Disruption is today’s keyword for the power industry. So, information counts. With our new data analytics platform, powered by Talend, we now can better understand where the market is going, which helps us optimize energy trading while managing risk and complying with regulations.

René Greiner, Vice President for Data Integration, Uniper SE

Providing sustainable energy for everyone with a modern digital platform

Uniper generates, trades, and markets energy on a large scale. With about 36 Gigawatts of installed generation capacity, Uniper is among the largest global power generators. The company also procures, stores, transports, and supplies commodities such as natural gas, LNG, and coal as well as energy-related products. Uniper customers include large industrial customers and municipalities in Germany and neighboring countries.

Providing self-service data and analytics in real time

The utility and power industry is in the midst of the biggest disruption in decades. Energy liberalization brings increased competition. Renewables and smart grid technologies have upended assumptions about capital planning, centralized vs. decentralized generation, and the underlying foundation of the business.

“We are in an increasingly complex world of ever-changing technologies and markets,” said René Greiner, Vice President for Data Integration, Uniper SE.

“We produce energy. We buy and sell energy via marketplaces. How much coal and gas do we need to produce today and in the future? Is the market going to turn in a completely different direction? How shall we expand our market positions? How can we maximize our profit and loss? Before we embarked on our cloud journey, we didn’t have our data readily available to quickly make these decisions.

“Once the idea of an organization-wide data strategy emerged, we decided to go with a public cloud solution for reasons of scalability and cost. We concluded that Talend would be the best software for such a cloud architecture,” said Greiner. “Talend’s ability to connect to a wide range of source systems and its modular product design were also deciding factors.”

Why Talend?

To create the Uniper Data Analytics Platform, Uniper selected Tableau along with Talend to integrate more than 120 internal and external data sources into a Snowflake central data lake in the Microsoft Azure Cloud. “Within 40 days,” said Greiner, “we were able to take 30 percent of our roadmap use cases live and prototype another 25 percent. And we reduced our integration costs by 80 percent in the process.”

Greiner continued, “Cloud is important to us because it makes data available to our offices around the world and not solely in our central office. We have a cloud strategy to bring as much of our landscape as possible into the cloud, which makes us future-proof. Talend is essential to our cloud strategy because it can access any data from virtually any place and removes limits on data format and volume.”

Greiner explained: “We just started our data journey. The amount of data is increasing and we are not afraid to reach the petabyte range quickly because we have the best technology on our platform. Greiner also added: “Data governance, as provided by Talend, is essential to the success of the data lake. If you want to rely on a platform like a data lake that contains data from disparate sources, you need a good data cataloging or data tagging mechanism, and you need to assign data owners. Talend Data Catalog provides those capabilities and helps us establish data lineage and the kind of security we need to comply with GDPR regulations.”
Talend has also been a “game changer” by supplying data ten times faster and ten times cheaper. Greiner explained, “We don’t want IT to be a bottleneck—we want it to be an enabler for self-service. We have a mountain of data, and we want people to be able to retrieve and use it themselves, which Talend makes possible. Self-service gives us an advantage in speed-to-market.”

Greiner’s team is a mix of business and IT staff who collaborate to address specific business use cases and solve real pain points for the company. “Talend gives us the agility to do that,” said Greiner. “A business person can describe a problem to a skilled Talend developer, who can then quickly create a solution that together they can refine.”

Trading successfully and managing risk

Talend works across the enterprise to help Uniper with market analysis, gas trading, asset management, and post-trade administration.

To make informed decisions, Uniper relies on marketing analytics based on real-time information. Now that the relevant information is aggregated in the data lake, market analysis teams can access data faster and provide answers faster to questions they get every day from traders. Questions that previously required months of research can now be answered right away, or in just a few days.

Speed is important in answering questions because the earlier trading teams can react, the earlier they can take a position and that can make a difference of millions of euros. For gas for example, it’s essential to understand the demand for power and how it changes with temperature, which affects the volume delivered. There is so much data that it’s impossible for a single person to interpret it all. The data lake solves the problem because it makes data available continuously and enables trading teams to automate trading when prices reach a pre-established threshold. So now, Uniper can move immediately to take a position, when, in the past, it would take days to pull together the necessary data.

Leveraging IoT applications when powering assets is also a key advantage. Once traders have taken a position, power-generation assets need to produce the energy required. In the past, power plants were always on and shut down only for repairs. Now, Uniper gets real-time information from sensors in the plants, which monitors their status, receives early warnings if components need to be replaced, and ramps up or ramps down production depending on demand. This IoT application makes it possible to develop a plan for each power plant that aligns with the overall corporate strategy for asset management.

The Uniper data lake and Talend have also greatly reduced operational risk and exposure to serious and quite public consequences. Post-trade administration has become just as important as the trades themselves. The risk Uniper runs with a regulator for not accurately reporting positions, or with a transmission system operator for failing to take gas off or on a network, can run into tens of millions of euros. Documenting and reporting trading transactions is also a regulatory challenge. Every day, energy companies such as Uniper must report to European regulators all the positions they’ve taken and all the deals they’ve transacted. This requires complete transparency and superior internal compliance and control mechanisms. The need for this ‘trade surveillance,’ which includes fraud detection, was a major driver for the move to the Uniper Data Analytics platform.