

visplore

User Success Story:

How a large district heating operator validated his operational data and explored future business services.



Problem: Validating a large set of monitoring data and assessing future business services

A large district heating operator collected a considerable amount of process data over the years at minute resolution. These data covered temperatures, flow rates, and power consumption of his large consumers, area converter stations as well as operational data of his power plants.

The innovation department was called to explore the data and use it to evaluate ideas for future business services and optimizations. Working with the data was challenging due to the large amount of time series and data quality issues. Moreover, the engineer had a building energy system background and lacked advanced data science skills.

Need: Trustworthy data and dynamic processes to evaluate potential new business services

The project manager in the innovation department had to cleanse and check the data for plausibility and completeness. The dataset contained five years of data with a selection of 430 time series in minute resolution. Data issues had to be discovered and fixed, e.g. some energy meter values were not increasing monotonically.

Furthermore, it was necessary to evaluate how suitable the data was to create new business services for the customers. Being a highly explorative process, this required fast and dynamic iterations. Likewise, optimization potential had to be analyzed to potentially reduce return temperatures.

Highlights



Accelerated validation of large datasets



Explored future business services easily



Enjoyed high performance even with large data

Benefits



Evaluated business ideas within 2 weeks instead of 2 months



Engineers as domain experts were enabled to work with large data



Solution: Identified issues with monitoring data and prototyped new business ideas easily

The project manager used Visplore for quickly exploring and interactively preparing large sets of process data. By filtering similar variables, and comparing them in a normalized heatmap, Visplore revealed quickly when energy time series were reset after heat meter replacements.

Furthermore, the correlation dashboard explained the heating characteristics (such as night/day setbacks or weekday/weekend patterns) at one glance. Consequently, Visplore allowed the project manager to easily explore and prototype new business offerings by evaluating how suitable existing data was for e.g. future energy consulting services. At the same time, Visplore allowed him to interactively discover optimization potential and other valuable insights in an explorative process for the district heating company.

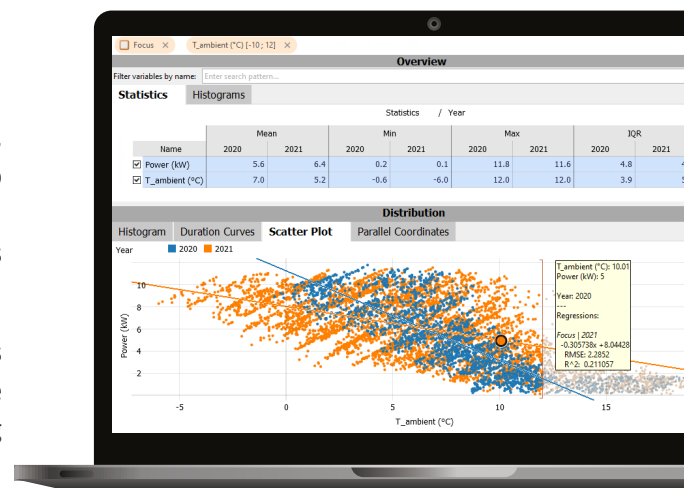
Result: Business ideas were evaluated 4x faster by the domain expert

Visplore's ready-to-use cockpits accelerated the process of validating, enhancing, and evaluating the available data set from two months to two weeks. While these tasks so far involved multiple iterations and specialists across departments such as data scientists, Visplore allows domain experts to do this now by themselves.

As a result, this enables the domain experts to evaluate new business services and optimization potentials 4x faster. Consequently, Visplore facilitates future innovations and agility through rapid prototyping and data-driven approaches.

“Checking and cleaning data from energy systems used to be very time-consuming and kept us from our core tasks. With Visplore, data preparation has become much faster, and the quality of the resulting data has improved.”

Leader of Energy Innovation Lab



visplore – Fast visual analytics for energy experts

- ✓ Prototyping Data-Driven Innovations
- ✓ Building Physically Plausible Digital Twins
- ✓ Modelling for Condition-Based Monitoring
- ✓ Troubleshooting of Complex Energy Systems

