.0 solution implemented by T-Systems from end-to-end via its own and Kaeser's SAP systems encompasses the interaction of the following components:

- Internet of Things: Industrial PC with SAP IoT SW on compressors (at Kaeser's customers)
- Machine-to-machine platform (T-Systems)
- SAP HANA platform, SAP Predictive Maintenance (at Kaeser's premises)
- SAP HANA cloud platform mobile services (SAP cloud)
- Application management of the mobile platform (T-Systems)
- Mobile app development and integration (T-Systems)
- Standard app evaluation & integration (T-Systems)
- Enterprise app store (T-Systems)
- Mobile device management / Enterprise mobility management (T-Systems)
- ITSM Tool

Sensors on the compressed air stations permanently transmit all the important compressor data, such as temperature, power, volume flow, etc. This results in high data volumes, which are passed to the M2M platform at T-Systems via data management and subsequently, to the SAP HANA database with a predictive maintenance application at Kaeser. The intelligent software analyzes the data and creates forecast models for predictive maintenance in real time. Potential problems and thus the maintenance orders are transmitted via the Internet or the mobile network to the mobile device of the company's service technicians and service partners around the world. In addition to this important application scenario, users of mobile devices also have access to Kaeser's communications infrastructure. This includes the secure connection to the exchange for e-mail, calendar, contacts, as well as secure and containerized access to the intranet via a secure browser. Users obtain their apps through an enterprise app store. The solution can be extended to various applications. The enterprise mobility management solution, including MDM and the app store, is a T-Systems private cloud solution, which is provided to the customer as a fully managed service.

BENEFIT. With Industry 4.0, predictive maintenance and mobile data provision, Kaeser achieves the greatest possible operational reliability for its compressors worldwide. Irregularities in the compressed air stations are recognized at an early stage and remedied by servicing before a fault affects the customer's production operations. Kaeser ensures the operability of the compressed air stations and early servicing. The risk of a failure is not only minimized from the outset, it is also borne by Kaeser. Thanks to mobilization of the service process and other successive processes, Kaeser increases the productivity of the entire field service while lowering costs and increasing customer satisfaction. By using mobile apps, Kaeser can accelerate processes and take better decisions. And, finally, Kaeser motivates its employees by enabling them to participate in state-of-the-art communication technology.

"With our new contracting model – 'Compressed air as a service' – we are miles ahead of the competition. Because T-Systems takes care of the entire system as a fully managed solution, ranging from enterprise mobility management, the development and integration of apps to application management, we are able to focus on our core business."
Falko Lameter, CIO, KAESER KOMPRESSOREN SE

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