

**Kaesar  
Kompressoren SE  
at a Glance**
**Industry:** Manufacturing  
and services solutions

**Headquarters:** Coburg,  
Bayern, Germany

**Year founded:** 1919

**Number of employees:**  
4,800 worldwide

**Countries of operation:** 91  
[www.kaeser.com](http://www.kaeser.com)

Source: Kaeser Kompressoren SE

# Kaesar Puts Customers First with Big Data and Real-Time Business

The privately held German maker of air compressor systems and services taps predictive maintenance to drive ROI and a better experience for its customers.

BY LAUREN GIBBONS PAUL

Makers of heavy industrial goods aren't exactly famous for their focus on the customer experience. But a leading maker of compressed air systems is trying to change that perception. Family-owned since 1919, Kaeser Kompressoren SE is

one of the largest providers of compressed air systems and compressed air consulting services in the world. Its roughly 4,800 employees operate in nearly 100 countries across the globe.

For a company that sells an industrial product in a business-to-business (B2B) environment, Kaeser is uncommonly focused on customers. The company's Web site says its goal is to "provide exceptional customer service coupled with innovative products and progressive system solutions." Privately held Kaeser stands out in another way, as well, as the site makes clear: "You are doing business with a company with a family tradition of producing quality equipment, not a company focused on meeting Wall Street estimates. Thomas Kaeser is proud to put his name, his father's name and his father's father's name on every product."

The Kaeser line of air compression systems includes machines many have never heard of: rotary screw compressors, vacuum packages, refrigerated and desiccant dryers and condensate management systems, as well as portable compressors, filters and blowers. As important as the quality of those products is Kaeser's commitment to after-sale service.

## Predictive Maintenance Powered by Big Data

In fact, Kaeser recently made a significant investment to harness the power of big data to

improve after-sales service. The company implemented a real-time business solution powered by an in-memory computing platform, which is able to analyze vast amounts of granular, real-time data produced by a machine-to-machine (M2M) interface. This platform enables Kaeser to automatically monitor air compressors in use at customer sites. Kaeser is hardly the only company using this technology: Companies are forecast to step up their investments in M2M technology over the medium term (see Figure 1, "Global M2M Market Growth").

### FIGURE 1 Global M2M Market Growth

*Use of the technology that underlies predictive maintenance, machine-to-machine communication, will expand along with maintenance analytics. (total annual revenues, M2M tech producers)*



Source: MarketsandMarkets.com. <http://goo.gl/1QTsO>

The Kaeser system is capable of running analytics against the vast amounts of M2M data generated from the systems' sensors and meters, including energy consumption, operational status and compressed air quality. The objective: to predict which equipment will need service, and when. Predictive analytics gives customers the luxury of planning downtime and avoiding unexpected outages, which can cause grievous injury to the bottom line.

## Kaeser Kompressoren Business Challenges

- ▶ Make maintenance and other services offerings more cost-efficient and more valuable to customers
- ▶ Streamline the supply chain
- ▶ Innovate through new technologies and business models

## Kaeser Kompressoren Solutions

- ▶ Implement a real-time business solution powered by an in-memory computing platform to enable automatic monitoring of customer site air compressors
- ▶ Use predictive analytics to help customers plan downtime and avoid unexpected outages
- ▶ Use an M2M interface to monitor customers' mission-critical air compressors around the clock, with resources on call to address issues swiftly
- ▶ Establish a portal to accelerate problem resolution and enable customer service personnel to be more proactive and more customer-oriented

"Our customers simply can't afford any unplanned system downtime," noted Kaeser Kompressoren AG CIO Falko Lameter in a recent article.<sup>1</sup> The company's predictive maintenance ensures that its superior products stay that way even after years of use. "Our products are built for a lifetime," Lameter said. "But to get optimal longevity and performance, they must be maintained properly." Kaeser's real-time predictive maintenance services help customers achieve nearly 100 percent reliability.

Crucially, customers no longer have to monitor their mission-critical air compressors around the clock. Kaeser handles that chore through its M2M interface, with resources on call to address issues swiftly. The system has direct, M2M connections and real-time alerts, so potential failures can be detected before they occur, with corrective action undertaken before business is affected.

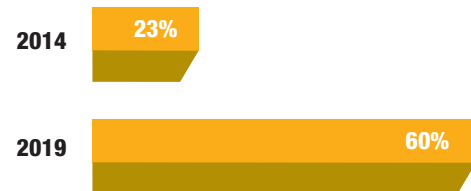
Lameter believes the addition of predictive analytics for its equipment sets Kaeser apart from the competition—a belief that is driving investment across the business spectrum (see Figure 2, "Advanced Maintenance Analytics to Rise").

ABI Research principal analyst Aapo Markkanen says the cost savings associated with the ability to predict equipment breakdowns before they occur is potentially huge, both for Kaeser (or any other solutions manufacturer and service provider) and its customers. "From the manufacturer's perspective, the key benefit is the ability to transform a product business into a product-and-service business," he says.

"Many manufacturers have been trying to do this for years, with their maintenance and other services offerings, but what makes the difference here is that the combination of [M2M communication] and analytics can make such services more cost-efficient from the vendor's point of view, as well as more valuable from the customer's point of view," Markkanen says. Maintenance is conducted only when truly needed, he says, but still before a

## FIGURE 2 Advanced Maintenance Analytics to Rise

*ABI Research forecasts predictive and prescriptive maintenance analytics will dominate the analytics market within five years. (advanced maintenance analytics percentage of total analytics market)*



Source: ABI Research. <http://goo.gl/9oJm67>

breakdown gets to occur, so over time both parties can save money.

"We're always thinking of new ways to run things better and innovate new technologies and business models," Lameter explained. Case in point: Kaeser's transformation into a real-time business that puts the customer at the center and focuses on delivering solutions, not mere products. The services-based business model not only secures the company's market position and keeps it one step ahead of increasing customer demands, it also improves margins and revenues. In fact, total revenues from the sort of predictive analytics that Kaeser uses are expected to grow sharply in coming years (see Figure 3, "A Growing Market").

Using real-time analytics, Kaeser can monitor key parameters in real time, including power consumption, operational availability and safety or compressed air quality at each customer air station against minimum and maximum allowed values. Service engineers can analyze this real-time data from a portal without having to visit the customer site. Serving key data to the portal accelerates the resolution of any problem, keeping customer operations reliable and efficient. With the comprehensive view that the portal provides, customer service personnel have become more proactive and ever more customer-oriented.

"What makes our predictive maintenance solution cutting-edge is its computational complexity combined with the scale on which it operates," wrote Lameter in

1. <http://goo.gl/VHzpWK>

## Benefits of In-Memory Computing at Kaeser Kompressoren

- ▶ Improved equipment uptime
- ▶ Decreased time to problem resolution
- ▶ Reduced operational risks
- ▶ Accelerated innovation cycles
- ▶ Better alignment between Kaeser's products and services and its customers' needs

a recent blog post.<sup>2</sup> "It collects thousands of real-time data streams from customer air stations; big data scales into the terabyte range. We collect, analyze and act upon that huge amount of data as part of our routine operations."

The predictive maintenance portal handles these complexities while providing service engineers with user-friendly, Web-based and mobile access. As a result, the portal keeps Kaeser service engineers fully informed of equipment status at customer sites so they can provide a consistently positive customer experience.

The power and scale of the system provide a real advantage. "We had to harness the power of big data to remain at the vanguard of our industry in the 21<sup>st</sup> Century," Lameter said recently. At the same time, the company simplified its software landscape by migrating its CRM application to a robust in-memory platform. The in-memory platform helped Kaeser accelerate its core business processes and achieve operational excellence, he wrote.

Running on the in-memory platform, database response times are now five times faster than before. "This has allowed us to bring the entire lifecycle of the sales process under careful scrutiny—from lead management to requirements analysis, solution planning and solution implementation. And with real-time information, we have streamlined our supply chain to deliver on customers' changing needs while generating healthy margins," Lameter wrote in the blog post.

## Aligning Product Development with Customer Needs

The predictive maintenance system has had a significant, unforeseen side effect. Stored in Kaeser datacenters, the big data culled from monitoring machine operations forms the basis for sophisticated data analysis, including insights relating to new product development. "This helps us further optimize our service processes and furnishes highly valuable input for the research

## FIGURE 3 A Growing Market

ABI Research forecasts worldwide maintenance analytics revenues for the next five years will top \$24 billion. (projected revenues from maintenance analytics, CAGR: 22%)

2014

\$9.1 billion

2019

\$24.7 billion

Source: ABI Research. <http://goo.gl/9oJm67>

and development of our next-generation equipment," Lameter wrote.

This is an important benefit, Markkanen says. "Manufacturers are able to study their products' behavior in the field more closely than what has been possible before, so much of the analysis done for maintenance purposes can be used to steer the product development work, too," he says. "If certain, previously hidden circumstances prove detrimental to the product time and again, it may be possible to address them when designing the product."

In this way, product development can become more of an iterative process, with manufacturers continuously learning about their products and improving them accordingly. "All this can make a manufacturer like Kaeser more competitive in its market," Markkanen says.

The big data and in-memory platform that form the basis of Kaeser's predictive maintenance service have produced substantial benefits for the nearly 100-year-old company. According to Lameter, "We are seeing improved uptime of equipment, decreased time to resolution, reduced operational risks and accelerated innovation cycles. Most importantly, we have been able to align our products and services more closely with our customers' needs."<sup>•</sup>

Lauren Gibbons Paul has written extensively on customer relationship management and customer experience management for more than 15 years.

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2. <http://goo.gl/lyjdoy>

## SAP Recipe for Success

- ▶ **SAP HANA platform** to handle your big data challenges, uncover more value, deliver breakthrough innovations and simplify your IT environment.
- ▶ **SAP Business Suite Powered by SAP HANA** to help you transform and run every aspect of your business in real time.
- ▶ **SAP BusinessObjects, Business Intelligence and SAP Lumira** to enable every individual in the organization to easily visualize big data and get unique insights anytime, anywhere.

# Real-Time Businesses Make Decisions In the Moment

*Bloomberg Businessweek Research Services interviewed Steve Lucas, President, Platform Solutions, SAP SE, about transforming business operations with real-time insights.*

## What does it mean to be a real-time business?

Being a real-time business means being aware of the key factors that will impact your decisions and being able to make a decision in the moment that matters. In most manufacturing and services companies today, decision-makers have to wait for batch processes to run. When batch technology is replaced with real-time processing, however, companies can obtain in-the-moment insights instantaneously. They can use those insights for competitive advantage, whether to gain efficiencies, identify opportunities, manage highly complex supply networks or rapidly respond to changing market conditions. That's why the SAP HANA platform exists: to enable companies to do business in the moment.

## Where do you see the most value for different organizations?

The value comes from three main drivers. First, we reduce the complexity of the systems required to produce your existing results. This was one of the key motivations in designing SAP HANA: massive IT simplification. You can use the platform to feed data from all different sources into one system. Second, we enable agility by giving customers the ability to get real-time insight for decision-making. Third, we're unlocking the true potential for innovation through new business processes and models: the real-time business innovation.

## As you look ahead, what new ways of doing business do you envision?

Our SAP HANA platform not only can enable customers to make decisions for today, but it also provides a powerful predictive engine. Most companies make decisions by looking in the rearview mirror. But the rearview mirror is tiny compared to the windshield looking forward. Companies will start to build forward-looking decisions into their operating models.

## What is your best advice to companies that want to start their real-time transformation?

It is not just about the technology. SAP HANA is extraordinarily innovative, but the first thing we do is look at where the opportunities are to transform business processes. Then we spend time with customers rethinking how those processes are designed and how to remodel them. You have to start at zero: What would you do if you didn't have to wait for information? If you don't have to wait, there's an opportunity for massive reinvention and value creation across industries.

To learn more about using SAP HANA, visit [www.saphana.com](http://www.saphana.com).

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