

Case Study

Predictive analytics delivers competitive edge for Williams

Predictive analytics is Williams' newest tool
for performance now.



Case Study

Williams

“Avanade has given us the perfect solution for track-side predictive analytics, one that surpasses the competition. This sets the standard for the advancement of race simulation predictive analytics.”

– Jakob Andreasen, Chief Performance and Operations Engineer, Williams Group

Situation

In Formula 1, if you're not developing in every area, you will fall behind. Williams Group, the Formula 1 racing organization, does not intend to fall behind.

That principle applies not only to car performance, but also to the technology that enables that performance. Williams demanded its first predictive analytics solution to support drivers and engineers to make better, real time data-driven decisions, race strategy and driver feedback to get Williams F1 cars to the finish line first. Such a solution will give a tremendous competitive advantage, in contrast to the manual process that Williams had been using.

Solution

Williams now has its high-performance, low-cost, analytics solution for pit-wall engineers. Appropriately enough, it's called WISDOM and has been designed and developed for Williams by its technology partner, Avanade. The solution guides Williams' engineers and supports decisions that directly affect race results. This represents the first step toward applying artificial intelligence to the split-second challenges to decision making that confronts engineers. Decisions can be required in a split second of a situation change of whether to pit or stay out. These data driven decisions will result in a better race outcomes.

WISDOM is an application suite and data warehouse that integrates and analyzes sensor, weather, telemetry, GPS, fuel consumption, and other data in real time during a race. Two of its key applications are Live Race Trace and Tyre Optimization.

Live Race Trace combines live race data feed and predictive analytics to simulate the full race while it's in progress and predict the outcome. The app delivers its analysis in highly visual, intuitive form for easy comprehension during the tense, every-millisecond-counts moments of a race. It helps the engineers answer questions such as how likely it is for one car to overtake another in any given lap.

The Tyre Optimization app models the tyre performance of Williams' cars and that of its competitors, helping engineers make better decisions about whether, and when, to call pit stops. To do so, the app runs millions of race simulations during each lap and presents the best options to Williams' engineers.

Some of Williams' competitors took 10 years to develop their predictive analytics solutions; Williams needed far faster development if it was going to leapfrog the competition with WISDOM. To meet an aggressive, two-year timeline, Avanade employed a modern software engineering approach, using an Agile methodology and DevOps principles. This reduced the cost, risk and the time required to build,

test and deploy, whilst also providing continuous feedback, which was reflected in more frequent, useful and powerful iterations.

Williams introduced WISDOM at the start of the 2017 race season. It has provided the team with a predictive platform on which they can rapidly deploy further leading edge features via an iterative development approach.

Benefits

Delivers incremental innovation to improve track performance—and car design. Today, WISDOM is helping Williams shave -seconds off race times, which can make the difference between winning and losing. It increases the ROI on existing data by making efficient use of that data. Beyond the race track, Williams uses WISDOM analysis to design and build enhanced performance into its cars even before they get to the track.

“Perfect solution” gives Williams a competitive advantage in the most mission-critical aspect of its operations: race performance. All competitors receive data provided by Formula One, Williams must get faster and more agile in their use of the data than the other teams. Williams now can, thanks to the more accurate predictions that WISDOM provides. Engineers respond with greater confidence to any situation they encounter.



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

©2017 Avanade Inc. All rights reserved. The Avanade name and logo are registered trademarks in the U.S. and other countries. Other brand and product names are trademarks of their respective owners.

North America

Seattle
Phone +1 206 239 5600
America@avanade.com

South America

Sao Paulo
AvanadeBrasil@avanade.com

Africa

Pretoria
Phone +27 12 622 4400
SouthAfrica@avanade.com

Asia-Pacific

Australia
Phone +61 2 9005 5900
AsiaPac@avanade.com

Europe

London
Phone +44 0 20 7025 1000
Europe@avanade.com