

Siemens

Analytics is the Ticket to Better Service and Value for Siemens

One of the largest capital goods companies in the world uses data and analytics to improve train service and reliability.

by Carly Schramm



Since its inception in 1847, Siemens has aimed to be the leader in all the markets it serves. The electrical engineering and electronics powerhouse, which is one of the largest capital goods companies in the world with nine divisions, is doing just that.

To provide customers additional service and value not normally possible with traditional service levels, the organization's mobility division built an analytics environment to monitor trains and train service. Gerhard Kress, director of Mobility Data Services at Siemens, discusses how the company uses data and analytics to predict part failures, improve reliability and keep trains running on schedule.

How are you using data-based insights to benefit your customers?

Gerhard Kress: We're using data to solve their business issues by understanding their needs, and that is, of course, an ongoing journey because the customers' needs are evolving over time. We're trying to help them compete and be the best in their markets. We look at how we can help them with data coming from their vehicles, from our engineering know-how and from experience we have from other projects. >>

Keeping trains running on time is essential to your business. What are you doing to ensure that happens?

Kress: Specifically things like predictive maintenance. The worst thing that can happen to a customer is if a vehicle somewhere on the track fails. You block a track for a couple of hours, you have passengers totally upset—rightfully so—and your whole schedule for the day is broken. So one very clear thing is we have to make sure our vehicles are always available when the customer needs them, and they don't fail.

And that's exactly what we're doing. We're building analytics to look at different components that are relevant to understand how they're degrading, the risk of a failure and how we can make sure that we repair them before something breaks.

If we tell a customer that a certain component is going to fail and it has to be replaced tomorrow, we have to make sure that the spare parts are in place. We want to make sure that the whole logistics chain is equipped to do the right thing.

How does analytics change the game?

Kress: Every unplanned service costs a lot of money, takes a train out of operation and disrupts the schedule. If our customers, who are usually rail operators, can rely on every vehicle to be available when needed, that's going to be a total game changer. They will need fewer vehicles in reserve, they can plan their schedule much more tightly and they can actually carry more passengers because they can rely on that schedule. The moment we are able to take over some of that risk, that's going to be a tremendous benefit for our customers.



Watch this video at: bit.ly/1la6QHy

What types of data are you leveraging?

Kress: The raw data we look at on the one side is diagnostic messages, where components communicate something about the status of trains. We look at sensor data—a couple thousand sensors per train. But we also look at things like reports from the workshop, from the repair processes.

We look at data coming from the warehouses and supply chain. We try to combine all that into a consistent model to analyze. And where customers allow, telematics data lets us know where the vehicles are, what status they're in, what speed they're traveling and so on.

How are you able to understand the condition of each train?

Kress: We have a data model that describes each train. We look at where they are, where they've traveled. If we provide service to the train, we also know about all the parts that are in there and the configuration of the train. We know the history of every serialized part if we do the service ourselves, and we know the operating hours for fans, climate systems and so on. So we have a very good prediction of what condition the different components are in.

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—Gerhard Kress, director of Mobility Data Services at Siemens

Does this information enhance the way your customers conduct business with their passengers?

Kress: It allows our customers to be much more reliable toward their own passengers. We try to work very hard with them to make sure that they have the best vehicles they need for what they are doing. We're making sure our customers can compete where they want and provide the best service to their passengers.

What's next for Siemens?

Kress: We have to make sure that we make predictions properly. We have to improve them and we have to scale them to all of our install-base vehicles, and there's still a way to go.

The next thing, of course, is to further understand customer requirements; what more can we do for our customers to provide them value. For example, energy consumption is one of their biggest costs. If we can improve that by, for example, providing driver assistant systems that link to the real-world schedule as it is in this moment—the track system and the situation right now—that can be also very, very effective for the customer. **T**

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