Utility Execs' Roundtable

The Power of Innovation

We sat down with five utility execs who lead their companies on innovation

The electric utility industry has recognized that its future will look much different from its past. An environment where disruptive technology establishes opportunity and customer behavior defines necessity. It drives a fundamental reshaping of how the industry positions itself to meet these challenges.

To address this market shift, industry executives have begun to communicate internally about the importance and value of innovation within their companies. Executives have also been tapped to "stand-up" organizations to enable these companies to adopt the kinds of practices long embedded in industrial and consumer products companies.

Utility Execs' Roundtable

Strategy& and *Public Utilities Fortnightly* recently collaborated on an Innovation Roundtable in Washington, D.C. at the offices of the Edison Electric Institute.

The experiences of these senior executives convey insights attained through the hard work of creating their unique innovation platforms. For other companies just now forging their own ways to innovate, these insights can accelerate program development. And harness a collective experience that can eliminate false starts and costly failures.

Meeting the Innovation Challenge

Executives in the electric utilities industry appreciate just how hard it is to recast a company's go-to-market philosophy and business model in a period of uncertain market evolution. But they know they cannot stand still while their market environment changes in ways they have never experienced.

The executives acknowledge that the marketplace is evolving in ways that will challenge their ability to sustain the type of presence – mind-share or wallet-share – that they historically enjoyed.

Even with this emphasis on innovation within their businesses, the executives know that customers are signaling broader expectations from them. And these expectations are no different than those embraced by customers from the many other providers with which they also engage.

The companies are positioning their innovation platforms to extend linkages to the customer and enhance customer relationships. These relationships are moving beyond simple service interfaces, to complex interactions where customers are able to influence – if not control – how energy is used, provisioned and priced.

Building adaptable innovation platforms means that companies need to come at customer challenges differently and change the focus from why to why not. And companies will now need to move beyond asking whether to enter a market, to how fast can we be in the market.

Rather than being asset-out to our customers, it's now customer-back to us.

The executives agree that thoughtful and sustainable innovation platforms are a table stake for future success. These platforms will need to be adept at ideation, technology evaluation, market deployment, value propositions, enterprise collaboration and commercialization.

As business complexity increases, commercial and industrial customers will seek to exert more control over energy supply, costs and reliability, and obtain more services to support this outcome.

Residential customers, on the other hand, will seek more unique options for themselves. These customers will entertain simpler, but more valued relationships with their provider – the incumbent or a new type of entrant – to ensure that their energy consumption and selection decisions are optimized.

The executives recognize that today's customers are availing themselves of new, consumer-friendly technologies that many in the utility industry do not use or understand. Herein lies the challenge of bridging demographic gaps between old brick and mortar companies and the one-click mentality of a different generation of technology-adaptive consumers.

The companies believe they are building momentum toward technology adoption through a mix of crowd-based, venture capital and market-back mechanisms. But these technology options are only a means to fulfilling other fundamental customer ends related to comfort, convenience, choice, communication and collaboration.

All these companies are still at the front end of their innovation platform development efforts. Yet they know that first steps are fundamental to the long journey and success will be achieved one situation and transaction at a time.

– Tom Flaherty, Partner, Strategy&

Tom Flaherty: The industry sometimes asks: haven't we been innovating all along? Why do you think the industry is so focused on innovation now?

Bert Valdman, CEO, Optimum Energy (former Chief Strategy Officer, Edison International): Our stakeholders are pointing us in that direction. And there's an incredible technological opportunity in many areas, from distributed energy resources to energy efficiency.

For example, the low cost and accessibility of cloud computing is enabling new business models related to when and how electricity is consumed.

Chris Gould, Senior Vice President – Strategy and Chief Sustainability Officer, Exelon: The landscape's been changing for some time for all the drivers that Bert mentions. But it seems to be accelerating at an increasing rate.

The trick is figuring out how to pace yourself relative to that change.

We have a lot of discussion about where do we want to be leaders? Where do we want to be fast followers? Which makes sense for our stakeholders and our businesses. Particularly when we think about proving out some technologies. Where do you pilot versus go full-scale?

Sasha Weintraub, Senior Vice President – Customer Solutions, Duke Energy: I remember conversations about how no one will want to manage their energy. Because, it will take too much time and not be something people are going to want to do.

Now you're at a point where it's being done for you with the advancement of technology. Whether it's Alexa or whether it's all the other systems that can manage and optimize the things in your life that matter to you.

Don Clevenger, Senior Vice President – Strategic Planning, Oncor: As of the end of September, Oncor had six hundred sixty-five megawatts of distributed energy resources attached to our system. These resources are behind-the-meter at over nine thousand facilities.

Ninety-six percent of the DER facilities are solar PV. But that only makes up fifteen percent of the total DER capacity.

Customers are adding on average about two megawatts of DER a week. A hundred fifty to two hundred facilities a week.

By 2020, we're expecting to have, if the trends continue, over a thousand megawatts of DER capacity on the Oncor system.

The total amount of peak load in Oncor's service territory is about twenty-four thousand megawatts right now. So you're starting to talk about four to five percent of the peak load being DER in the future.

Chuck Darville, Senior Vice President – Marketing, Southern Company: Southern would say we've been innovating for a long time.

Generally, the value of the attributes of our product has been changing over time. In the past, the customer's focus was on affordability and reliability. 'Clean' has now become much more important today than it has been in the past.

Independence, control, convenience are aspects of our product that we really need to embrace the way our customers have. We're now looking at our product differently. How do we offer those characteristics differently than we have before?

It's a mind-shift. Rather than being asset-out to our customers, it's now customer-back to us.

Tom Flaherty: What has been driving your vision about innovation?

Chris Gould, Exelon: The initial vision, in the short-run, was to 'get in the game.' To understand these trends and dynamics more deeply.

To do that meant getting out from the traditional mindset of 'asset-out.'

We needed to better talk and engage with stakeholders and customers themselves. And also talking with the technology providers out there and those working in places like labs, universities and venture communities.

Sasha Weintraub, Duke Energy: At Duke Energy, our innovation focus has been present for a long time. There's just a different focus now. In the past the focus of our innovation efforts was internal, like how we can operate our power plants more efficiently or cleaner or the grid to be more reliable.

Now, we have been evolving into a different innovation space with the customer.

A lot of people would buy a four-dollar cup of coffee, and it's because they see value that justifies the cost.

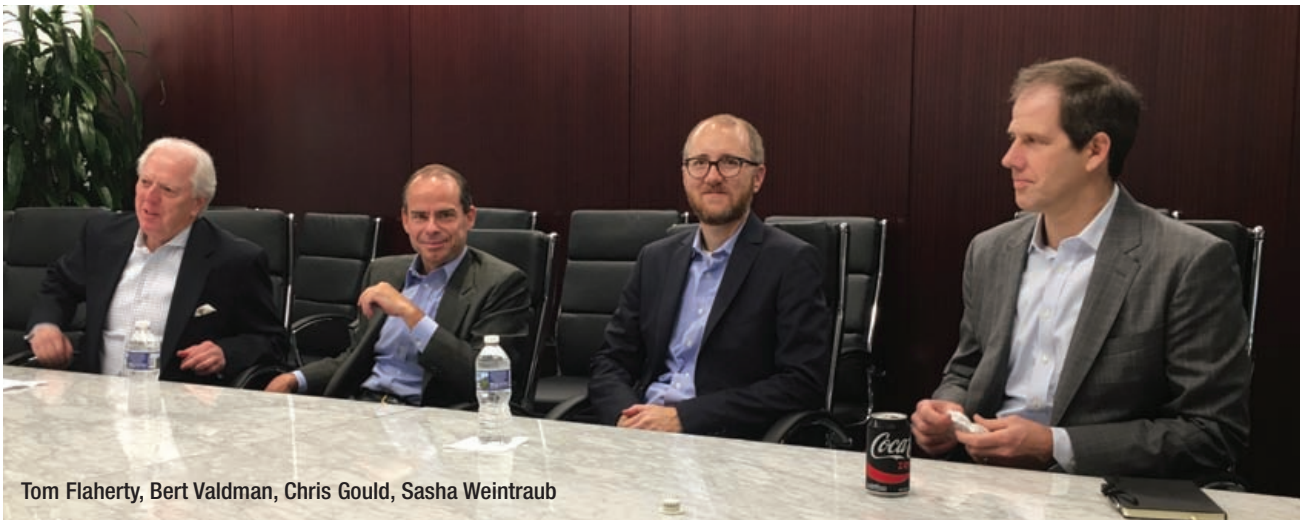
Don Clevenger, Oncor: If you look back ten years ago at the T&D industry in Texas, we were looking to provide the infrastructure so the market could work after deregulation. We built thousands of miles of new transmission lines for the new generation that was being built.

Then we turned to what the customer was going to expect. The backbone to meet customer expectations was advanced meters. We installed smart meters at all 3.2 million premises over a five-year period – a herculean task.

Now our goal is to have the system prepared for whatever the customer needs. Whether its solar PV or electric vehicle charging, we are thinking in terms of how the system can be flexible enough for whatever our customers want.

Chuck Darville, Southern Company: For us at Southern, we had a three-fold approach for setting up for our vision for innovation.

One, enhance an innovative culture. We think we've been innovative. But with these new challenges ahead of us, we realized we needed to better tap into all employees. We should have


Tom Flaherty, Bert Valdman, Chris Gould, Sasha Weintraub

thirty thousand employees engaged in helping us address the opportunities ahead of us.

Two, incubate new products and services. We sell energy. Are there other things we might be able to offer?

Lastly, can we evolve our business model? We've been central station focused. We make, move and sell energy. Could there be different models we may be able to employ to 'go-to-market' to our nine million customers?

Bert Valdman, Optimum Energy: In the past, innovation was often limited to tracking and testing new technologies to determine whether they could safely be integrated into the utility's electric system. And to the extent new technologies were actually deployed, to ensure there would be economic recovery and no risk of regulatory disallowance.

Now the focus is determining the commercial viability of new technologies, often outside of the regulatory context.

But there might be an even bigger underlying theme related to the role of technology in the electric industry. When the electric industry was in its nascent state a hundred years ago, technology was a means of asserting dominion over the environment. Today technology is being deployed to enable better environmental stewardship.

Dominion versus stewardship are two fundamentally different concepts and will impact what innovation looks like in the future.

Tom Flaherty: What do our customers think regarding where the industry should now focus?

Chris Gould, Exelon: We asked ourselves why customers are buying things that look uneconomic from a cost perspective.

We called it Project Starbucks. We asked who would buy a four-dollar cup of coffee? Well, it turns out, the whole world. A lot of people would buy a four-dollar cup of coffee, and it's because they see value that justifies the cost.

We then asked why our energy customers would be any different? Why are we as companies any different than that? And the answer was, both they and we are not.

We used that lens and applied it to customers and really looked at our customers in a completely different way.

We employed more of a pure consumer product focus with direct engagement with customers, just like a product placement company would. Like Disney Merchandise, or any purely commercial entity.

Bert Valdman, Optimum Energy: For commercial and industrial customers, electricity is viewed as a growing component of the cost structure. Whether it's because of visualization tools or operational excellence initiatives, increasingly customers are measuring and tracking electricity expenditures more closely.

We need to learn how to meet customers where they are.

And there's the view that electric rates will continue to increase with time. It's a view that investor-owned utilities helped perpetuate by talking about the massive capital requirements of maintaining and upgrading aging electric infrastructure and integrating distributed resources. We talked about investing billions of dollars in capital expenditures that would result in higher electric rates.

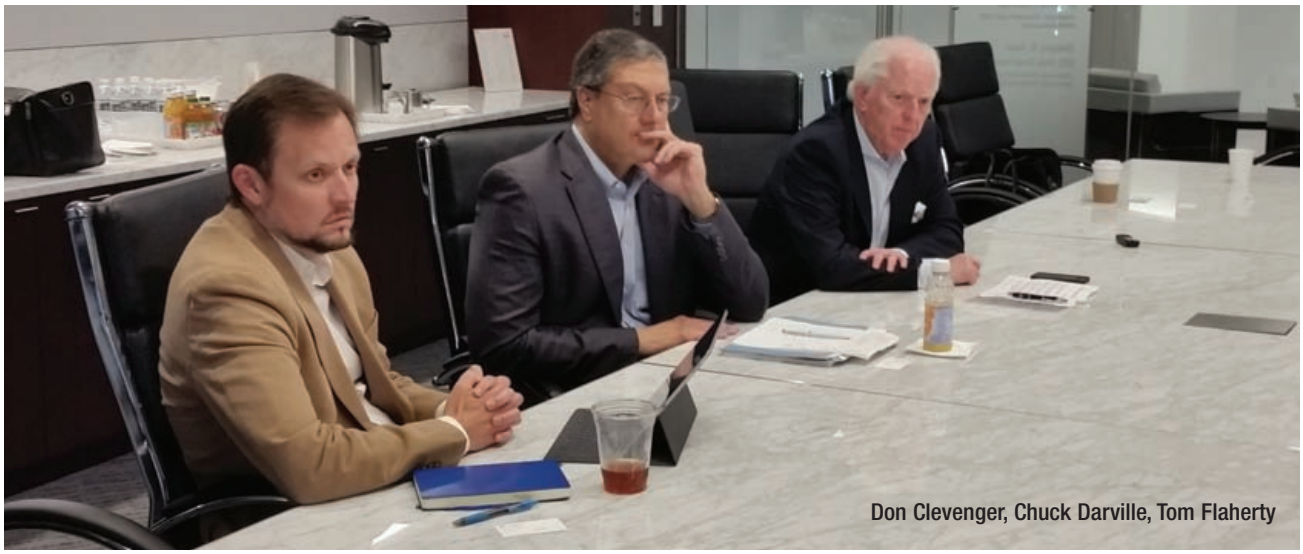
Customers said to themselves, wait, electricity expense will increase and this is out of my control. How can I assert control?

This naturally leads to a series of initiatives. Shrink load, then deploy resources independent of the regulated utility.

Sasha Weintraub, Duke Energy: Segmentation of data is becoming more and more a part of all that we do. It's how we market and address the likelihood for people to have interest in the products we offer. It's how we plug in other things into our ecosystem and do it faster.

Tom Flaherty: When we interact with our customers, what's surprising about what they're telling us?

Chuck Darville, Southern Company: We know our large customers exceptionally well. As you start getting more into commercial and residential, I think our self-awareness is good enough


Don Clevenger, Chuck Darville, Tom Flaherty

where we admit we don't know as much as we should know.

For example, we have an e-commerce platform. And we wonder how do we get people to come to our website?

Others ask, why would you ever want them to go to your website if you're already on websites they really like? For us, we need to learn how to meet customers where they are.

Tom Flaherty: Does contextual commerce apply, i.e., meeting customers where they are, when they are ready to transact?

Chris Gould, Exelon: We wanted to get to the core of the residential customer. One thing that I found surprising is the notion of control.

There is also the notion of the sharing economy. As it relates to how people think about their energy.

Platforms that are being put in place like Airbnb. A lot of these early adopters of these technologies have a propensity towards that notion of the sharing economy.

Chuck Darville, Southern Company: There's a large demographic of customers who don't behave like many of us at Southern.

We simulated a 'day-in-the-life' of the customer who may not currently look like a typical Southern employee. They wake up and ask Alexa to give me my news. They use Waze to get to work. Then they Facebook and meet somebody. Then they Uber to the restaurant. They pay via Venmo.

If you think about many of us at Southern, many of us would say, I don't get it. I don't use it. Why should I care?

Then we looked at the monthly use of those applications and social media.

We're proud of the nine million customers we have direct contact with. But many of these applications have more customer contacts than we do.

It's only going to get bigger if you look at the demographics. When you look at Waze which has more than 13 million monthly users, or Pandora which has more than 48 million monthly users, it is clear that growth in these areas far exceeds what utilities imagine.

Seventy percent of the energy decisions in the home are made by people less than four feet tall and over sixty-five.

Bert Valdman, Optimum Energy: Look at the visibility that data will give you in terms of tracking trends and seeing things. That's what's really new here.

We now have access to so much more information about what customers do. And we have tools and technologies to identify patterns and trends across different customer groups and geographies.

Sasha Weintraub, Duke Energy: If you go where our customers are, and as you start listening to them, you realize there are different segments that have different wants and needs.

Our demographics are different in Florida than they are in the Carolinas and in the Midwest.

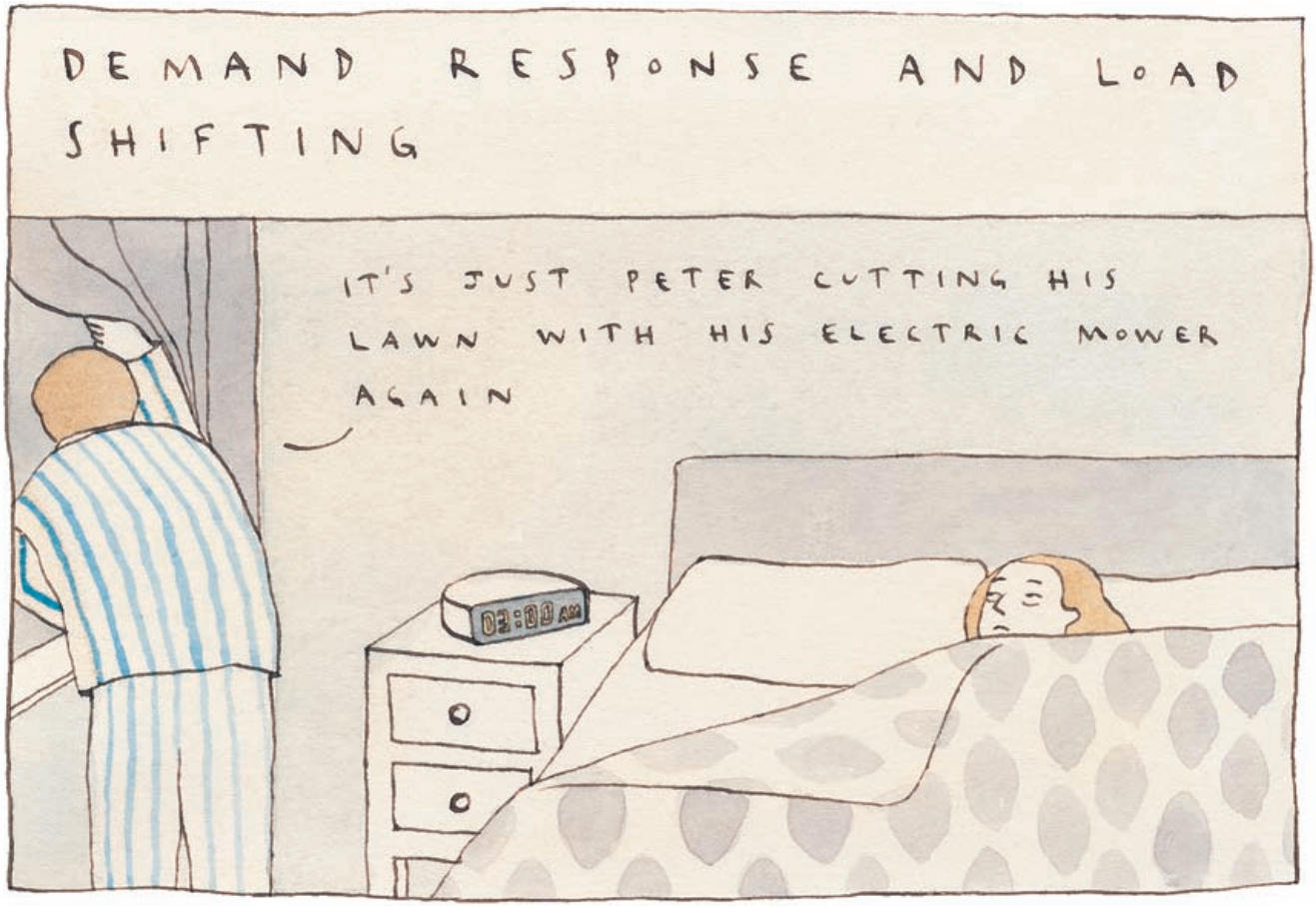
Yet today, bill inserts are still how many of our customers want to receive information from us. That's different than 'push' notifications on an app. It reinforces that every customer is different.

Tom Flaherty: Seventy percent of the energy decisions in the home are made by people less than four feet tall and over sixty-five. And by 2025, seventy-five percent of our customers will be digital natives. How do we anticipate that our customer tomorrow is going to look very different than our customer today?

Sasha Weintraub, Duke Energy: I think the attributes are changing as to how you're able to help out a parent that is trying to be on a budget and control a bill.

How you're going to help that customer is different than other customers. When we talk about innovation and engagement, that's how we understand what the customer pain points are.

Chuck Darville, Southern Company: We had some stats that show over ninety percent of sixty-to-eighty year olds want



Cartoon drawn exclusively for *Public Utilities Fortnightly* by Tim Kirby

to remain in their homes as they age. How do we help people age-in-place?

It's very expensive to take an aging parent and put them in assisted living. Can you divert some of that money for us to provide services?

We provide safety, convenience and comfort, and we know what's going on in the home. We have a connection to nine million homes where they like us and they have faith in us and we have built a solid reputation.

Chris Gould, Exelon: You need to be engaged in customer segmentation in a way that lets you foresee that, and at least keep pace with it, as you go. Make sure you're looking at that customer, at that particular segment, at the millennials, and younger people.

Don Clevenger, Oncor: People want to stay at home, age at home. They are going to have a higher and higher expectation for what they need to depend on. They may have health machines that can never go off.

People get more and more dependent on their electric devices being on. They don't ever want to see a flicker in their lights.

So one of the things we're always looking at is people's views on cost and reliability. But, as much as they want their reliability to be higher, they don't want to pay for it. Over the next decade we're really going to have to figure out, using technology, how to significantly bring down our reliability metrics without significantly increasing costs.

People get more and more dependent on their electric devices being on, and don't ever want to see a flicker in their lights.

Tom Flaherty: What are you doing to facilitate customers making the right kind of economic decisions, in a way that's beneficial to them, but also increases the value to the grid?

Bert Valdman, Optimum Energy: Our business serves commercial and industrial customers who are focused on operational excellence and economic payback.

An important aspect of operational excellence is situational awareness. Gathering data on how mechanical systems operate, analyzing it, and developing better process and practices.

For example, most individuals responsible for managing large, complex HVAC systems are mainly concerned with maintaining building comfort – essentially managing to a temperature of seventy degrees. This is changing.

Low-cost sensors and cloud-enabled software have made it cheap and easy to maintain comfort and operate HVAC systems

efficiently using much less electricity and water. Comfort no longer has to be sacrificed for efficiency.

It's now very easy to capture the top operational metrics that every HVAC manager must manage to and track this across the entire facilities portfolio of an enterprise. Everyone from the CEO to the regional manager to the local facility engineer can quickly monitor performance and trends.

The threshold issue evolved from reliability to cost savings to running your business better.

Tom Flaherty: What did you do to build innovation momentum within your company and move the organization toward a collective purpose?

Chuck Darville, Southern Company: At Southern, we ran an internal challenge.

The executives painted a picture and said, here's what we envision the future to look like. Then they invited the entire employee population to argue with us and refine it. Once that was done, we said, now give us your ideas for what we need to do today to be successful in that future.

We had about fifty percent participation. A vast majority of our folks didn't even have direct internet access, but they found ways to do it. It was a broad competition and we picked six winners.

I'll give our executives a lot of credit, because they set the example for respecting every idea which was great reinforcement for the employees. It was really a wonderful experience for us.

Bert Valdman, Optimum Energy: It starts with the vision at the top. When I worked with Ted Craver at Edison International, he started many an internal presentation by saying: 'The electric utility industry will change more in the next ten years than it has in the past one hundred.' Right after saying that, he would quickly add that we must change as a company to stay relevant to our customers.

Chris Gould, Exelon: We have very similar experiences at Exelon, as you can imagine. We conducted visioning experiences at the top, and engaging people from the bottom up.

You can have both of those and still have challenges in the middle of the organization in terms of how you get it done. A lot of what we put an emphasis on was creating cross-company groups and teams at the middle management level as well.

We have forums where that middle level can help bridge that gap between the CEO, C-suite vision, and the energy that exists in the grass roots as a facilitator and an enabler.

Tom Flaherty: All of what you described gets at the future culture of the organization. How do we shape, build and sustain that culture?

Sasha Weintraub, Duke Energy: Once you have a place for people to go, it's interesting to see the ideas come from all these different directions.

Someone says, 'I have an idea.' But, they don't know what to do with it. They're busy, but they have a place to go and can hand it off now. That's a great first step.

Executive engagement and ground-up engagement are really the key of making sure that everyone is heard with their ideas. We realized early on, we had to emphasize to the managers that they had to allow people to fail.

Don Clevenger, Oncor: We're not an industry that does failure well. We had to talk internally about rewarding failure even if the ideas were flawed. Good ideas that turned out to be not so good were just as valuable as the ideas that turned out to be good.

Only after our employees see that the first goal is innovation, will they feel free to attempt to implement new ideas.

Bert Valdman, Optimum Energy: We created organizational structures where people could actively challenge the status quo. Any type of mechanism that reinforced the dynamic nature of our business as opposed to affirming existing business practices was acknowledged and rewarded.

Tom Flaherty: Let me go to the flip side of momentum. What kind of obstacles did you run into and how did you move them out of the way?

Some utilities have been burned by big investments that didn't deliver.

Chuck Darville, Southern Company: I think one of the bigger challenges to overcome is history. We hear a lot of, 'we tried that ten years ago and it didn't work out.'

The past is the past. Don't be afraid to try again in different circumstances, with different players and different technology. Being able to step up and say we're going to try it again and here's why.

Bert Valdman, Optimum Energy: Once you've established the case for change, then it's time to get organized and mobilize.

First, the challenge is to get people to think beyond the status quo, to adopt new approaches and solutions. People are pretty good at saying: 'But we've always done it this way and it works.'

This is especially the case in the electric utility industry where safety, reliability, and affordability are the 'North Stars,' and staying with known knowns is the most comfortable route. The key is to get people to understand that sticking with the status quo is the riskiest strategy of all in a rapidly changing industry.

Second, it's to look externally for new approaches and solutions, not just internally. To acknowledge that there might be external parties who have figured out better ways of doing things.

Third, it's to develop the skills and experience to collaborate and build coalitions with outside parties, to be good partners.

Tom Flaherty: What have you learned from talking to other kinds of competitive companies to create a different lens to look through for innovation?

Chris Gould, Exelon: This notion of the external engagement addresses the ecosystem that's been developed. We engage

with places that do that, bringing them in to show the 'art of the possible.'

We've joined places like the MIT Energy Initiative, Northwestern, Argonne Labs. That's where the bulk of the technology innovation is taking place.

There are companies out there we were talking about that focus more on business model innovation, and we're engaged with them as well.

Sasha Weintraub, Duke Energy: I have a link to a video on my favorites. It's the Apple Think Differently video. It talks about, 'here's to the crazy ones, the ones who think.' It finishes by saying, 'the ones who think they're crazy enough to change the world, just might be.'

The story of that is to spend time with people who think that they can make that big of a difference. We interact a lot with labs in universities and have relationships with places like CLT Joules in Charlotte where they're really trying to bring an entrepreneurial spirit and change to our industry.

I think it's healthy to have those relationships to break down the status quo, to challenge it. Because there are people out there who think that they can change the world.

Bert Valdman, Optimum Energy: When you run a competitive business, you have to make it easy for customers to buy your product.

Look how easy it is to buy things on Amazon. One click. How to work with a utility as an outside party isn't obvious, and it sure isn't easy.

I never appreciated this as much as over the last eighteen months, now that I'm operating outside of the utility. I'm getting many calls from emerging company peers asking for help on matters that range from titles and roles within an electric utility, to how the business model works, to why there isn't a greater push to deploy new technologies.

To me, all this is intuitive because I've lived in this industry for so long. But for anyone not steeped in the industry, electric utilities are a riddle shrouded in a mystery.

Chuck Darville, Southern Company: We thought we were collaborative because we got a whole bunch of people like us together and talked about it. What we found is collaboration without diversity is really not collaboration.

If you get people who are unencumbered by a hundred years of inertia, they may not understand 'why' things are like they are, and that may be tremendously valuable.

Don Clevenger, Oncor: One of the things we were pushed into by our CEO to avoid, was death by a thousand pilots. Our commission at the time was really struggling with high gas prices and high rates. They wanted more tools for the consumer.

They thought smart meters were going to be able to give them that type of tool.

Other utilities were talking about doing advanced meter pilots. Our CEO said, 'we're not going to do pilots. We're going to do what the state wants, and install 3.2 million meters over the next five years.'

We got them installed in five years, and had to do some software upgrades along the way. It was a great lesson in just how to get a major change done, like that, without doing ten years of pilots.

We learned some pretty good lessons from that about innovation. The primary lesson being that when the money is there, the functionality will come.

Now we are looking for other applications that currently don't have the needed functionality. If we can show the vendor we will spend the money, we believe good vendors will develop the functionality.

Bert Valdman, Optimum Energy: For an emerging competitive company promoting new technology and selling into the utility sector, it all starts with a pilot, and often ends with a pilot, because death by a thousand pilots is real. Think about how long it takes to work through a utility's organization to find the right sponsors for the pilot, convince them of the merits of the pilot, then scope the pilot, then run the competitive gauntlet to get selected to participate in the pilot, then document the pilot and, then convince regulators of the merits of the pilot. It takes years, not months.

We don't say that's where innovation happens, because innovation happens everywhere.

As a small emerging company, you're burning cash every single month funding that pilot, waiting and hoping that the outcome is a system-wide deployment.

There are hundreds of small businesses that have really interesting technologies and solutions. They just want one thing from a utility. Buy at scale and help me help you run a better electric system. Partner with me. Collaborate with me. Take risks with me.

There are a number of utilities now that are providing equity support. That's a good first step. But simply funding one or two equity rounds is not enough. Utilities and utility-backed venture funds must be ready to hang in there for the duration. And for technologies that have promise, utilities must be prepared to take more risk and more aggressively support achieving scale.

Don Clevenger, Oncor: That is a systemic problem with the industry. It's not going away soon with the regulatory mechanisms in place.

Some utilities have been burned by big investments that didn't deliver. Therefore, we have to be careful to make prudent investments in proven technologies with vendors that can stand behind the product and make them work.

It's really easy to sit here and talk about the successes. But if

you've gone through one of those failures, and had to deal with the topic at the board meeting after that, you're not in a hurry to do that again. That's always going to be a risk that utilities have to deal with.

Tom Flaherty: What would you tell your peers in the industry about what works and what doesn't that would help other companies get to where you are now?

Sasha Weintraub, Duke Energy: We're talking a lot about failing fast, but challenging the status quo. Having some history of quick wins is helpful.

It's important that people who do this full-time know how to do it. Recognizing that certain skill sets are important to bring in and then also to disperse. It's great to have that talent then spread throughout the company.

Don Clevenger, Oncor: When we provide a platform, we are more successful than when we try and provide a solution. The market is almost invariably going to be better at picking out the solutions. If we provide the platform it seems to work out best for us.

Bert Valdman, Optimum Energy: It's also about focus. Pick a business area where you really want to make a difference. Once you've picked this area, go deep, go external, canvass everyone, whether it's think tanks, academic institutions, or emerging companies.

It's very difficult to do that if you're spread across too many areas. You can be much more effective if you're focused.

Chuck Darville, Southern Company: For us, again, it came back to collaboration works. We were clear when we set up our innovation center.

We don't say that's where innovation happens, because innovation happens everywhere.

Make sure that when you set a center like this up, people still feel accountable even if they are not in that group for carrying the ball forward. We're accountable for innovation, but we need to make sure it happens everywhere and everybody's accountable. That's a really important message for us.

Tom Flaherty: How do we define commercialization in the future time horizon in a meaningful way? Is it within two years like industrial and consumer companies or a longer time horizon?

Chris Gould, Exelon: We have a partnership with Bloom Energy. They evolved the business model to a PPA or lease model versus capital investment. That made the technology more economic for some segment of the customer base.

Nobody was asking us for a fuel cell because we didn't sell them. But, that relationship led to a co-marketing agreement. Almost real time, we were able to do that.

Digital is another example. We believe that development of a new technology and making new markets is really where you need to be. You want to help a customer facing digital technology choices that could be deployed quickly.

Technology will be the critical differentiator going forward.

We are emphasizing taking a leadership position in making markets and being on a longer time horizon. We are looking to create a more traditional product development cycle.

How a utility does that may be through partnerships.

If you're going to play the role of a short-term deployer forever, you're never going to be in the position that you want. You need to have a mindset that's longer-term.

You need to be able and willing to invest the resources to figure out that market. And then develop the right product to take into it.

That's something relatively new for our industry, but it's not at all new in the product development world.

Don Clevenger, Oncor: It about whether you want to be the market-maker, or whether you want to be the platform.

Airbnb has no interest in building condos and houses. If your base business is the regulated business, and that doesn't allow for a lot of mistakes, then you don't want to be out there selling the fax machine.

Companies are going to attack this from different areas. We want to be that platform. We have to be on top of what needs to 'plug and play' into our platform.

We must be risk takers – a coalition of risk takers.

We're not going to try and pick the winners and losers. We're going to be the Uber. We don't care what the guy drives or where you want to go. We're just going to have the platform that allows it all to connect.

Sasha Weintraub, Duke Energy: Don, is the desire to be the platform driven by the market structure in Texas? Would it be different if you're an integrated utility?

Don Clevenger, Oncor: That's still a debate in the whole industry. And it creates a different risk profile and business model. The ones that really make the long-term money are the platforms.

Apple figured this out. They're trying to sell computers, but we can have iTunes.

The platform is really where most people win. But it's a longer term play.

Bert Valdman, Optimum Energy: Don, you touched on it. To launch the platform and then commercialize the platform, we must decide as an industry what relationship we want to have with risk.

As an industry, we celebrate practicality. But, it's not good enough to be practical, we must be pioneering.

As an industry, we also celebrate being great resource managers. But, it's not enough to be a good resource manager, we must be resourceful.

And as an industry we celebrate being effective risk managers. We must be risk takers – a coalition of risk takers.

Until you've resolved what that risk relationship is, it's going to be very difficult to commercialize a platform.

What are shareholder expectations? How are these expectations managed so shareholders are willing to accept greater risk? With that greater risk comes a much different growth profile. How has the industry executed on this in the past?

The industry's track record hasn't been great. How do you convince shareholders that you've acknowledged and assimilated mistakes of the past and that it will be different this time?

Don Clevenger, Oncor: We need relationships with vendors that have done the R&D work. If we are going to avoid pilots and deploy prudent technology, then we need vendors that will stand behind their products and make sure they work as promised.

Bert Valdman, Optimum Energy: You may take out so much electric load because you're managing buildings and homes more efficiently that, when you install a battery system on a circuit to balance load, the circuit has too much capacity and you've over-invested.

Chris Gould, Exelon: I agree. You need perspective. We have such a balance of companies.

The commercial Constellation brand is out there directly competing in the market. Constellation has those same discussions about the utilities being the platform.

Energy companies are starting to create those unregulated affiliates in ways that are different than in the past. It's not the traditional merchant model.

That type affiliate came out of the deregulation space. More products and services can compete from that platform out. I know Edison's done that. Constellation's done that.

Sasha Weintraub, Duke Energy: In the late nineties, early 2000s, the internet was just being built out. The value was thought to be in the infrastructure. Cisco, Juniper Networks, Nortel, were there and doing the hard work. Still, a tremendous amount of intellectual knowledge was needed to make everything work.

That's not necessarily where it turned out that the value creation lies. It's on the content side that uses the infrastructure. Like Netflix, Amazon and so on. Where's the challenge of the business opportunity given the risk profile? Being an infrastructure company is very different than being the content provider.

I'm not sure what the analogy is there. The story may be a parallel with the telecommunications industry – where it was infrastructure versus content.

The platform is a great example. Do we want to be the platform that allows 'plug and play?' Do we want to be the vertically-integrated solution for customers? We'll see how it all plays out. PUF

The next installment of the Innovation Roundtable will focus on how these companies framed their innovation responses, and leaned on partners to accelerate their efforts. It will also address how these companies are approaching building a culture of innovation.

Utility Execs' Roundtable

The Power of Innovation

PART II

We sat down with five utility execs who lead their companies on innovation

Last month's Innovation Roundtable collaboration between Strategy& and Public Utilities Fortnightly focused on how executives at five leading companies began the stand-up and execution of their innovation programs.

High expectations for innovation exist across all the companies, even though the path to ultimate program success is still to be fully designed. In only a short time, what originally defined success is continually evolving to match the requirements for market positioning.

The executives now recognize that several challenges to innovation success exist related to the role played by the utility and the time-to-market. Also important is the relationship companies want to have with risk. And, these leaders know they have to drive innovation beyond being just a concept to becoming part of their companies' DNA. And developing new business models that they have never considered.

Industrial companies focus on getting to market fast and think in one- or two- year windows. But the utilities industry never had to think about time-to-market and currently tends to consider a three-year plus window comfortable.

Markets move at speeds very different than companies, particularly regulated utilities. If pent-up demand is not met by utilities, someone else will step in to do exactly that. If future customer needs are not defined to enable fulfilling those needs, it will be too late to address the market at a future time.

The key is to connect ideation directly to commercialization. It is far more valuable to turn good ideas into value than to generate a multitude of ideas that do not hold commercial promise or cannot be successfully executed.

These utilities have pursued partnering in many forms: for investment; for expertise; for collaboration, and for big ideas. Partnering has not historically been a characteristic of the utilities industry. Too often partnerships have failed to benefit either party or create any market distinction due to misconstrued purpose and inconsistent motivations.

Successful partnering depends on enterprise and individual chemistry, as well as a shared commitment to what really matters: making customers better off. It is hard for partnerships to stand the test of time. It's still harder for these relationships to weather market adversity or unrealized expectations.

This is particularly true with respect to de-risking utilities' market bets through relationships with savvy financial investors such as venture capitalists. Through those relationships, these utilities are leveraging broad market awareness, risk syndication and capital sourcing strategies that increase the likelihood of successfully taking a new technology into the market.

Even as companies are only beginning to progress through their innovation life cycle, they are already looking ahead. They want to embed a culture of innovation, where the DNA of the business reflects the challenge of advancing the business.

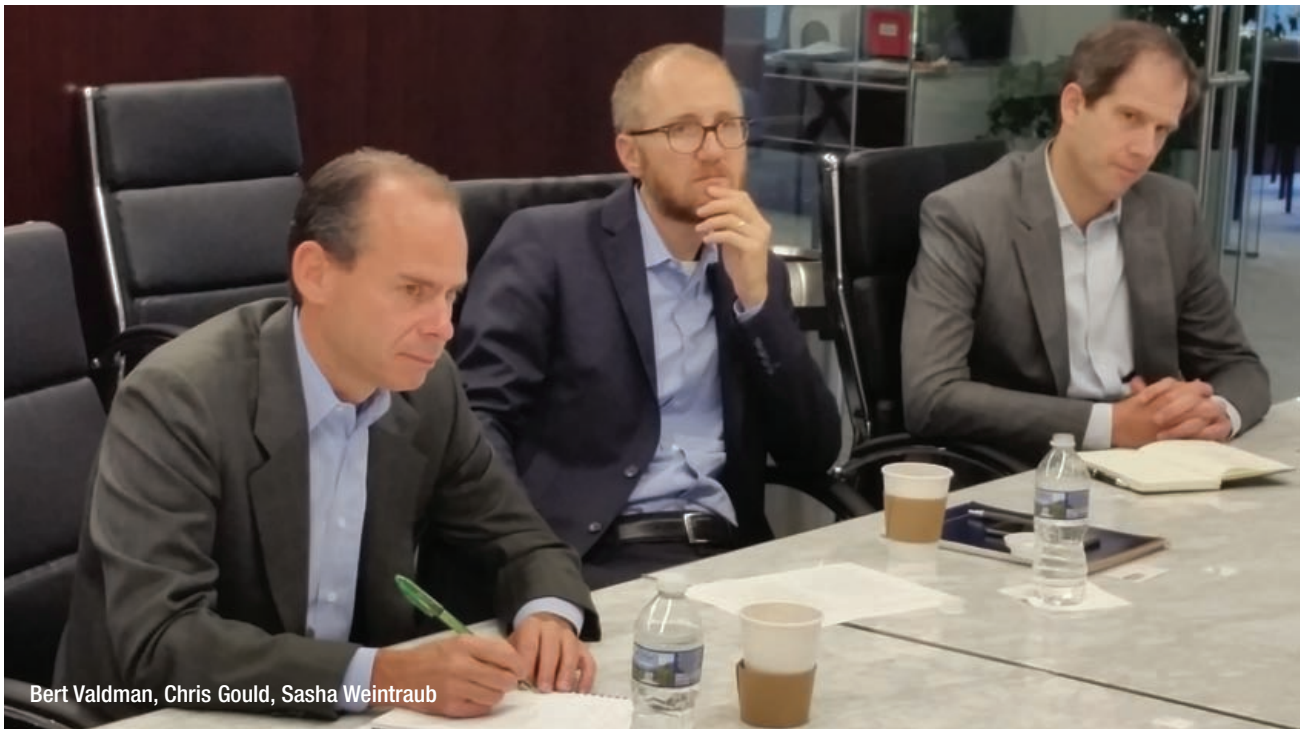
Quick, targeted commercialization is the lifeblood of competitive companies, but not of a utility.

The executives fully expect that pursuing a market future built on a foundation of innovation and a focus on commercialization will have wide-ranging impacts. Conventional wisdom suggests that the business model will fundamentally change, and it will. But that is not the end of the story. Some elements will stay the same, some components will change and some new dimensions will be added.

Migrating from a model that emphasized investment to generate earnings to a model that focuses on product and service volume to produce margins is a fundamental shift. But the challenge these executives acknowledge is learning how to blend several unique business models as the scope of their business expands.

These executives paint an optimistic picture of how the future may unfold, though it is not without its challenges and risks. Moreover, they understand that the competencies their companies will need have yet to be fully developed. But they are enthusiastically up for the challenge.

– ***Tom Flaherty, Partner, Strategy&***


Bert Valdman, Chris Gould, Sasha Weintraub

Tom Flaherty: Let's continue, on the time horizon for commercialization. Is the industry thinking rapidly enough in terms of being able to commercialize products or services and take advantage of emerging opportunity?

Bert Valdman, Optimum Energy: It's interesting to ask the 'why'. Why are commercial companies able to launch their solutions so quickly? Why aren't utilities thinking this way?

Part of the why is the mindset of commercial companies. If a product or solution isn't commercialized quickly somebody else may do it. It becomes a lost opportunity. That mindset is absent at the utility.

Quick, targeted commercialization is the lifeblood of competitive companies.

But it's not the lifeblood of a utility.

It's very difficult to commercialize a product or solution in two years if you're trying to figure out what your strategy is to manage risk. That will take much more time. You've got to be able to get yourself in a spot where you're willing to commercialize things quickly without layers and layers of process and expense. That's a big step for many utilities.

Don Clevenger, Oncor: I'm putting transmission lines in the ground today that I expect to be here in 2066. I'm depreciating them over fifty years.

Most of my investors would not even understand a two-year asset or two-year commercialization period. It's incredibly difficult to get our heads around that.

Think about all the work that goes into that. Why did people pick Blu-Ray over HD? They were the exact same. Much of it is just luck.

I wonder why as an industry we're not more active in making electric transportation happen.

That's just not the investment profile that most of us have lived in.

Chris Gould, Exelon: We're going to continue to see regulated utilities stand-up competitive sides of their company and leverage that experience with skill sets out of the utilities. Combine other acquisitions that help them attack the market outside of the service territory and you can scale that.

Leverage what your brand recognition is. That's a potential model evolving.

Bert Valdman, Optimum Energy: It's remarkable when you are a company burning cash every month how that drives focus.

You don't have the luxury to boil the ocean and consider all options. You don't have the luxury of deliberating.

You've got to balance intuition with hard analysis and act quickly. Which customers you go after. What markets you go after. How you make a profit. How you manage through the unexpected negative surprises. It changes your mindset.

It's very difficult to successfully commercialize something if you don't have that mindset. Some utilities are trying to create that mindset, but it's difficult to do when you're coming from a position of incumbency, where customers are captive.

Tom Flaherty: How does the industry move toward commercialization when it has so many options in front of it? Is it a matter of focus and differentiation?

Chuck Darville, Southern Company: We do exactly what you imply. We make small bets.

You mentioned the skill set that you have. There's certain skill sets either we have or we go and buy, such as PowerSecure. With them, we can go to market and start commercializing.

We have Pivotal Home Solutions, which is a home solutions company that came with AGL Resources. We may also have interests in other areas where we may not have the skill set. We either buy them, or what else would you do?

Electric transportation is one that is really puzzling. I wonder why as an industry we're not more active in making electric transportation happen. Because it's to all of our benefits.

We struggle with our role. Is it infrastructure? It's the classic chicken and egg situation. There aren't enough cars. You need more cars before you get infrastructure.

We're trying to figure out how we get in there. Do we start finding homes for second owners of electric cars that are coming off lease right now?

To things further afield like aging in place, that'll take us a longer time. We need to find the right partner to help us figure how we might commercialize something like that.

That is not something that would be difficult to accommodate and get something in the market within two years.

Chris Gould, Exelon: Chuck, are you thinking about that market participation nationally? Or are the things you're thinking about just in your footprint?

Chuck Darville, Southern Company: I'm trying to get my mind around why utilities nationally are not much more active around ensuring electric transportation takes off.

Sasha Weintraub, Duke Energy: It's not the shiny object that we're all chasing with technology sometimes. There are customers that are not going to be anywhere near a charging station anytime soon for an electric vehicle.

Just less than fifty percent of our customers have average household incomes of less than fifty thousand dollars. Many of them live in mobile homes or apartments.

How do you provide value to customers who are not focusing on what their utility is doing?

We have many mobile homes in the mountains that are a mile into the woods with feeders. No one would want to serve them if they were doing it for economics. We proudly do it because of our franchise and who we are.

How can you provide products and services to that customer?

It's providing products around bill certainty. It's providing products around the ability to save money. Every bit of it helps them have a better life. It's just a different perspective many times, versus those held internally.

Tom Flaherty: Is that your segmentation challenge, to find the right bundle of individual products to fit the right person?

Sasha Weintraub, Duke Energy: There's value in terms of some of the basic things we talked about. It's not just about the technology that's evolving at a really fast pace. For example, how you help customers with weatherization is not wholly about technology.

Bert Valdman, Optimum Energy: What you just said is such an important reminder. We can't forget the roots of our industry and why electric system costs were socialized in the first place. We had to serve everyone.

There's this mindset of trying to build competitive businesses, and that often means providing service to some at the exclusion of others. It's not in the DNA of our industry. It's a great reminder.

Tom Flaherty: Capitalizing on market opportunity may mean that the industry may need to rely on others as partners. How are you thinking about partnering now since the industry has not been very good it in the past?

Bert Valdman, Optimum Energy: We've done a lot of thinking about this, and we're applying it to our business.

We can't forget the roots of our industry, why electric system costs were socialized in the first place.

First, we make it very easy to transact. We built a flexible, open system that integrates with any technology. We work hard to eliminate every possible barrier you're likely to encounter to work with us.

Second, full transparency. Anything you want to know about our business and solutions is posted on our website. Our strategy is not to win by being shrouded in complexity and mystery, but instead by being one or two steps ahead of everyone else and capturing the next level of innovation.

Third, engage as much as possible. You have to be in people's faces. The more actively we engage with customers, the sooner we'll figure out a solution for them.

Chris Gould, Exelon: Our partnerships again. I think about them across the value chain at the technology or business readiness levels.

All the way from basic R&D and labs and through ventures, companies and existing technology.

The way that the partnership model worked in some of those instances historically has been very much, "Here's a specific problem, give me the solution. We're done."

We want to be transactive, but very well defined. What we're trying to evolve to is more of a forum for the generation of big ideas.

The product comes after the thinking around the meeting of the minds. What is the biggest challenge to work on? Is it technically or otherwise possible?

There's a lot of upfront ideation and investigation in the actual

formulation of the product statement. And in the initial scoping of what you're going to go look at.

We're not coming in with a defined problem. We're coming in with concepts around where we think there are opportunities. We know we don't have all the skill sets to be able to solve that by ourselves. What do you think the challenges are? And where do we converge on a set of focus-areas that are the most meaningful?

You start the collaboration at the beginning. Not, once we've thought about what the problem is, and now we just need you to help solve it for us.

Sasha Weintraub, Duke Energy: Partnerships is a tough word. We tend to do it via an RFP and our partners tend to last only until the next RFP, which is not very helpful.

It's a challenge though. The low-cost prudence test that we have to demonstrate is sometimes challenged when you have a partnership.

We've all probably had that in our history, that is, a partnership that we get blamed for not going well. I even hear things back to when utilities owned coal mines in partnerships; that didn't go well.

The challenge is how do you have a partnership with someone if you're still trying to prove prudency and trying to show you're cost effective?

If you're in the unregulated space, that's a much different relationship that you can have with partners.

It's important to have partners and you can have multiple partners because that allows you to go much farther upstream.

That circumstance allows for much different development and learning cycles versus the partnership is only good until the next RFP.

Chris Gould, Exelon: That's what I meant about being transactive. We don't look at them as one-off problems. We think about what the big ideas are. It's a longer-term relationship.

Sasha Weintraub, Duke Energy: It's tough to turn a vendor into a partner. Because other vendors are saying, "Well, what about me?"

Chuck Darville, Southern Company: For us, it's either we have shared goals, or there's complementarity of skills. We're practicing a little bit. There are a few partners where we thought we were completely aligned, but there just wasn't that chemistry.

We say, there's nothing more important than the customer and these partners often say the same thing. But, when we look at their day-to-day actions, they can appear inconsistent with our objectives, given their high focus on commercialization.

Our culture is so deep. We truly are paternalistic about our customers. We do want what is best for our customers.

We've started making a distinction regarding whether these potential partners would be supportive or simply parasitic. We've been asking ourselves whether these companies can be fully supportive of what we're trying to do for the long-term.

We're practicing, we're learning. Because we are engaging with a lot of different companies.

We have access to about nine million homes and even more decision-makers. And they like us. Which is appealing to a lot of other companies trying to sell products.

We need to make sure we're aligned as far as our values. How we work, and how we behave. That's what we're practicing.

Don Clevenger, Oncor: We're looking for building a relationship because that's how the R& D has been done.

We're going to buy the product. We're going to expect the vendor to make it work.

We've done that in a real successful way with the micro-grid we put in on one of our new facilities we've built.

We went to a couple of magnetic battery manufacturers and said, "Okay, we like what you provide. We're going to buy it. But you're going to put in the sweat equity and make sure it all works.

In one case, it didn't. We had to switch.

In some cases, it was learning for them as much as for us. What they promised in the lab, didn't perform. That's going to happen when we're talking about these new products and new innovations.

What we're trying to evolve to is more of a forum for the generation of big ideas.

We're going to have a relationship where we're going to buy a lot of product. You are going to have to stay around and tweak it until it works. Because it's not going to work the same in the field.

Bert Valdman, Optimum Energy: Earlier we talked about challenging the status quo. That's important. Getting to the status quo was hard won because it was about trust. When a customer trusts, the regulator trusts. That's why maintaining the status quo is so highly prized. It takes so much to earn that trust every day, and it's so easy to lose that trust. Once you've lost it, it's takes a long time to get it back.

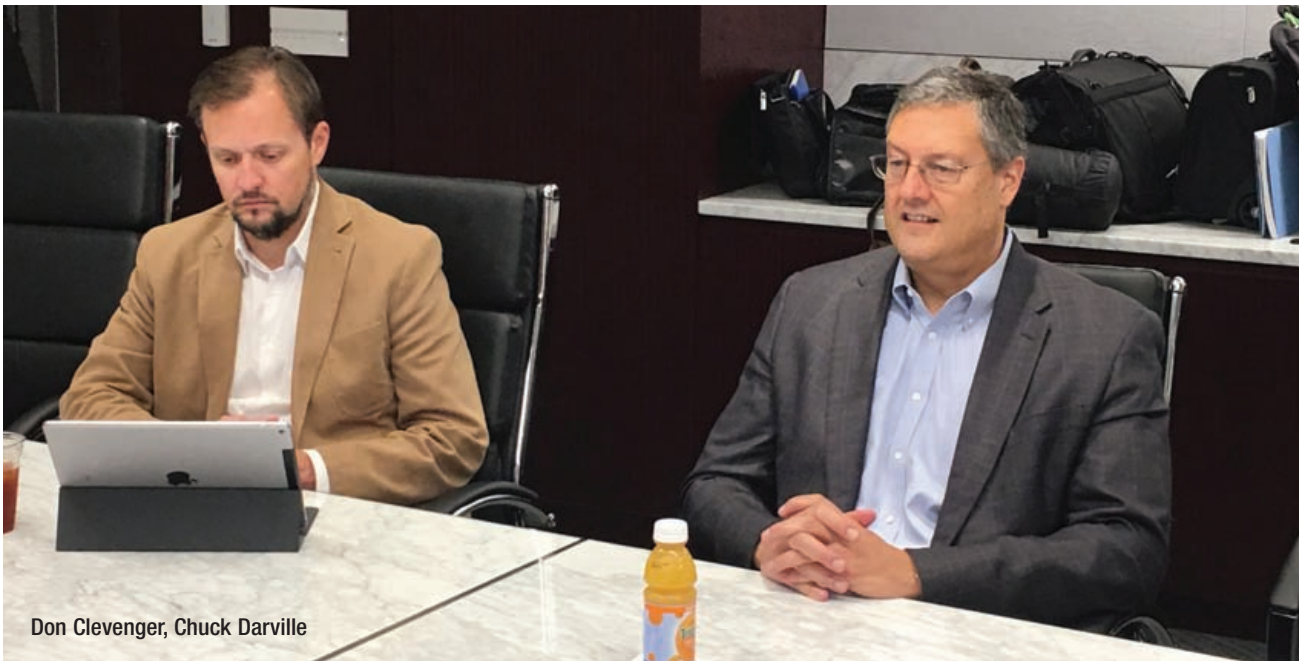
All the things that we're talking about might change that relationship of trust.

That's the conflict that the industry is now trying to resolve. How to find the right balance.

Tom Flaherty: Have you utilized a co-investor as a partner type to accelerate development or share risk?

Chris Gould, Exelon: We have two examples of that along the continuum of technology readiness. One is an internal VC group, Constellation Technology Ventures. And one is the partnership R&D model that we're standing up. We've taken two different approaches there, for the following reason.

From our perspective, we're not going to attempt to replicate a physical lab and capabilities that have been developed in institutions over time specifically for R&D. The best model there is to partner.


Don Clevenger, Chuck Darville

When I speak of things like MIT or Northwestern or Argonne Labs, we are in consortiums in those relationships, with other companies.

We are trying to think and generate new, big ideas where it's very valuable to get in front of the curve. To try and make a market out of a new development as opposed to a deployment.

In the venture space, that's not the case because you are making equity investments in a company. That's not beyond the realm of thinking for an energy company to do. A small staff of people can do that, and tailor those investments to what you think is uniquely deployable in your business.

We have a different business mix at Exelon than do the other companies here. Everybody has a different set of needs.

It's been more about what is reasonable for us to do internally, versus where do we get the most bang for the buck from external collaboration. That's where it's landed for us, in terms of where our business mix sits today.

Bert Valdman, Optimum Energy: You started out by mentioning financial partners. If you think about it, why would a well-capitalized utility need or want a financial partner? The reason? Discipline. Sense of urgency. The financial partner assures that the focus remains on achieving a risk-adjusted return on capital.

Financial partners bring a sense of urgency to achieve commercialization.

Sasha Weintraub, Duke Energy: Some of our partnerships too have evolved. I'm thinking about hardware, where we have a form of partnership we call the coalition of the willing. This relationship is built around interoperability of different standards, to have different technologies talk to each other and around micro-grids.

How do you get different companies and kinds of companies together that all want to talk? Because they all know if they can work together and provide a solution, there's a business opportunity for the masses.

We have a technology group that's been around for many years, and it looks around the corner.

Sometimes though, the partnerships that you are referring to are just one company trying to figure out a partner to, like you said, multiply. I think that's something that we're all working to do more of versus what historically has been done. That is, an industry type of partnership and not a partnership put in place just for us as a company to advance.

Chuck Darville, Southern Company: We have an exceptional R&D group that truly understands a lot about a lot of technologies. They know what will work and they know how to make things work better. They do not focus on commercial viability of products and how we may be able to commercialize an offering.

Our R&D has traditionally been around generation first, and then T&D. Now their focus is going down that value chain, closer to the customer.

They're tremendous assets for us, tremendous resources. But when we think how do we commercialize? That's not something that they focused on. So we went with an external venture capital group, where we ask them to help us uncover some technologies that may really make a difference in the future.

If we make money, that's great. But understanding and helping us see what's around the corner is as important.

I've personally been in awe at how quickly they're able to sift through deals and separate the wheat from the chaff.

Sasha Weintraub, Duke Energy: We have a technology group that's been around for many years and looks around the corner. It's nice to have many eyes trying to understand five years out what's coming at us that could make a difference.

The challenge of what's around the corner is more than just the traditional infrastructure. That's where it's new and exciting, which is also why it's fun.

It's also a challenge for that group because there are smaller things coming. We used to watch for the big things that might impact the larger pieces of our components. Now there's a lot of little things that can make a big difference.

Chuck Darville, Southern Company: They're in a great position to see where the money is going, much better position than we are.

Bert Valdman, Optimum Energy: Chuck, regarding the portfolio companies of this entity that you are co-investing in, along with some of your peers. Do those companies have an advantage in commercializing their technology with you, or with your other utility partners? I suspect that's their belief.

Chuck Darville, Southern Company: That's right.

Bert Valdman, Optimum Energy: They will get access to your customers and that will allow acceleration of commercialization. Between the belief and the reality, I think that's where there's some uncertainty.

Don Clevenger, Oncor: There's going to be some regulatory hurdles there too for that.

Chris Gould, Exelon: In our venture group, we do that. It's geared very much towards the commercial side of the business. That group is call Constellation Technology Ventures. It sits in Constellation. The investments that it makes are designed and tailored to the needs of that group. And yes, you would put them on a path.

Bert Valdman, Optimum Energy: I'll challenge this group a little bit. Make the first investment, that's great. To then try and figure out how to make these companies successful and scale quickly, that's harder.

It's not the first investment that matters. It's the ability to follow through and ride through the valleys. As somebody who now is looking to find capital, that's where I'm of two minds.

Will capital be there when I need it? Will I get that much of an advantage from an equity investor linked to a utility? Is that really a benefit, or should I go with somebody else who's in a competitive business? Because if the technology is viable and commercial in a relatively short period of time, I have a choice.

I'm not so sure, based on what I know, that I would want a utility partner. It would be great if it worked. But right now, candidly, I'm tempted to go somewhere else.

Tom Flaherty: Will partnering be a table stake or so episodic that you won't need to treat it as a competence that you must have?

Chris Gould, Exelon: The former. The pace of change and the nature of it being outside of what we've been traditionally thought of, requires a partnership competency.

Sasha Weintraub, Duke Energy: It requires a competency around partnerships. The challenge will be are there multiple partners? And what is the nature of a relationship with a partner?

I think about our generation fleet where we have multiple manufacturers. We're not like Southwest where you have just the 737 as a common model.

When I think about a partnership in this space, it's a relationship with the key players, and it's okay to have multiple partners. We need to evolve to being less transactional and more strategic. That's just something that will evolve with where we're going, and the business models that develop.

Tom Flaherty. How do we build a culture of innovation within the DNA of the enterprise that's sustainable and fully engaging?

Chris Gould, Exelon: We've tried to blend what we do well with what's new. We have a focus specifically around a culture of innovation. Aside from technology and business models, the very objective of creating the culture of innovation is, in and of itself, a stand-alone objective. That's one answer to how you do that.

It's how we react to the market forces like distributed generation that are going to evolve and change.

Then, what we've taken from what the company is good at. We try to take what might be a challenge and turn it into an opportunity for us. The DNA of the company emphasizes holding ourselves accountable to metrics and benchmarking and tracking our progress.

Take that energy that exists and shift the mindset into a culture of innovation.

Don't shift the vehicle with which you do it, use a common vehicle.

Create some metrics around how you're doing. How many ideas are we getting? How many of them are moving to commercialization? How have we rewarded employees? Are we actually doing that, or just saying we're doing it?

You can quantify and keep track of the advantage of being well trained and it being a part of our DNA.

Once we get going on tracking metrics, that's how you institutionalize something.

We try to take something we're familiar with. Put it with something that we're trying to do new. Not change both.

We need to change the culture. We need to find a new way to change the culture. We need to use something common to be the vehicle for that future.

Sasha Weintraub, Duke Energy: There's a saying I like to use. "What my boss finds interesting, I find fascinating." We all have leaders of our respective organizations that are finding this topic

to be very interesting. That's how it becomes part of the culture.

There's pockets of it now, though maybe in some organizations it's much more pervasive.

It's becoming important in that culture of innovation. Everything we talked about: taking risks, failing fast, that's going to be what the leaders of all of our organizations are looking to build, foster and encourage.

Every company here is in a little different spot. But all of us have leaders that are saying, "This is where we need to go."

Don Clevenger, Oncor: One of the things this industry does really well is train. We may be the last industry in the world that does a really good job of training its employees.

There is a class that we have for every employee on innovation.

The group that leads the class has really gotten into it. They've designed a car wash simulation that teaches in a very simple way how processes can be streamlined. They then empower the employees to apply the same principles to their jobs.

These are things you don't see. But it is what binds our folks together. They own it.

You could see that type of ownership coming out of them as they teach it. They've gone around the whole system teaching it. Now we're going to follow up with our performance metrics and reward it.

We've started that in a soft way through encouraging managers to include innovation as part of their individual modules that employees get. The next step is to make it the permanent metrics that people's bonuses are based off of. That's something the industry does well.

We've just got to make it part of that DNA, like you said.

Chuck Darville, Southern Company: Executive leadership sets the tone. We've been very lucky in that regard. For the ideas that have been submitted by the employees, the ones where you start to see some real results, we share that with the entire enterprise. And we say, "Remember when we did this? Here is where we are on these items." That goes a long way. It reinforces it beautifully.

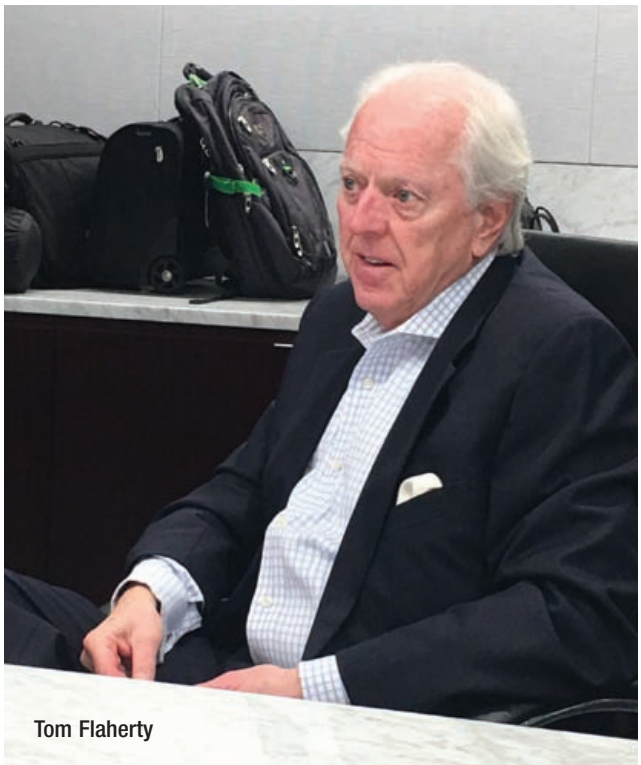
Bert Valdman, Optimum Energy: It's hard not to be reminded of my favorite Thomas Edison quote as we sit around this table at EEI, which is, "There's a better way to do it, find it." It's really that spirit of inquiry that launched this industry and what will keep this industry relevant in the future.

It's important to stay restless as leaders and avoid complacency.

We must constantly figure out new roles, new ways of doing things. Offer learning opportunities to top talent. Rotate people around the organization. This gives them perspective. It keeps them humble and hungry.

Sometimes I worry that the utility industry isn't hungry or humble enough. That's when mistakes are made.

Tom Flaherty: Provide your perspective on how you think the business model shifts to be able to incorporate what we're going to accomplish through innovation.



Tom Flaherty

What does innovation 2.0 look like and how different is it from today?

Sasha Weintraub, Duke Energy: That's the outstanding question. What is the business model? Traditionally, we've been in a business model based on return on capital and heavy capital investment. Now we're talking about things that are different.

For example, cloud-based versus on-premise? What's O&M versus capital? Rate of return versus regulatory lag? That's the challenge that this industry's wrestling with.

How do we turn that business model around? Well, you can use riders and you can decouple revenues. There are alternatives that get us from one business model to another.

Chuck Darville, Southern Company: For us, we're trying to figure it out now.

If you're in our territory and our traditional business, it's easy. We know how to do that. If it's a new business outside of our territory, I'm not saying it's easy to execute, but from a business model perspective, that's easier.

As you start looking at these new businesses in our territory, that's the one where we're really trying to figure it out.

Don Clevenger, Oncor: I don't think the business model changes. It's how we innovate and react to the market forces like distributed generation that are going to evolve and change.

Sasha Weintraub, Duke Energy: Well said. Sometimes we get accounting rules caught up in the business model, the DNA.

Sometimes, there might be some accounting rules that need to

evolve as we're talking about cloud-based versus capital. Certainly, there's some evolution there to acknowledge. The business model might very well be familiar to what it has been for many years.

Bert Valdman, Optimum Energy: Our business will change. In fact, it's changing right now if you boil it down to its essence.

Today, capital is sourced at a low cost and that capital is invested in long-dated infrastructure earning a near-certain margin based on a regulated return.

The depreciation cycle will change as the business becomes more technology-heavy and service-oriented. There will be more uncertainty and risk, particularly as it relates to obsolescence and economic recovery. That old capital model will no longer hold true. There will have to be a different way to get a return on capital or a different type of investment model.

There will be a greater level of margin volatility, very similar to what financial institutions experienced. Price discovery in a global marketplace tightened spreads and banks had to find new ways to make money, taking more risk, adding higher levels of service.

Tom Flaherty: Since some of you operate in a fully competitive market, and others operate in very different global geographic markets, how do you think about the nature of the business model evolution you have to go through?

Bert Valdman, Optimum Energy: It's interesting to compare the North American market with global opportunities as it relates to prospects for success. The North American market is a very local market. And I don't just mean local by region, I mean local by individual facility. Building scale in this environment is tough for competitive businesses. It takes time and resources.

At Optimum, we have customers in the Middle East and in Asia. Our experience is that decision-making is more centralized. We know exactly who the decisions makers are. It's a lot easier for an emerging company to scale in that environment, where it's a centralized decision and especially if there is supportive public policy.

For example, Singapore has a kilowatt per ton metric, and every building's HVAC system must be in compliance by a time certain. You know exactly what you are solving for and who is accountable. It takes fewer resources to get a bigger result.

If you're a small business with limited resources of people and capital, and trying to figure out where to focus, you're going to zoom in on markets where there are clear success metrics and where there is a clear decision-making hierarchy. Right now, that doesn't exist in North America.

Tom Flaherty: Let's fast forward and take a five-year-out and beyond view. What does innovation 2.0 look like and how different is it from today?

Chuck Darville, Southern Company: For us, it's probably still somewhat formulaic. If you ever read the book How Google Works, there's an excerpt in there about Larry Page. Frustrated one day about a particular search, he writes it on a board one Friday afternoon.

Then folks come by, see it, and they solve it over the weekend and have it all done. It's pervasive. You're not talking about it anymore. It's just part of the fabric of what you do.

Product development issues are identified and resolved. As opposed to this hierarchy that we're in today, it gets the entire organization acting like that. As opposed to right now, where we have to think about it too much.

Sasha Weintraub, Duke Energy: I agree with that. The analytics, the data, being focused, everything we said. The example with How Google Works was that people from all over solved the problem. It wasn't just one person's job to go solve it. People from all over, that is, the crowd, took the challenge and tried to figure out a better solution.

That's going to be when problems get much more transparent and faster. When people go at it in a much more collaborative way than project teams.

Innovation's going to be where technology and data are going to allow us to be much more focused and quicker. We'll know what the problem is and we'll be able to go right at it.

I now appreciate more than ever the value a utility logo brings, something I no longer have.

We're still enjoying the challenge with innovation 1.0, let alone trying to think through 2.0.

Chris Gould, Exelon: Not everybody drinks Starbucks, right? What do we do for all customers? The ones who like Dunkin' Donuts coffee. Or the ones who like gourmet coffee?

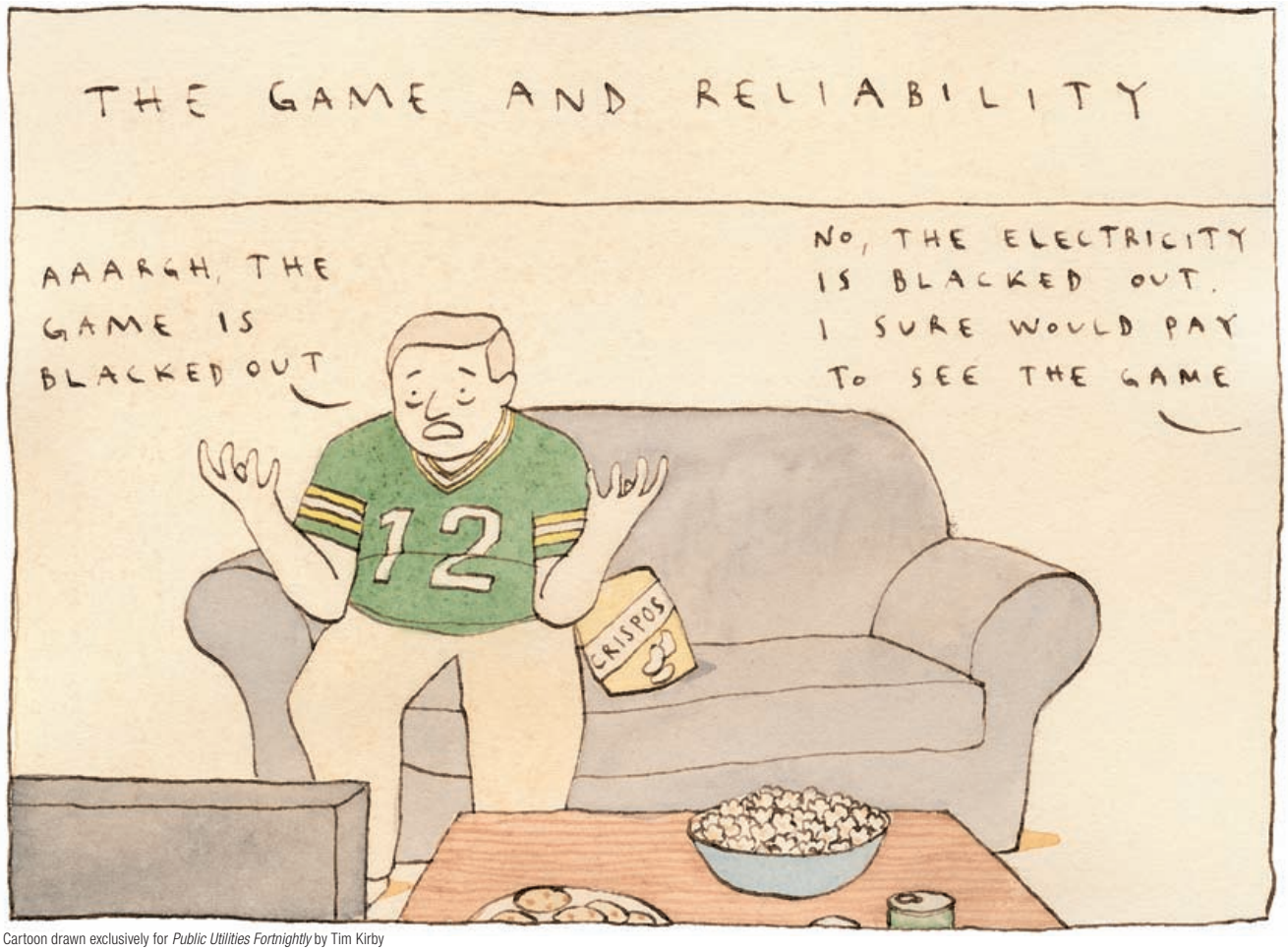
As the industry evolves its capabilities to segment customers, and understand more deeply from data and from other mechanisms, innovation goes from applying a broad brush to much more refined and fine-tuned. It drives towards specific issues within different customer segments.

Tom Flaherty: What final words of wisdom would you give the other panelists who may be pursuing exactly what you have already completed?

Bert Valdman, Optimum Energy: After architecting the utility's response to a more distributed competitive electric system, which involved investing in new business models and emerging companies, I felt I had an obligation to actually make one work. And no surprise, it's fun and gratifying, but it's sure not easy.

I think back to when I was in the utility C-suite with so many resources at the ready. I would pose a question in a meeting out of curiosity, not expecting any follow-up, only to find that an entire team had labored to answer the question. A week later they would be in my office with a PowerPoint presentation.

In an emerging company, resources are limited. It's all about



Cartoon drawn exclusively for *Public Utilities Fortnightly* by Tim Kirby

focus and being judicious in where you invest time. If you lose focus as an emerging company, you lose your company.

If there's utility sector interest in investing and enabling an emerging company, then there are several high-level questions to ask when evaluating opportunities: Are the fundamentals strong, and can the business scale without subsidies? How easy is it to buy the product or service? Is the business purpose consistent with your mission of supporting customers?

If the answers to these questions are yes, then take a risk and invest.

A song and an analogy come to mind.

First, the song:

I'm reminded of the lyrics from Adele's song, Hello: "Hello from the other side, I called a thousand times."

I'm now on the other side, outside of the utility and its captive market, commercializing new technology in a sector where competition is keen. It takes persistence and calling a thousand times to build credibility with customers. I now appreciate more than ever the value a utility logo brings, something I no longer have.

Second, the analogy:

I watch how my son who is a high school senior learns calculus. His classroom time is spent solving math problems together with classmates and his teacher only facilitates. Math concept learning happens at home, often with online support from various sources that he's found on his own.

Since problem sets are often completed online, his teacher has a high level of situational awareness and can monitor each student's progress. And provide individualized instruction as necessary.

That's completely different from how I learned calculus, where class time was spent learning the concept. Then homework was completing problem sets alone with only the math book as a resource.

So how does this relate to our electric system?

Rather than the current centrally driven, command and control structure where utilities direct customers, customers will work collaboratively together. They'll build coalitions among themselves, often with non-utility third parties, to develop individualized solutions on a micro level.

The electric utility will facilitate this solutions process and will have situational awareness on a system-wide basis, but won't exert control on a circuit-by-circuit basis.

Being nimble and easy to do business with in this environment will be key to success, and utilities can learn this from emerging companies. PUF