Highways England

DELIVERING DATA-AS-A-SERVICE TO SUPPORT A VISION AND STRATEGY

A BJSS Case Study

Our highways are digitising. From smart cities and motorways to driverless, connected vehicles, data is becoming a pillar of our critical national infrastructure. Highways England has a strategy that puts data at the centre of its organisation. However, it was yet to have an architecture which supported this vision, and was only beginning its journey to the cloud.

The Challenge

Like many organisations, Highways England's many sources of data sit in Excel spreadsheets, Access databases, siloed warehouses and operational datastores. They also reside in streams of information from roadside sensors and smart motorway networks.

To bring this information together, democratise access and make it available to the Data Scientists of Highways England, it became vital to deliver a free-flowing, safe and accessible road network.

BJSS was contracted to design and deploy a data architecture that was fit for use and designed to support Highways England on its journey of technology change, cloud and agile delivery adoption.

The Solution

BJSS delivered on three fronts.

1. A comprehensive ontology to represent the Highways England domain in a single, unified language that can be used consistently to support understanding of data across the organisation.

2. A technology platform, delivered in Microsoft Azure, that would support the ingest, storage, transformation, governance, management, and presentation of data across the organisation. This platform includes technologies such as Data Factory, Databricks and PowerBI, and was delivered following a DataOps culture, bringing BJSS' 27 years experience in engineering quality to the field of data.

3. Service Design ensured that the platform we delivered was built for all Highways England users and third parties. This led to high adoption and user buy-in.

Results

BJSS worked closely with a wide range of Highways England stakeholders to deliver the data platform. This was its first major public cloud programme. It was delivered into UAT within five months.

The delivery followed an agile approach and established new working practices. The solution supports the ingest of data from several sources across the business, patternising ingest and transformation, and modelling all data, derived from the Highways England Ontology. With the deployment of this platform and its integration into ways of working, Highways England is a master of its own destiny, with a platform that is fully in its control and isn't restricted by supplier IPR. This platform has also started the client on a journey to shared infrastructure services, demonstrating how they can start to rationalise a complex application estate through the use of public cloud and platform as a service.

The results have been well received by Highways England. Data Scientists use the platform to support the delivery of key outcomes, and data ingested into the platform is now available to users on a self-service basis.