

Brompton Bicycles dramatically boost production capacity based on insight from RS Industria, powered by AWS

Brompton Bicycle is one of the UK's best known bike manufacturers, renowned for their legendary fold-up bikes. Their Greenford manufacturing factory in West London and their welding site in Sheffield, Yorkshire, are running close to capacity in order to keep up with high demand for this essential item of sustainable commuting. Brompton's engineers were looking for ways to increase manufacturing capacity.

RS Industria was used to monitor key production assets and this data enabled Brompton to reduce the cycle time on a key CNC machine, increasing overall production capacity by 20%!

The Problem

Brompton had already used RS Industria to improve production line reliability and output – where next?

Malcolm Millar, Manufacturing Engineer decided to continuously monitor the performance of a key CNC machine. The complexity of the different machining operations meant that this six-axis machine had a relatively long cycle time and, because of this, had become a production bottleneck.

The Solution

This was nothing short of a game-changer, says Malcolm: "This industrial data platform has removed the need for testing a high volume of parts. RS Industria has also led to an improved cycle time, as well as freeing up engineers' time better spent on other activities. I have been using RS Industria to develop tooling speeds and feeds. By exporting peak torques for Spindles 1A/1B, I plugged the data into Minitab to run an optimisation analysis to minimise torque & noise."

BROMPTON

The Brompton bike was conceived as a product to help improve city living. It has established itself as the ideal choice for all those who are living or interacting with cities. The bike can be folded to a third of its size in a matter of seconds and is small enough to be taken on all forms of public transport.



RS Industria is part of RS Group, a global supplier of industrial spares, components and consumables. It offers asset and energy monitoring services to industry, enabling their customers to manage energy & other utility costs, improve reliability and reduce manufacturing costs

The Outcome

The result was that Malcolm's team were able to reduce the process cycle time, remove the bottleneck and increase annual production capacity by up to 20,000 bikes – all for minimal capital investment.

Serverless Infrastructure and Suite of Services Helped RS Industria Deliver More for its Customers

The fully serverless solution eliminated the need for RS Industria to manually manage a fleet of EC2 instances (for example, security patching, scaling profiles etc) to support its platform. This enabled RS Industria to remain lean and focused on its innovative platform and providing on-going value for its customers. The Industria team also knew that, should a customer wish to expand, it would be straightforward to scale out and manage the increased data volumes from the additional Edge devices.

The innovations enabled by both the AWS IoT Core and other AWS services, seamlessly support the data collection and analysis tools provided by RS Industria.

AWS IoT Core enables real-time upload of machinery telemetry data from the connected factories running edge devices on top of **AWS GreenGrass**. The data is then piped into both **AWS S3** and an **Amazon Timestream** timeseries database, where **Lambda** functions are triggered to process and store this data. This function also automatically builds dashboards from the sensor data so that customers can view their production line data, such as availability or energy usage. RS Industria's powerful analytics toolkit - *Data Studio* - also uses AWS managed services **DynamoDB**, **Lambdas**, **SQS**, **SNS**, as well as **S3**, enabling our customers to explore data to generate insight into their manufacturing processes.

Future Expansion: A breath of fresh air

The modular flexibility of the RS Industria system has enabled Brompton to look at broader aspects of production, such as actively monitoring air quality within the Greenford plant. This project is ongoing at the time of writing, but Brompton know that, as RS Industria is built upon AWS, scalability will not be a problem.

RS Industria data has... led to an improved cycle time, as well as freeing up engineers' time better spent on other activities

Malcolm Millar
Brompton Manufacturing Engineer

RS Industria is manufacturing-focused and speaks the same language as us: reliability, automation and problem-solving...when we first met them, these were some people we could really work with

Phil Dewson
Head of Maintenance & Facilities



RS Industria's modular structure meant that expanding the monitoring to more assets and equipment was made simple

- Multi-functional modules covering energy monitoring to asset health alerts
- A modular structure that enabled easy future expansion across the site
- The technical experience of the RS Industria support team
- The ability to scale as and when required.

Brompton's IT experts were also reassured by AWS's reputation for cyber-security and stability in cloud-hosted applications.