The Big Deal

WITH BIG DATA AND ANALYTICS

WHITE PAPER

RateAcuity

ANALYTICS HAS BECOME INCREASINGLY PREVALENT IN TODAY'S WORLD. The breadth of what it can do for businesses, marketers and everyday consumers continues to expand. But what exactly does "analytics" encompass? And what kind of role will it play in the future of the energy sector?

ANALYTICS AND ENERGY/UTILITIES

In short, analytics refers to our ability to collect and use data to generate insights. We then use these insights to inform fact-based decisions, usually within a business context.

Energy is one area where big data has enormous potential. Analytics can optimize the performance of grid devices, chart energy usage trends and send automated predictions to utilities and power companies. It helps us use the data generated by smart meters to determine how many kilowatts are being used at different times of the day. By applying additional referential data, such as cost per kilowatt, analytics can also convert kilowatts into dollars. These dollar amounts tell us how much our energy usage is costing and how much we might save by making changes to how and when we use power.

Because of its many capabilities, energy data analytics has been a hot area for investors and startups. In 2016, software giant Oracle announced that it planned to buy Opower, one of the first energy data startups to release software designed to reduce customers' energy use. Other energy data startups like eMeter—a data management leader that made analytics to crunch smart meter data—have been acquired by power companies like Siemens at steep prices.

Utilities can use analytics in a way that's beneficial to customers. They're able to lower costs and provide customers with information that allows them to make informed decisions about their energy uses and choices, like whether or not to upgrade their AC unit or invest in solar energy. Gas and electric industries can use analytics to forecast where and when power will be needed and how it will impact the grid. Customers benefit from the improved operational reliability, as well as the ability to take advantage of more cost-effective resources.

THE VALUE OF BIG DATA

The amount of data in the world is growing exponentially. In fact, the rate at which we're generating data is outpacing our ability to analyze it. But there is still an incredible amount of opportunity in big data—i.e. the large, varied data sets we collect over time—and advances in information technology mean we will soon gain insights on nearly *everything*. The current data explosion is merely fuel for analytics, and the possibilities are endless.

Today, various devices track and store data on many aspects of our lives on a daily basis. Some examples of this include:

- Emails, social media updates and phone conversations
- Browser history—what we click, buy, listen to and read
- Smartphones that track our location
- Cars that track our driving
- Smart watches, fitness trackers, etc.
- Smart TVs that track what you watch and how many people are watching

Data is also becoming more available to the public. Google Trends and Google Maps are great examples of this. But without the right information, knowledge and analytics, data is pretty much useless.

The ability to harness big data can make or break a corporation. Organizations using big data are 23 times more likely to report they are substantially outperforming their competitors than those who do not.

Analytics can benefit industries—including the energy sector—in a number of ways. Some examples include:

- Helping consumers and companies manage their energy and electric costs
- Identifying potential issues in power generation, grids and power distribution equipment to optimize more costly assets
- Detecting energy losses due to fraud or theft

- Running more efficient homes: smart homes are becoming more and more intricate. The amount of smart devices will increase dramatically over the coming years, and analytics will allow us to run more efficient homes, i.e. central heating systems that can adapt to your lifestyle, or refrigerators that can call an engineer when there is an issue
- Improving the customer experience by gaining insight into customer energy usage

Analytics is something that every individual and every industry can benefit from. It's a capability that can shape the course of our future, especially if we use it to take preventative measures and predict purchases, electric rates, consumer behavior and future needs.

ACCURACY, TRANSPARENCY AND PREDICTIVE ANALYTICS

Accurate data is key to successful analytics efforts, and inaccurate data can cost companies a fortune. At RateAcuity, the foundation of our data division is built on Dr. Redman's Rule of 10: "For every dollar it costs you to do work when the data you receive is perfect, it costs you $10 to do that work when the data contains errors." In other words, a project estimated to cost $1,000 could end up costing $10,000 if inaccurate data causes delays, reworks and erred results. These costs don't even account for potential customer ill-will, nor the drop in employee morale that happens when mistakes are made.

Inconsistent data can lead energy producers, consumers and investors to misread supply and demand trends. This prompts people to make poor decisions that can negatively impact global markets and distort pricing.

The current transition from fossil fuels to clean energy also means that access to up-to-date, real-world data is more critical than ever. This data contributes to energy planning, academic research and energy policy analysis, as well as consumers' ability to participate in energy matters.

Today consumers want more insight into their energy usage, and many companies are already using open data to lower costs, improve performance and focus more on environmental priorities. They're also focusing more on predictive analytics rather than reactive analytics. Predictive analytics helps grid operators, systems engineers, controllers and other plant personnel take advantage of massive amounts of data and use it to make real-time decisions that have a positive impact on equipment reliability and maintenance. Predictive analytics can also help power utilities monitor assets to identify, diagnose and prioritize equipment issues in real time.

OUR DATA FUTURE

With the dramatic and continuous increase of data availability, it's important to tap into the moneysaving and increased efficiency potential of analytics. This is especially important in the energy sector, as customers are more frequently demanding more transparency and lower costs.

As long as industries are able to gather accurate data, the potential of analytics is limitless—especially once we're able to keep up!

About Rate Acuity

KFR Services RateAcuity™ electricity rate database gives our clients insight into the costs for different tariffs and schedules from electric utilities across the country. We leverage our staff of expert rate analysts and our 40 years of experience in dynamic data environments to monitor tariffs and deliver the most accurate and up-to-date rate databases to the energy and telecommunications industries. RateAcuity includes electric rate information from residential, commercial and industrial, demand response and electric vehicle charging tariffs. Since 1975, KFR Services has produced the highest quality data for telecommunications service providers throughout the country. Experience and expertise earns KFR the reputation as the most accurate telecom database provider in the industry. In fact, the nation's largest service providers use our databases to rate billions of calls each month at *99.999% accuracy (3 year average).