

Dimension Data brings machine learning and predictive analytics to the Tour de France

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Ovum view

Summary

Dimension Data is now in its third year of a five-year technology partnership with Amaury Sport Organisation (ASO) for the Tour de France. It considers the partnership a valuable investment in innovation, and it benefits from demonstrating to potential and existing customers its capabilities in digital transformation, including Internet of Things (IoT), data analytics, hybrid IT, cybersecurity, and digital workplace, based on its own and third-party platforms.

Applying technology live during the tour is a highly visible way to demonstrate how it can be used to change established processes and deliver new business models as consumers' expectations change, which is a challenge shared by many traditional businesses striving to remain relevant to their customers. It is also a good way to illustrate how communication and collaboration tools can be used to enable geographically dispersed team members to work effectively. Dimension Data's investment appears to be paying off.

Investment to bring new content to a new audience

The Tour de France is the premier cycle race in the world. It takes place over a period of three weeks across France, sometimes starting in neighboring countries. It is hugely challenging for the riders and usually packed with intrigue and controversy, and it is equally challenging for technology partners that must support the race and serve its global fan base as it moves to a new location each day.

ASO was looking for a technology partner to help it develop a digital strategy and protect its core business, which is built mostly around traditional broadcast revenues. It wanted a way to share its content with media companies and at the same time bring a more immersive and engaging experience to the fans, whether they watch the race at the roadside or follow it through live broadcasts or social media. While recognizing that the race already has a loyal fan base, ASO also needed to attract a younger audience, and this meant developing more event-based and interactive content.

Under the terms of the five-year partnership, Dimension Data retains the intellectual property relating to the technology solution and ASO owns the race data. Interestingly, the individual teams do not have access to this data, although they do have their own data, including rider biometrics.

The solution that Dimension Data provides to ASO has been developed over the first three years of the contract, with temperature, weather, wind, and gradient data added to the tracked data on the location and speed of the bikes. The focus has been on improving algorithms and the visual representation of data to bring an increasingly better story to race fans.

Although Dimension Data continues to track speed and location and combine this with external sources, this year the emphasis has been on using machine learning to predict the outcomes of events during the race. Small detachable tracking devices containing a geospatial sensor, a GPS chip, a battery, and radio frequency components, clipped under the saddles of all 198 bikes, transmit data once per second. They are connected via a mesh network to a road vehicle, which uploads data to a helicopter overhead and then to a plane, where it is multiplexed with TV signals. The data is then transmitted to the big-data truck at the race location, and from there to cloud-based-analytics,

machine-learning, and web-delivery platforms in Amsterdam and London. The data is cleansed and combined with external data sources such as weather and historical data. Content and real-time insight are then delivered to broadcast and digital channels, as well as to teams. Several of Dimension Data's managed services are used, including Managed Centre, Managed Services for Enterprise Network, Managed Services for Data Centre, and Managed Services for Visual Communications (videoconferencing), as well as a number of other collaboration tools, instant messaging, and social networks.

The partnership will bring added value in 2018

The technology partnership is expected to be further developed for the 2018 race, and Dimension Data says that it is constantly looking for new algorithms to combine live-tracking data and historical data with third-party data. For example, in addition to established sources of weather information, it is using crowdsourced localized weather information from nearby stations.

One area being looked at by Dimension Data and its partners is next-generation transmission technologies. Licensed frequencies are currently used, but this method is expensive, and traditional cellular connectivity cannot be used under these conditions. The partners are looking at the potential for low-power wide-area (LPWA) alternatives, such as LoRa, and they are testing solutions that could be used in other sporting events.

Live predictions are becoming increasingly important in sports commentary. This year, Dimension Data is using machine-learning and predictive analytics technologies to predict the outcomes of race events, such as the likely top five for each stage and whether the peloton will catch the race leaders. Such information is of great interest to fans and could provide new revenue streams. Dimension Data uses complex algorithms using historical data collated from the live tracking of bikes over the last two years, as well as rider performances, stage profiles, and race statistics across all International Cycling Union (UCI) races over the past five years. Using these technologies, Dimension Data is able to build profiles of riders, their strengths under particular conditions, and their likely performance in particular stages. It can also calculate "effort" based on speed, wind direction, gradient, weather, and so on.

Dimension Data does not have access to rider biometrics; these are monitored by individual teams, and the information is considered too valuable in competitive terms to be shared with other teams. This data would clearly be useful in predicting outcomes, but there is no immediate plan for this to change, although Dimension Data and ASO have conducted some trials in this area.

The value of technology partnerships

For ASO, the partnership has very clear objectives. ASO needed to protect its existing revenue streams and find new ones in a rapidly changing market. It needed to find ways to reach a larger and younger audience and deliver new and compelling content to meet the demands of increasingly digitally savvy sporting fans. In the first two years of the partnership, it has seen considerable success, as judged by the numbers of app downloads, unique web visitors, video views, and social media fans.

For Dimension Data, the partnership is seen as an investment and a way to demonstrate how new technologies and tools, supported by its enterprise managed services, can be used to change established processes and deliver a new business model for enterprise customers. It expects a return on its investment, which it measures in terms of net new business generated from the deal, and this is

currently 12:1, with a target of 20:1. The solution that it provides to ASO may be unique, but other businesses share many of ASO's challenges, and Dimension Data is already seeing traction in adjacent markets such as healthcare, education, security, and environmental applications. Its investment appears to be paying off.

Appendix

Further reading

Dimension Data: Bringing NTT Assets to Bear on Managed Cloud Services, TE0005-000929 (April 2017)

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