

#### **OVERVIEW**

The customer, a Fortune 500 Energy Retailer, serves millions of residential, commercial and industrial customers in several competitive markets and countries.

The Retailer's implementation of Energyworx' Energy Deal Analytics Application, coupled with Energy Intelligence Algorithms, allowed the company to significantly reduce supply portfolio risk and provide their customers with more competitive offerings.

## THE CHALLENGE

The energy retail industry is facing a unique set of challenges as a result of the Energy Transition. The rise of the Internet of Things environment and digitalization of the grid is creating new opportunities to reach and serve customers in a more personalized way. New competitors are joining the market, putting increased pressure on traditional offerings.

Our Retailer was facing many of these same obstacles when it decided to reduce its dependency on traditional infrastructure to become a more agile organization. The Retailer first started with its generation assets, then moved to the various IT infrastructures it was maintaining. The Retailer's goal was to rely on services more than hardware, allowing them to adapt to changing market conditions much quicker than before.

At the center of their customer acquisition and servicing process is Energy Deal Analytics (EDA). This process touches the entire organization, from sales to supply, and begins with the opportunity to provide a prospective customer with a new offering.



The Retailer's EDA process had not been updated in over a decade and was negatively impacting both deals won and the risk of their supply portfolio. Specific challenges included:

- Lengthy processing times that inhibited the pace of deal flow
- Strained internal systems that led to inefficient workarounds which could not scale
- Complex and siloed analytics tools, reducing productivity and frustrating business teams
- Inability to handle exceptions and implement new logic
- Poor initial data quality that impacted the reliability of load forecasts and the profitability of their portfolio
- Success of advanced analytics and machine learning limited by initial data quality
- Growing competition in the market made it increasingly difficult to gain and retain customers

With an existing infrastructure that was incapable of handling larger volumes of data and changing market conditions, it quickly became clear to the Retailer that the **real challenge was in managing the rapidly growing volumes of smart meter data, while at the same time increasing its quality**.

## **THE SOLUTION**

The Energyworx Intelligence Platform powers a variety of cloud-based, utility-agnostic applications to better understand and predict customer consumption patterns. These business applications are user-friendly for non-technical individuals and are developed out of the prototyping approach the Energyworx team follows to successfully deliver projects.



To support this process, Energyworx offers an interactive tool called Datalab as part of its SaaS-based platform. Datalab allows algorithms to be developed, tweaked and interactively tested on live data which can then be visualized and further refined directly in the Datalab environment. Additional data sources can also be included with the time series to provide added context such as holidays/events, weather and outage information.

The key advantage of the Datalab is its connection to the Energyworx Production Environment. Once a model or algorithm is proven successful on a subset of data, it can be published directly to Production to run at cloud scale on all desired data sources. The Retailer can now move from prototype to production without delay, continuously improving their deal flow and forecasting accuracy.

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Through exploration and prototyping, the Retailer learned about various data quality issues impacting their load forecasts, as well as the number of load shapes that could be catered to with proprietary algorithms, models and new products. The learning process continues, but after several weeks the Retailer was ready to deploy and monetize their new deal analytics flow.



The Business Application was designed to provide the Load Analytics Team with all the functionality needed to move from several tools to one centralized view, including:

- Dashboard to stay informed and quickly act on flagged accounts
- Search screen to easily find accounts based on meter number, market, utility and several custom filters
- Detailed account views for visualizing the data, assessing data quality and analyzing the performance of the VEE Flow & Forecast
- Integration with Datalab environment for custom runs and manual adjustments
- Rules Management for sequence design and modification of parameters
- Identity Access Management for controlling permissions and setting up user rights/roles

The Retailer started with a desire to update their deal analytics process by moving to a Software-as-a-Service model to reduce internal IT risk. By choosing Energyworx they not only realized the reliability and limitless processing of the cloud, but gained control of their data quality for continued accuracy improvements.

The implementation required no upfront investment in software or infrastructure, and was fully integrated within 16 weeks time. With Energyworx EDA, the Retailer now scores every forecast to inform the analytics team and benchmark quality over time.

# **THE RESULTS**

Energyworx is providing unprecedented insight and control over the Energy Deal Lifecycle. This transparency has allowed the Retailer to automatically generate forecasts at a much greater consistency than before. Their previous set of products only allowed for 20% of accounts to automatically move through the deal lifecycle, whereas Energyworx was able to achieve 60% on day one of go-live.

The goal is to achieve 80% automation by the end of the year. The accounts that 'fail' the flow, signal the analyst that manual attention is required. This process further improves automation levels by allowing the analyst to tag data sources with typical patterns that apply to similar regions, business types, etc. This learning process combines analyst observations and audit trails captured by the Energyworx platform to form the basis for new automated sequences.

From a data quality perspective, the Retailer has moved from an unknown level of accuracy to scorable forecasts. With measured data and forecast quality, the Retailer now has the tools to further improve accuracy and thus the competitiveness of their customer offerings. Energyworx has applied machine learning models based on this scoring to produce more precise load shape detection and the fine-tuning of parameters.

By utilizing the Energy Deal Analytics Application, **the Retailer is able to trust their load forecasts and provide competitive offerings to the market with limited supply risk**.

## **LOOKING AHEAD**

The success of the EDA application has established a data quality foundation for the Retailer and provided the tools necessary to continually build competitive advantage and better optimize supply.

The Datalab functions as an advanced tool for handling complex accounts during production, as well as a sandbox environment for building and testing new algorithms. The latter can help the Retailer develop proprietary validation, estimation and forecast models which can be published to run at scale in the Production Environment. This approach can be extended to other use cases such as new product development.

The Energyworx "API first" strategy also provides a simple platform for developing new frontend applications. For example, the user interface for the EDA application only took a few weeks to develop as the core logic had already been implemented within the platform. The Retailer intends to develop several of these applications to support internal needs, such as sales, and to directly engage with its diverse customer base.



### **ABOUT ENERGYWORX**

Energyworx helps utility companies monetize their data.

The solution is based on specific algorithms and workflows for the energy industry. It offers one central location for storing and analyzing all information and is accessible for many applications. Because of its "API first" architecture, data is easily accessible from your own IT landscape and applications. With a smart tagging concept, Energyworx lets you analyze a variety of other data sources, including weather, GIS and sensor data.

The platform contains data modelling, advanced analytics and machine learning capabilities. With Energyworx Datalab, data scientists and business analysts can explore new data sources, discover valuable correlations with smart meter data, develop new analytical models and forecasts, and test them on live data.

Solutions from Energyworx are available without any upfront investments in infrastructure. Time-to-market is typically within weeks instead of months. The pay-per-use price model scales with the actual usage of the system, including infrastructure and support.

The Energyworx platform leads to a significantly lower Total Cost of Ownership (TCO) for energy Retailers supporting a diverse customer base in several different markets. It decreases risk and improves the margin by being able to generate more accurate forecasts much faster than before.

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