



France | Sport & Entertainment

Edge computing, IoT and a revolutionary fan experience for the Tour de France

Client profile

Amaury Sport Organisation (A.S.O.) are the owners and operators of the Tour de France and Tour de France Femmes avec Zwift, as well as other top international sporting events including the Dakar Rally, the Tour Voile yachting race, the Paris marathon, and the ladies French Open golf. They organize 240 days of competition per year, with 90 events in 25 countries.

“We want our fans to have an exceptional experience, whether they’re at home or on the roadside cheering on the race. Without the platforms and technology that NTT provide this simply wouldn’t be possible.”

Yann Le Moenner, CEO,
Amaury Sport Organisation

Summary

For A.S.O., the organizers of the Tour de France, ensuring they’re able to meet the needs of fans, broadcasters, race officials and their team members is critical.

For the past eight years, we’ve worked together to deliver rich experiences to fans at the event and around the world and digitally transform race operations.

Leveraging a digital fabric consisting of IoT sensors, edge computing, networking connectivity technologies, and real-time analytics we’ve created a digital twin of the race, allowing A.S.O. to use the power of data to meet their business objectives.

In 2022 we’re using this solution to support the Tour de France Femmes avec Zwift, creating the best digital coverage of any women’s cycling race in the world.

Vision

Eight years of co-innovation

Continual improvement lies at the heart of all competitive sports, the need to find that extra something that will ensure that they reach the finish line before their competitors.

For Amaury Sport Organisation (A.S.O.) their multi-year digital transformation journey has focused on continually creating new experiences for their fans, both long-time followers and those who may be discovering the Tour for the first time.

They’ve leveraged the power of networks, edge computing and the cloud to transform race operations, enabling them to make faster decisions informed by real-time data.

A.S.O. and NTT have walked this journey together over the past eight years, constantly searching for new ways to innovate and digitally transform this iconic event.

In 2015, at the start of our partnership, we created a solution that enabled A.S.O. to track riders in real-time, leveraging this intelligence to change the way broadcasters covered the race.

Each year this has been expanded to include enhanced data analytics, the use of artificial intelligence and machine learning to gain greater insight into the race on an increasing number of digital channels for fans. The data we’ve collected has been used to drive enhanced, data-driven storytelling, providing insights to audiences on social media and broadcast; continually evolving this capability with improved visualizations and new stories for fans each year.

“Technology plays a vital part in helping us innovate at the speed fans expect from their mobile and cloud-based applications, all the while providing event insights, rich analytics, and intelligent digital solutions.”

Pascal Queirel, CTO,
Amaury Sport Organisation

The 3D Race Tracker augmented reality application uses this data to provide fans with a real-time view of the progress of the race on their mobile device integrating a 3D map with data insights and the ability to track individual riders in real-time.

In 2021 we created a digital twin of the Tour de France turning the roads of France into the world's largest connected stadium. This digital twin provides race organizers with an unprecedented view of the race, allowing them to monitor not only the progress of the riders but also all the supporting vehicles and the start and finish zones.

Just as A.S.O. have always looked to explore the possibilities technology offers over the previous 108 editions of this iconic event, 2022 is no different. We're taking the technology we deployed in 2021 and taking it to the next level, providing race organizers with greater visibility, officials with a view of everything happening on the road and fans with greater insights into this amazing event. And we're bringing all this digital coverage to the inaugural Tour de France Femmes avec Zwift.

Transformation

Evolving the world's largest connected stadium

In 2022 we're creating the next generation of the world's largest connected stadium. With a fully digitized environment, race organizers now have a digital view of almost every element of both the Tour de France as well as the Tour de France Femmes avec Zwift.

To create the digital twin of the Tour we leverage a digital fabric consisting of IoT sensors, edge computing, networking connectivity technologies, and real-time analytics. This creates an accurate model of the entire 3,400km of the race route as well as all other areas associated with the race.

Through this, organizers can monitor key locations, assets, crowd information, and live race data, to enable a more seamless event experience and race operations.

Critical to delivering this is our ability to ensure we capture data from the edge of a highly dynamic network and provide this data back to users wherever they are.

IoT devices, including sensors on every bike, vehicle tracking technology and cameras are all critical to ensuring that we're able to provide all their stakeholders with the insights they need.

Leveraging edge computing, we're able to make the real-time data captured by the system is immediately available to the Race Commissaires following the riders in the official race vehicles. Where they were previously only able to view the race through the broadcast feed, they now have access to all the live data collected, even when they're deep in the mountains. This provides them with access to insights that enable them to make the best decision possible when enforcing race rules and ensuring the safety of the riders.

Our ability to deliver this level of intelligence at the edge is enabled by our decision to leverage the most appropriate infrastructure and cloud platforms for each element including physical, virtual, containerized, and serverless technologies. The same technology powering our data analytics platform in the cloud ensures that race officials and organizers always have access to the latest information.

This flexible, agile and highly available architecture was developed together with A.S.O. and allows us to spin up additional resources almost instantly, including delivery of the first-ever virtual Tour de France on Zwift in 2020, and to create parallel instances to support new events such as the Tour de France Femmes avec Zwift.

The insights provided by our data analytics platform powered by this hybrid architecture have enabled us to create a digital twin of the event, using a range of different IoT sensors across event vehicles, assets and locations. This digital twin provides the race operations team with full visibility of all aspects of the event, bringing together information that was previously only available in multiple different systems, or not available at all. We've also created a digital twin of our Big Data Truck – our race operations hub at the end of every stage of the races – to give our own teams better visibility of race operations.

Delivering this represents a unique and expansive network challenge – connecting a race traveling through some of the most remote corners of France, to support teams and fans in different corners of the globe.

This requires a range of different networking technologies working seamlessly together in an environment where security is paramount.

Our software-defined, edge-to-cloud, and multicloud network enables high-performance cloud services while also empowering the team from five continents across the globe to work seamlessly with the right collaboration tools.

Results

A partnership built on innovation

Since becoming the Official Technology Partner of A.S.O. in 2015, we've continued to work together to continually drive innovation at the Tour de France. This has enabled us to leverage a strong technology foundation to deliver richer experiences for A.S.O.'s audiences and digitize their event operations.

Continuously enhancing the fan experience

Critical to A.S.O.'s business objectives is ensuring that their customers, the fans, have access to the insights they're looking for. We're working with A.S.O. to bring the fans, be they on the roadside or across the world, closer to the action. Constantly expanding how fans can interact with the race is essential to ensuring that the race reaches today's digitally savvy audiences.

A new level of operational excellence

Through their data-driven strategy and the digital twin, A.S.O. can optimize their race operations. With full visibility of all aspects of the race, be it in Paris or the Alps, they can immediately identify any issues and move quickly to resolve them before they impact the race.

A co-innovation culture

Leveraging our long-standing partnership we're constantly working with the A.S.O. team to identify new ideas and trends. Through our collaboration, we're able to explore the latest technologies and find ways to leverage them to deliver greater value to A.S.O. and their stakeholders. This enables us to use the Tour de France environment as an incubator and enables us to test new cloud computing capabilities, for example, AI Ops.

The power of platforms

Through the use of the latest technology platforms, we've been able to continuously expand the scope of the solution we provide to the Tour de France while containing costs. Including the introduction of new innovation to the Tour de France Femmes avec Zwift in 2022.

The solution is regularly re-assessed to take advantage of changing financial models and we make extensive use of automation to optimize uptime, and ensure services are only online when required.

Technology plays a crucial role in driving business outcomes, which is why 85% of the Fortune 500 companies come to us. Find out how our full range of capabilities will empower your people, strategy, operations and technology to achieve your business modernization and transformation goals.

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