The Myth of the Utility Death Spiral: Five Ways Big Data Will Change the Power Industry for the Better

Utilities are dead. Or, at least that’s what the news would like you to believe. Instead, they are in the midst of a transformation, driven by technologies that are allowing distributed resources to take over some of the work performed by large, centralized assets, just like PCs changed the role of mainframes and data centers. Big Data will play an outsized role in this transformation. Here are five ways that the impact is having its effect.

**Predictive Maintenance**
Many utility providers perform scheduled maintenance on equipment, but scheduled maintenance is both expensive and inefficient. Predictive maintenance allows them to better allocate resources while cutting costs and reducing service disruptions.

Dong Energy, a leading provider of wind energy, has implemented a condition-based maintenance program to better coordinate maintenance trips with wind and wave conditions, reducing the total number of trips. Just cutting unscheduled maintenance visits from four to two per year could save the company approximately €20 million annually. SF Public Utilities Commission expects to save 9,000 hours of employee time.

**Renewables Integration**
Arizona Public Services (APS) is a leading solar utilities provider that operates nine solar power plants, 59 commercial scale arrays, and 1,500 APS-owned residential rooftop systems. Using Big Data from its residential rooftop systems, APS can now see how residential solar systems can impact the grid. Using historical data, APS is now moving towards predictive analytics that will help it forecast solar power generation up to one week in advance.

**Capital Efficiency**
Xcel Energy has created an advanced wind forecasting system to improve its ROI from its renewable turbines. Over the past six years, Xcel estimates that Big Data has helped lower the mean average error in its forecasts by 38 percent and saved approximately

---

**Bill McEvoy** and **Miguel Chavero** are Industry Principals in the utilities group at OSIsoft.
$46 million through reduced gas consumption and lower maintenance costs.

**Software Development**
Utility providers have a plethora of skills, but software development isn’t one that typically comes to mind. Often, utility providers are a market of one when it comes to software systems, so many of them develop solutions in-house that are customized to fit their needs. Today, as utility providers look to capitalize on Big Data, some are spinning off internal applications into viable businesses that use this data to offer extended — and beneficial — services to customers.

For example, Edison International now operates Edison Energy, an independent advisory and services company that helps customers manage energy portfolios. The company is built on $100 million of startup acquisitions and operates separately from Edison International and focuses on things like lowering costs for customers. PJM and Tepco are similarly looking at ways to commercialize new services through in-house technologies.

**Customer Service and Social Media**
Social media can be a company’s best friend or its worst enemy. For utility providers, customers are often the first to report outages, and they do it publicly on social media channels. With increasing regulatory pressure placed on customer satisfaction, utilities must meet performance metrics around customer satisfaction.

Vitens, a Netherlands-based supplier of drinking water, is typically notified by customers when there are pressure, leakage, or outage issues. But being notified by customers meant that it was always one step behind issues that arose. Big Data helped it implement a program that would alert it to issues before customers.

For utilities, the rise of Big Data is only the beginning of the revolution. As efficiency and delivery become even more crucial to providers’ ability to deliver resources to customers at a competitive price, they will turn to Big Data to improve existing business models to deliver utilities in a cost-effective way.

For more information, please reach out to us at wmcevoy@osisoft.com or mchavero@osisoft.com