CONVERTING DATA INTO BUSINESS VALUE AT VOLVO

How access to vast, new data resources is driving manufacturing excellence, customer satisfaction and vehicle safety at Volvo Cars.

January 2011

CASE STUDY

"We're now capturing massive amounts of data from our vehicles," says Volvo Car Corporation's Rich Strader. "And there is a compelling opportunity to turn that resource into something that not only helps us build better cars, but also helps the customer have a better experience." Strader, who has just completed a 12-month stint in the CIO's chair at Volvo, is convinced that, in a world where many consumers now value smart tech as much as automotive engineering, manufacturers need to create vehicles that are, in effect, highly connected, data-rich IT environments. With hundreds of sensors and CPUs embedded throughout the car — from the brakes to the central locking system — data is now being captured for use within the vehicle itself, and also, increasingly, for transmission via the cloud back to the manufacturer.

At Volvo, those huge volumes are streamed into a centralized analysis hub, the Volvo Data Warehouse, alongside data from customer relationship systems, dealership systems, and product development and design systems. And Volvo's ability to draw insight from this multi-terabyte resource is creating clear business advantage, says Strader, who has now returned to a senior IT post at Ford, where he was formerly manager of in-vehicle systems*. Above all, it is being used to optimize manufacturing processes, enhance customer interaction and boost safety.

"By splicing that data together, we are pre-warned about potential issues such as mechanical problems that might have shown up later in the field," he says. So, very early in a car's lifecycle, Volvo can spot patterns that may indicate a potential flaw in a particular part — frequently before a customer is exposed to the issue. By applying a set of well-honed lean processes, Volvo is immediately able to resolve the problem by adjusting its manufacturing process

or going back to its suppliers to request improvements. "Before it gets out into, perhaps, 500,000 units, we can stop an issue when spotted in the first 1,000 units. And that's a much less expensive thing to do. Plus, few — if any — customers are impacted and their positive experience of the brand remains intact," says Strader.

Another area where large-scale data capture and analysis is driving improvements is in safety. At its state-of-the-art Safety Center, the Swedish company performs detailed, forensic examinations of Volvos that have been involved in different kinds of accident. "We're now able to extract huge amounts of digital information from a vehicle and see how well it responded," says Strader. This enables Volvo to further enhance its market-leading safety record. "We can ask, for example, 'Are our airbags timed to deploy at exactly the right moment for a particular set of circumstances?' And we can tune that in the field: the next time a customer is in for a service, they can get a software upgrade that ensures the car is going to perform even better in an accident."

Strader believes the sheer volume of data being amassed can be the basis for improvements right across the value chain, as long as the resources are applied to turn it into valuable knowledge. "The information that is now at our disposal is just waiting for the analytical work to be done on it," he says. "The real challenge for most companies is to find a way to fund that work, because that's where you'll get the true breakthrough ideas." ●

* Ford was the Volvo Car Corporation's parent company until August 2010, when the Swedish manufacturer was sold to China's Geely. Strader was on temporary assignment at Volvo as CIO to oversee the de-merger of the two companies' IT and related processes.