The Sustainable Utility: Data takes center stage

By Ted Schultz

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When I began my utility career nearly 40 years ago at NYSEG, an electric and natural gas subsidiary of AVANGRID Inc., I wasn't trying to save the world. I was trying to put my business degree from the State University of New York at Albany to work. Stepping into a newly deregulating space—one as important as energy—seemed like a great place to get started.

It was. Change was in the air. Little did I know that business transformation—back then dominated by newly opening markets and the move to distributed computing—would be a constant across the industry that would last my entire career. Starting at NYSEG, I had a 27-year utility run before retiring early from Duke Energy as vice president of marketing, where I managed the regulated energy services business. Then, on the utility solution side, I spent time at Ecova, TROVE, and now E Source, where I'm CEO.

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And now I do want to do my part to save the world.

Or, rather, I want to lead the transformation that will help utilities save the world. Because utilities matter. They always have. Just ask someone without power or safe drinking water. Not only do they matter when the lights go out, but they also matter every second they're on, playing a starring role in the very survival of the planet. Nearly every road to carbon reduction and eventual zero-net carbon emissions leads to and through utilities.

Utilities are being asked to thread the needle

This is both good and bad news. The good news is that if utilities get it right—that is, if they're able to rise to the challenge and meet their 2030, 2040, and 2050 sustainability goals—worldwide emissions could fall precipitously. The bad news is that the kind of transformation this requires isn't in the utility industry's wheelhouse. Regulation, not innovation, has been the byword of the industry, resulting in a culture of incremental, and sometimes grudging, change.

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But incremental change isn't going to cut it. Just look at Evergy's sustainability transformation plan. The plan accelerates Evergy's transition to cleaner energy (80% reduction in carbon dioxide emissions by 2050), increases capital investment in "critical utility infrastructure" to nearly $5 billion, anticipates 5% to 6% rate base growth and 6% to 8% growth in earnings per share (EPS) through 2024, and promises increased benefits for customers and communities.

Oh, and one other thing: it reduces operation and maintenance (O&M) costs by 25%.

That's because rates need to remain affordable. *Increased capital expenditure meets downward rate pressure.* That's the needle utilities are being asked to thread.

Utilities are facing unprecedented challenges

I bring this up because the budgetary push and pull sets the stage for a decade of major transition and consequence. Utilities are facing the biggest challenges in their history as well as a major opportunity to grow and make a positive impact on society, all driven by the following trends.

Sustainability. Decarbonization efforts in service of reaching zero-net carbon emissions are the clarion call of the industry. Mass adoption of renewables at scale—wind, solar, battery storage, and an emerging set of new energy sources—is in motion. At the same time, collaborating with business and residential customers using distributed energy resources like solar and demand response will only grow in importance. Feeding into all of this is increasing demand for EVs, part of an electrification wave that could drive utility growth for decades.

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Safety and reliability. While utilities are battling the root cause of climate change—greenhouse gas emissions—they're simultaneously fighting the consequences of climate change: more-severe fires, droughts, floods, and temperature extremes. We must build a smarter, more resilient grid to literally weather the storm,

and it will cost billions.

Equity. Energy equity has always been an issue, but as a consequence of COVID-19 and its ongoing variants, low- and moderate-income residential customers, and small and midsize businesses have gotten clobbered. They need, and are demanding, more from their utilities to handle energy expenses and gain access to efficiency programs.

Historically, and treated individually, utilities might have tackled each of these macrochallenges with a tried-and-true approach: throw money at them. But that won't work this time. This time is different. All three trends have emerged contemporaneously and in the face of a game-changing constraint: downward cost pressure. Large rate increases aren't an option.

It's time for a data-driven transformation

The limited ability of utilities to raise rates fundamentally changes the math of utility transformation. With hundreds of billions in needed capital investment on one side and affordable rates on the other, O&M costs have moved to the middle, becoming the fulcrum. Simply put, utilities' numbers for sustainability, safety, reliability, and equity don't and can't add up without a massive decrease in O&M expenses and optimized capital expenditures.

But how is that going to happen? That's literally the billion-dollar question—one that necessitates a radically different approach. An approach that's rooted in data.

We're well beyond the hype of big data. We've turned the corner. Now it's up to utilities to dive in and accelerate their transformation. The strategic use of data is now a must-have capability for every utility in search of increased customer engagement, infrastructure optimization, and sweeping cost reduction.

And data is readily available.

The prevalence of advanced metering infrastructure and other sources of utility and customer data, the maturation of data science, the evolution of artificial intelligence and machine-learning solutions, and the growing understanding of how to put them all together to move the needle quickly and efficiently means there has never been a better time for utilities to play offense, flip the script on innovation, and save the world.

Data is the accelerant. Go ahead and pour it on!