



Case Study

Avanade tracks Williams Martini Racing pit crew biometrics to boost future performance

Situation

A Formula One team can have the fastest car on the track and still lose the race. That's because the car's speed isn't the only performance that matters. The speed of the pit crew is crucial in getting the car back in the race and saving the driver precious seconds that can improve a track position and increase the range of options for a winning strategy.

Williams Martini Racing wants to support its drivers with the fastest and most consistent

pit crew in Formula One. In fact, Williams' pit crew is already one of the strongest in the pit lane, having completed the fastest pit stop of the 2016 season and received the 2016 DHL Fastest Pit Crew award for securing the fastest pit stop in the most races during the season.

**Want to make a pit stop even faster?
Start with the people.**

Having worked with Williams Martini Racing on its digital transformation since 2015,

Avanade had already delivered a range of solutions to help the team optimize car design and testing. But, as Williams' strategic technology partner, we also wanted to help them build on their 2016 success and add science to the art of the pit stop.



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Williams Martini Racing

“Working with Avanade will enable us to retain an edge on our rivals when it comes to understanding biometric data from the pit crew.”

– Gemma Fisher, Human Performance Director, Williams Group

Solution

Williams and Avanade identified biometrics as a key to understanding and improving the performance of the pit crew. They combined this technology with internet-based data analytics and reporting in a quest to obtain actionable information for Williams to use in future training and performance strategy.

Heart rate, breathing, temperature, acceleration are measured by a bio-harness.

The IoT solution broke new ground for Williams Martini Racing. During the 2016 season, members of the Williams pit crew wore bio-harnesses to track a range of biometric data (heart rate, breathing rate, temperature and peak acceleration). The measurement data is uploaded to a database hosted in Microsoft Azure and processed with Microsoft Power BI data visualization. It is displayed through Avanade’s Biometrics Analytics Dashboard to the Williams Human Performance Director, Gemma Fisher.

An F1 car has 200 sensors. What about the pit crew?

“A car has 200 sensors logging over 1,000 parameters, and we wanted to expand the data available to us by understanding the science behind the pit crew,” says Fisher. “Working with Avanade will enable us to continue to push the boundaries of pit stop potential and will help us use additional data streams to ensure we stay a step ahead of our rivals.”

Results

Now the season is over, Fisher will use the dashboard to assess the information gathered throughout 2016 to gain a better understanding of the areas that need improvement to achieve consistently fast pit stops. For example, analysis of data gleaned from the bio-harnesses will provide insight into the physiology behind the perfect pit stop. Further analysis will seek to discover if information from the biometric data can inform specific aspects of the individual’s fitness training objectives.

Biometric data helps us understand the science behind the perfect pit stop.

Bespoke performance reports could then emphasize, for example, working in a particular heart rate zone in order to reduce the cardiovascular recovery period. Initial findings are suggestive of influential factors on performance such as stress and caffeine intake. The data enables targeted training and other actions to improve team performance that can be implemented ahead of the 2017 season.

The most connected pit crew is the fastest pit crew.

The solution is a key example of how Avanade is helping businesses develop a connected IoT ecosystem to maximize business value, combining operational technologies with business information technologies to create a real-world difference in performance.

“Working with Avanade will enable us to retain an edge on our rivals when it comes to understanding biometric data from the pit crew,” says Fisher. “By optimizing the performance of our pit crew we aim to consistently achieve the quickest pit stop times in 2017 to help our drivers in their bid to deliver successful performance on the track.”



About Avanade

Avanade is the leading provider of innovative digital and cloud-enabling services, business solutions and design-led experiences, delivered through the power of people and the Microsoft ecosystem. Majority owned by Accenture, Avanade was founded in 2000 by Accenture LLP and Microsoft Corporation and has 30,000 professionals in 24 countries. Visit us at www.avanade.com

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