digiterre
A Collabera Digital Company

Success Story

Powering EnBW's Asset Optimisation Platform

EnBW

EnBW Energie Baden-Württemberg AG is one of the largest energy companies in Germany and Europe, and supplies over five million customers with electricity, gas and water. It is playing a leading role in the restructuring of the energy sector with a far-reaching company transformation driven by a complete overhaul of its technology.

Digiterre worked in close partnership with EnBW to deliver a cutting-edge, secure and scalable power asset optimisation platform as part of EnBW's wider transition from a traditional energy company into a sustainable and innovative infrastructure business.

Challenges

The project addressed a number of challenges:

- Business – Optimisation of complex physical power plants
- Project – Delivery of a large organisation transformation involving different parts of the business and activity
- Technical – Production of a platform on a completely new cloud-based infrastructure

> ***I have worked with Digiterre on several projects. This project was special due to the high complexity of the solution and the fact that all was done remotely.***

Andreas Ewert
Head of Middle Office, EnBW

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Project Goals

Digiterre was engaged to build a cloud-hosted platform for EnBW quants and analysts in the Generation and Trading division, to perform asset modelling and optimisation. This would enable EnBW to run models with greater flexibility and speed, using a highly scalable technology stack, and help them harness different programming languages.

Prior to the project, EnBW's asset modelling incorporated multiple sources for power asset data and used many different tools and applications. This meant there was no single source for storing algorithms and models and the data quality assurance process was cumbersome and involved multiple manual steps.

EnBW wanted to transform asset modelling using a 'modular' architecture with a single source for power asset data, dedicated and fit-for-purpose tools, including for asset optimisation and price curve generation, and a simplified data quality assurance process. This would allow EnBW to run scenarios in a timely manner, store optimisation results with archiving capability and benefit from a graphical user interface (GUI) for these activities.

Key Benefits

- Optimisation – we created an event driven parallel process for portfolio optimisation with results chaining, and target containerisation and cloud deployment
- Optimisation configuration – we consolidated configuration service for models using Jupyter Notebooks integration and full audit of changes
- KOM abstraction – we created APIs to existing data sources, being mindful of initiatives around event management
- Price simulation performance – we productionised price simulation in order to speed up the project delivery process
- Visualisation – we enhanced the visualisation of optimisation results

Our Role

Digiterre applied advanced software and data engineering capabilities to support the transformation. An initial discovery phase involved stakeholder mapping to identify subject matter expert stakeholders and product owners, and their responsibilities, across the division, and the development of requirements, including Epic backlog creation and prioritisation with initial user stories. This stage also involved initial API scoping and sketches and wireframes to enhance the visualisation of the data.

A delivery phase followed with a series of high-impact, pragmatic two week iterations to progress the build based on an Agile approach. Digiterre worked closely with the development teams at EnBW and embedded them early in the process of collaborative delivery. At the end of each iteration, Digiterre worked with the delivery manager, the product owner and key users to undertake an iteration review. This included the demonstration of the features that had been delivered, in order to elicit feedback from the various stakeholder groups; planning for the next iteration (for example backlog review, grooming and prioritisation); and retrospectives on the completed iteration to inspect and adapt the delivery approach in order to accelerate team velocity. In addition, regular informal demos and interviews were undertaken with stakeholders through video and audio conferencing. Technologies used included AWS Batch, ECS, EventBridge, Lambda, Cognito, ELB, Step Function, S3, and Aurora. Technologies used included AWS Batch, ECS, EventBridge, Lamba, Cognito, ELB, Step Function, S3, and Aurora.