Four CEOs on Innovation

Sustaining Momentum

Patti Poppe, CEO, CMS Energy
Scott Prochazka, CEO, Centerpoint Energy
Ben Fowke, CEO, Xcel Energy
Connie Lau, CEO, Hawaiian Electric Industries
With Tom Flaherty and Steve Mitnick at the EEI Annual Convention in San Diego

Today's electric and gas utility managements are actively seeking to capitalize on what incipient technologies can provide as sources for growth, customer value and grid modernization. They are not overawed by technologies as threats, rather they see opportunity in disruption.

For the last several years, utility CEOs have made reinforcing the importance of innovation a priority for their companies. These CEOs have accepted the challenge of moving from discreet encouragement to the vanguard of innovation leadership.

During June's Edison Electric Institute annual convention in San Diego, Tom Flaherty of Strategy& and Steve Mitnick of *Public Utilities Fortnightly* were joined by four chief executive officers for a virtual roundtable: Patti Poppe of CMS Energy, Scott Prochazka of CenterPoint Energy, Connie Lau of Hawaiian Electric Industries and Ben Fowke of Xcel Energy.

These CEOs were energized about what they have accomplished in harnessing the power of employee ideas in just a couple of years. They proudly described the progress they have made in building an innovation mindset within their companies. Graciously, they parlayed their experience into thoughtful suggestions that can help peer companies with their own innovation journeys.

Customers at the Forefront

The CEOs start from a premise that a primary purpose of innovation is to enhance the value customers receive from their incumbent utility. This value premise is fundamental to how the CEOs frame their desired innovation outcomes.

This enriched customer experience can be measured as affordability, value, commitment, offerings, sustainability, or engagement. These attributes cause the CEOs to seek to continually improve how their companies interact with customers, anticipate their needs, convey accurate information and, solve the problems they face every day.

These CEOs are highly cognizant of how companies around them are influencing customer expectations and attitudes. The new consumer monoliths, for example, Amazon, AT&T and Apple, among others, are creating a new awareness in customers of how other entities simplify and heighten the value of engagement.

These entities are reshaping the standards for customer value as they continuously devise innovative ways to create more points of contact and speed the resolution of transactions. The CEOs understand that the customer value bar is rising continuously.

(Cont. on page 79)

– Tom Flaherty, Senior Advisor to Strategy&, part of the PwC network

Patti Poppe

CEO, CMS Energy

Tom Flaherty of Strategy& (PwC): What have you and your management team been undertaking about innovation in the last couple of years?

Patti Poppe, CEO, CMS Energy: The team at CMS and Consumers Energy has been implementing what we refer to as Our Consumers Energy Way, and that is a lean operating system. When we think about innovation, it's really focused on our customers – the daily execution that delivers value.

The implementation of a lean operating system in and of itself is somewhat innovative, because it's all about the best customer experience possible with the least amount of waste and the lowest cost achievable.

When we look at it, we zero in on innovation and solutions that can be created closest to the work, by the people who have what we describe as human struggle, to eliminate waste and get our work done right the first time.

For example, when I was in charge of operations, I spent my first hundred days on the road. I went to every single one of our forty-three service centers across the state of Michigan. That meant spending the day in the field with the crews, wearing jeans, a hard hat, and safety glasses to really understand how work happens at this company – how we are taking care of our customers.

I was very surprised in many occasions that it did not go as well as I was expecting. Our crews, my co-workers, were very dissatisfied with their ability to deliver quality work for our customers on the first attempt – there was a lot of rework happening. So, we set about innovating and creating new processes – and that was really the genesis of our Consumers Energy Way.

What I loved hearing from my co-workers was their level of dissatisfaction with the status quo. They were not conditioned to think that getting their work done right only some of the time was okay. They wanted to get it right on time, every time – because they serve their friends, their families and their neighbors.

When we say our customers are our family, friends and neighbors, we're not exaggerating. My sister lives next door to me, and my dad lives next door to her. These are the people we're responsible for serving – our customers truly are our family, friends and neighbors.

To show up on a job site and be late, not have the right materials, not have the right equipment, and not be able to complete the work is very dissatisfying. So we really target our innovation around solutions to the work closest to the customer – and all of the work is based off what we refer to as our CE Way playbook. It has four basic plays: visual management, daily operating reviews, problem solving and standards.

The visual management and operating reviews are key, because they give everyone insight into the work on the ground. This stuff is basic – but it's innovative in that we are deploying the lessons of lean to a utility.

How many senior management teams know by 9:15 a.m. exactly what was supposed to happen yesterday, what actually happened yesterday, what did we learn, and what are we doing about it today?

It takes fifteen minutes for our most senior executives of operations, engineering and customer to know what happened, why and what we're doing differently today. That creates a platform for innovation, around the basics, and we've had extraordinary ideas come to fruition as a result. Executives are now tuned into the areas and people that require support and attention. We are much less likely to be distracted by "shiny pennies" and the risky technology adoptions.

Tom Flaherty: Does that come from your background from engineering and the auto industry?

Patti Poppe: The automotive industry, yes. My timing is interesting, because when I joined the auto industry it was right before the drop, and I got to see us really feel the heat of Japanese competition.

I was an industrial engineer in the automotive industry – so I observed and experienced what was happening around me. My job was to reduce and eliminate waste from our processes and yield a higher quality output. That definitely is in my experience set, but what really drove us at Consumers Energy was our co-workers' demand for it.

All these crew members every day would say things like, Patti, what are you going to do? Why can't you guys get this stuff straightened out?

We realized that the only way to get it straightened out was with them and through them.

One example was the coal mill overhaul process at our power plants. Our coal mill maintenance crews used what was considered an industry standard. It's a lapping process of the thrust bearing. Lapping is a process in which two surfaces are rubbed together, with an abrasive material in between, to achieve a very smooth finish and flat surface. It used to take seven shifts and had a significant amount of human strain, because of repetitive motion. There was a safety issue and a productivity issue.

Our team came up with a process that defied the odds of industry standards and innovated an automated lapping machine. They said, there's got to be a better way.

They came up with this automated tool, designed it, and implemented it. We went from seven shifts to three shifts.

That's a big deal, when you think about the number of mills at the multiple plants. Now we've reduced the repetitive motion for safety reasons, and we've got better surface area coverage. It used to be about eighty percent surface effectiveness – now it's greater than ninety percent.

We zero in on innovation and solutions closest to the work, by people who have human struggle, to eliminate waste and get our work done right the first time.

The best part of all of this is that my co-workers came up with the improved process themselves. I was just doing a visit at the plant and they said, oh, we should show you this. Here's something the guys came up with.

It wasn't like somebody said, okay, people you have to reduce the lapping time. Nobody said that.

When we talk about what motivates innovation, and what creates innovation, I would suggest you have to create the culture and the innovation mindset to continuously improve.

Every day we should come into work committed to doing our job better today than we did it yesterday. Not as an indictment to yesterday, but as a commitment to doing it better tomorrow. It's that mindset – can you imagine the number of amazing ideas that come up through the organization when you create that kind of innovation?

I'm not talking about patents. Those guys probably could get a patent on that lapping equipment, but it's not necessarily cutting edge. We're not going to the extreme. We're just saying, what are our most important work efforts? What do our customers care the most about, and how do we do it in a higher quality way at a lower cost? That's the Consumers Energy Way.

Tom Flaherty: Can you elaborate on providing the best customer experience?

Patti Poppe: We have about twelve million electronic contacts

CEO Patti Poppe, fifth from the right, with a Consumers Energy crew.

and four-million calls annually; it is a rich area for improvement. So, we deployed the Consumers Energy Way to our contact center.

We have five of them in the state of Michigan, and I visited one recently. It was extremely compelling. They have a morning huddle which is part of our daily operating reviews, where they review visual management boards and measure world-class calls.

We used to measure average speed to answer the phone and average handle time, which are very classic call-center metrics. It was, get them off the phone faster and answer as fast as you can.

But we discovered that was not yielding high levels of satisfaction for customers. We could see that no matter what our average handle time was, they were dissatisfied. So, we transitioned to what we refer to as a world-class call.

A world-class call means you resolve whatever the issue is while you're on the phone. Sometimes that takes longer, but satisfaction has gone up dramatically. At the same time, we have deployed technology to reduce the number of reasons for calls.

It's our industry so let's make it as good as it can be. We have typically about forty-seven thousand calls a month for a move in or a move out at a residence. It peaks in June with seventy-five thousand calls because of college move ins and move outs. All these kids are coming and going – and they don't want to spend their time talking on the phone.

Making our website mobile, so they can do it on their phones, has dramatically improved and reduced the number of calls to the contact center. That is combined with some of our earliest application of what I would describe as design thinking, related to our smart meter deployment.

In pursuit of having a world-class call, we did the Pareto chart. This is our problem-solving play. Through the Pareto, we discovered high bills or billing questions to be a number one reason people would call us.

They wanted to get it right on time, every time – because they serve their friends, their families and their neighbors.

So, we worked with IDEO, who's a design firm out of Palo Alto, to design our customer experience around smart meters. We knew we weren't first. There were other utilities who had been ahead of us and they learned a lot, so we certainly were beneficiaries of that.

We worked with IDEO to design the customer experience for installing the meters. We wanted to make it as cost efficient as possible, but also use it as a way to reintroduce ourselves to our customers.

That's what we told ourselves. We're going to be on everybody's porch and we have the opportunity to reintroduce ourselves to our customers, so let's make it a world-class experience.

It's a little bit like Safelite Repair, the windshield service. We told our customers when we were coming, who was coming, and what they would look like.

We communicated four times ahead of an installation culminating in door hangers on the day prior. We didn't over promise. We didn't say your bills are going to drop the minute you get a smart meter. We just executed the experience as promised. Our net promoter score for customers who have a smart meter and have gone through that experience, went up forty percent just for getting a meter installed.

I'll tell you how I knew that we had done it right. I was at the hair dresser and she said, Patti, I got my new meter today. I said, you did? How did you know?

She said, I had an interruption at 11 a.m. and I knew it was going to be at 11 because you told me you were going to be there

CEO Patti Poppe looking at electric field work and to the right, at the Ludington pumped storage plant.

A world-class call means you resolve whatever the issue is while you're on the phone. Sometimes that takes longer, but satisfaction has gone up dramatically.

at 11. So, I was not surprised when my power was interrupted, because I was ready.

The guy you said was coming, came. It all went exactly like you said it would. And I am so excited because I now have my new meter. I thought, okay, we nailed it.

That's simple innovation. This firm did such a good job. They help us get into the shoes of our customers. They have anthropologists, engineers, and data scientists who come together to really observe what customers believe.

What we learned is that we are trusted at the pole. When there is a crisis, there is no one better than our crews in our blue and white bucket trucks pulling up.

When your power is out, there's no one better that the customer wants to see. But on a day-to-day basis, as you come a little closer to the house, there's not as much trust. We knew we had an opportunity to innovate the experience and build that trust.

It could have just been a capital project. Regular capital project managers could have just exchanged all those meters. But instead, we again took this effort to reintroduce ourselves to our customers and we had dramatic improvement in customer satisfaction, because it was a more predictable interaction. We reduced the costs to do it. We had it down to a science. That's the perfect example of lean: higher quality experience at the lowest cost possible.

Translate that into context at the contact centers. We reduced our annual call volume by almost two-million calls, thanks to accurate bills, and technology-enabled information.

Just this week, a gentleman stopped me at a function and said, I just need to tell you, I have a rental house and the bill was really high. So, I called your contact center and I had the most delightful experience.

I knew everything he said was all the things that we had done. It was not surprising at all that he had a delightful experience. He said, I called, and she could tell me by the day, by the hour, what was going on with my usage and when something had changed.

He added, I had put a space heater on my screened-in porch. I was basically heating my yard. She made fun of me for doing it. We were laughing on the phone. She was terrific. She shared her own experiences with me. It was like she was my partner to help me figure out what to do. Now I know, and you guys are terrific.

So, this shows, you can't just hope you have a good person and they get a bonus if they have shorter calls. You have to make sure the calls are accomplishing something for the customers.

PUF's Steve Mitnick: Aren't there diminishing returns? Once you become lean, where do you go from there?

Patti Poppe: What's amazing is how much waste there is in our system and how much opportunity. That is what I saw when I traveled the whole state. I go out today and I think, oh we are just at the beginning of our journey.

When we self-assess, we have our own maturity model for our implementation, the Consumers Energy Way. We are two years in to our actual deployment of other Consumer Energy Ways with our playbook and everything.

We self-assess by our own standards – a 1.5 on a four-point

scale, with four being best. We consider ourselves only 1.5. We have pockets of excellence that are further along such as customer on-time delivery, which is a major focus area because it's very cross-cutting to all of our functions.

In 2016, we completed work for a customer on-time about nine percent of the time. My peers are going to read that and go, wow, we are better than that. Well, no, I mean from the first time they called us to the point of installation. The first time they called and said, we want it July 10th. Nine percent of the time we got in on July 10th.

A lot of people start measuring it from the time it gets scheduled not the time the customer requested. We stick to our first call commitment.

Our engineers would be designing work that wasn't required, and not designing the work that was required. In their defense, we didn't have a standardized process from point of call to point of completion. That's classic industrial engineering. Classic design of work.

We designed that work now and we are up to sixty-five percent. That's an annual average for 2017. Already inside this year, we are continually improving that.

That's the sort of thing that my senior management team knows by 9:15 a.m. every morning. How did we do on customer on-time delivery, yesterday? What are we doing about it today? What are the bottlenecks? What are the issues? They know right now. That's process innovation.

Tom Flaherty: Again, on the customer experience side, where do you take it next? Is it offerings? Customer options?

Patti Poppe: I'm particularly tuned into, and excited about, the way we price our product. The per-unit pricing model has limited life-span.

I like the idea of creating option packages for customers, changing the way we price our product, so that people will select for value. Much like our cell phones. Remember when we used to pay by the minute? I know time-of-use rates are an important motivator for people saving energy, but they're not ideal from a customer point of view.

It's just like when we used to have to call our mother at 7 p.m. because that is when our minutes were free. They were cheaper. We all hated that. Now we are having this big conversation of let's have more time-of-use rates. I just feel like we are heading down the same track.

We are just looking at different ways of pricing for our current offerings but bundling them for value. Some people want the bare-bones basics, electronic bill, only mobile access, just keep it bare-bones basic, simple.

There are other people who are willing to pay for renewable energy or want perfect power where they would have a back-up generator that we can maintain as well. Then maybe if somebody wants an energy efficient pricing package, they might opt in to a time-of-use rate. But to blanket these per minutes and per kilowatts, our industry risks dissatisfying our customers and opening doors to competitors with simpler options.

Tom Flaherty: How do we bridge this gap between what the industry has historically believed and what customers value now – which is receiving more value from the relationship they have with their incumbent?

Patti Poppe: I think our experience with our smart meters is a good blueprint. You have to actually understand your customers well enough to know the changes you would make would be satisfying for them. I think we are continuing to improve our core competence in understanding our customers' preferences and designing with them in mind.

My senior management team did a visit. We go "back to school" twice a year. I call it getting our head out of the boat. If you're on a sail boat, and the skipper is dealing with the rope problem in the back of the boat, you're going to have trouble.

We know that we have a very competent team who can handle the rope problems. We need to have our eyes on the horizon and know what's coming toward us. So, twice a year the management

Consumers and Clean

As part of its clean and lean operating strategy, Consumers Energy recently announced it is seizing a once-in-a-generation opportunity to reshape Michigan's energy future with a plan that embodies its triple bottom line commitment to people, the planet and prosperity.

The company filed a clean energy plan with the Michigan Public Service Commission that outlines the path to using zero coal while ensuring affordable and reliable energy for Michigan's families and businesses. It specifically details how the company will meet the energy needs of the future with increased use of energy efficiency, demand management programs and significantly more renewable sources.

Under the plan, the company would increase renewable energy from eleven percent today to thirty-seven percent by 2030 and forty-three percent by 2040. This will help the company achieve its clean energy breakthrough goal, announced earlier this year, to reduce carbon emissions by eighty percent and eliminate the use of coal to generate electricity by 2040.

Over the last eighteen months, Consumers Energy developed the clean energy plan by gathering input from a diverse group of customers and key stakeholders – including a series of public forums – to build a deeper understanding of shared goals. The company then modeled future scenarios using a variety of assumptions about factors such as market prices, energy demand and levels of clean energy resources, including demand response and energy efficiency, wind and solar.

team goes back to school. This year we went to Stanford and we visited several west coast companies – STEM, Tesla, Google, Nest, and the Stanford Precourt Energy Center and Stanford d.school (design school).

We did a business customer experience design workshop with Stanford. They actually brought business customers in. We did a focus group, which is different from our focus groups that we know how to do. We did deep observation of people's feelings about our product – about electric service.

This woman told the story that she owns a tomato packing company. She has this well-known Bay Area salsa company. They had a power outage. She talked about what happened.

Since she is a small-business owner, her cousin and her son had to come over. Everyone was running around because if they don't have their salsa ready by a particular time then it doesn't get on the truck. So, if it doesn't get to the grocery store by the time that they need it to, they have a total loss for the day.

It's a big problem. But they are small enough that they didn't have back-up generation – they didn't know what to do. They weren't experienced in energy. They're salsa packers – they don't know what we know. Somebody asked her, did you call your utility? She said, no, I didn't think of that.

We would never imagine that someone wouldn't think of that. But the truth is, to truly understand our customers, we have to get very close to them. So, this design thinking is really infusing our thinking.

We are having Stanford come and run a workshop for my top three hundred leaders in design thinking, particularly those leaders who are interfacing with customers. My three hundred leaders interface with customers a lot.

We say we're customer centric. We are committed to customer centricity. But to your point – how do you know who they are and what are you actually changing?

Tom Flaherty: How do you continue to work at embedding the culture of innovation within the company?

Patti Poppe: This is where our lean playbook really comes into play. Let's start with visual management. Grownups are visual thinkers, and many of the people in our company are good with their hands.

(Cont. on page 70)

Scott Prochazka

CEO, CenterPoint Energy

Tom Flaherty of Strategy& (PwC): How have you been driving innovation through the company in the last few years?

Scott Prochazka, CEO, CenterPoint Energy: For the past several years, our strategy has been operationally focused. We've been driven by a goal to enhance the customer experience.

In our electric business, with advanced metering and grid automation, as well as our customer care system, we've significantly enhanced our customer service.

We've reduced outages by twenty-five percent. Advanced metering enables us to see exactly where outages are located. The new customer care system then provides direct messaging to consumers. Our metered customers receive messages within minutes telling them we know their power is out. The notification also explains what the problem is, that we're sending our people to work on it, and estimated restoration times. Finally, we confirm that the work is done.

We've also introduced predictive analytics in our call centers. When we receive a call, the system will evaluate millions of pieces of data in real time. Then, it will start asking the customer questions, based on what we think they're calling for.

Tom Flaherty: Do you feel that these operational technologies have enabled a different customer experience, where the starting point for how you think about innovation is embedded within the company's vision?

Scott Prochazka: It really was the starting point. Then the question became, how do you think about innovation at an enterprise level? Not just at the operating level or at the customer level. Because we have to be able to drive innovation in a much larger way.

We recognized that the concept of disruption, driven by innovation and technology, is creating the changes in customer expectations and needs.

In many ways, Amazon has set the bar. Other companies are evaluated based on their level of service. We know that. And we're thinking disruption is coming at a much more accelerated pace.

Disruption a decade ago was an event that happened about once every three or four years. It was a big event. Everyone would talk about it for a year or two. Then, you might have a strategy in place to respond to it.

Now, it seems like we're dealing with disruptions on a weekly basis. So, the key question for industry leaders is, how do you evolve an organization so it's anticipating and has strategies for major disruptions?

Tom Flaherty: How do you move past technologically driven

evolution to extend the customer experience to more products and services and commercialization?

Scott Prochazka: We've had to recognize that the traditional way of thinking – about dealing with innovation – isn't going to work.

Our traditional way might be that you get senior leaders together, talk about it and then form a team led by one of them. We said that's not going to be successful. That's just not how things should be done today.

So, we created what we're calling an Innovation Incubator Team. It's a group of thirty high-potential CenterPoint Energy employees representing different businesses and functional areas. The team developed a roadmap for building a culture of innovation at our company, including understanding trends and developments in innovation; engaging and motivating our workforce to explore innovation; and identifying ways that innovation can positively impact our company and performance.

The team has a lot of energy and insight. They went through a nine-month period of assessing all the challenges and opportunities we face. In the end, they came up with a great strategic plan and timeline for building a culture of innovation at CenterPoint Energy.

It's not just how we execute a project. It's not just how we respond to outside forces. The Innovation Incubator Team is evolving how we – fundamentally – become an innovative company.

Steve Mitnick: What's an example of a part of the business they looked at?

Scott Prochazka: The team looked across the organization. And they said if we want to be recognized as an innovative company, we need to recognize there's a layer in the middle of the organization where innovation isn't thriving as it could be.

The Innovation Incubator Team was candid. They said there are barriers to innovation in our organization. It may be at different levels and in different parts of the organization, but it exists.

That led to a stronger campaign – focused on leadership – around what's expected relative to building a culture of innovation.

We developed a simple and memorable call-to-action, Reject, Find, Drive. This means we strive to challenge each other to think creatively and consider new approaches. We encourage a mindset to reject the status quo, work together to find new ideas, and drive them to completion. It is our goal to shape CenterPoint Energy's future together using this mindset.

Reject, Find, Drive serves as a catalyst for encouraging each other – at every level – to think in terms of innovation and share ideas.

Steve Mitnick: When there are hurdles, employees can apply this model?

Scott Prochazka: Yes. They can reflect on the fact that our senior leaders and supervisors say, "A Reject, Find, Drive mindset is important to our long-term performance." It's our goal for all employees to act as ambassadors for innovation, focusing on practical, efficient and effective opportunities and solutions for our company.

Our goal also is to create a work environment in which every employee is engaged, aligned with our vision and values, and understands how they contribute to the company's long-term performance. In order to achieve this goal, we strive to connect with our employees in meaningful ways.

For example, we held sixteen employee and leadership meetings in 2017, connecting with thousands of our employees face-to-face. These meetings were also designed to hear what was on our employees' minds and discuss the importance of Reject, Find, Drive. More than ninety percent of employees who attended the meetings found them to be either highly effective or effective.

We'll hold fifteen employee and leadership meetings this year and conduct other employee outreach activities. I'll also host floor meetings, visit company locations and small group conversations to hear from employees across all levels of the organization about Reject, Find, Drive and innovation.

The key question for industry leaders is, how do you evolve an organization so it's anticipating and has strategies for major disruptions?

What I say in all these meetings is we need to talk about an organization that is not just a safe and reliable operator. That isn't an innovative company. We need to talk about an organization that's both of these.

In other words, we have to respect both capabilities within the organization. Not everybody in the organization has to be good at both. But as an organization, overall, we have to be good at both. And we have to respect the value of both.

Tom Flaherty: How do we take innovation to the next step, given shifts in customer behaviors, and as we move from operationalizing to commercializing ideas?

Scott Prochazka: We have to be more adept at developing new products and services in a cost-effective way and in a rapid timeframe.

Given the pace of disruption and technology development today, regulation can be too slow and inflexible to allow the kind of innovation and change that is needed. It's not that regulation is bad, it just isn't very facile.

The likely path forward to meet our customers' needs will be products or service offerings that complement our traditional regulated service.

In today's environment, you simply can't spend two years developing a product or service before it reaches the market. This means you've got to have resource pools that are not encumbered

by a regulated mindset. That's an area where our company and our industry are still evolving. We're getting a lot better in this space, but there's room for improvement.

Tom Flaherty: Are there other capabilities that enable embedding innovation within the business?

Scott Prochazka: Analytics, including how you manage and assess them. The key question here is how do you combine data science with business knowledge? That's where you're going to find the most valuable strategic opportunities.


CenterPoint Energy CEO Scott Prochazka talking innovation with Tom Flaherty, to the right.

We have a lot of talented people with business knowledge, but a limited number with experience in data science. Finding those two kinds of abilities in the same individual can be challenging.

The opportunity in our company and industry is to create ecosystems where you combine data science and business knowledge. This approach will be an important part of our talent strategy for the future.

Finally, we're working on an analytics platform, which will help our organization better understand what data tools are available and how we can access them.

Steve Mitnick: It's always tough for people with the business knowledge to think, how can this twenty-eight-year old that's doing algorithms and models help me?

Scott Prochazka: Exactly. But they have to have an open mind. What you do is talk to the operations team member about the challenges, issues and opportunities they see in the operating world. You've got team members who are thinking about what the customer needs. The conversation starts by identifying the opportunity.

You don't ask them what pieces of data would be helpful for you to solve the problem. Because that's not the way they think. By sharing the opportunity with a data scientist, they can help our business people identify, through analytics, value-creating solutions.

You don't have to have single individuals who can do it all. You just need to convene the right set of skills to attack a problem using data and analytics.

By using our Reject, Find and Drive mindset, you're challenging that operator. You're challenging that team member who speaks with our customers. You're challenging the consultant who is working with customers to meet their needs outside of regulated service. You're challenging them to think in terms of Reject, Find, Drive. That gives them license to ask questions, drive innovation and pull in things that they haven't been able to do in the past.

You simply can't spend two years developing a product or service before it reaches the market. You've got to have resource pools not encumbered by a regulated mindset.

Tom Flaherty: How are you instilling a culture of innovation?

Scott Prochazka: I get in front of all our leaders once a year. It helps drive consistency. I discuss the importance of leadership and performance in an age of disruption. I also explain what their role is and what's expected of them.

Through companywide communications and conversations, we're creating excitement around innovation. At this year's leadership meetings, we're hosting panels of employees to discuss the innovative changes they're making in their business or function. Giving front-line employees an opportunity to discuss their work is not only a great development opportunity, but the panelists are demonstrating that Reject, Find, Drive is being used across all levels of our organization.

Part of our communications is focused on the fact that innovation doesn't have to be something that requires millions of dollars of investment. It can be a simple process improvement.

For example, a manager in our Advanced Leak Detection group saw a company called Pipe Dogs online. The company

specializes in finding leaks on transmission lines by injecting a proprietary chemical, which a specially trained dog with its parts per billion sense of smell, smells to detect the point of the leak.

The natural gas in our distribution system is odorized for the safety of our customers. So, in the spirit of Reject, Find, Drive, we asked ourselves, why couldn't a dog detect the odorant? We posed the same question to Pipe Dogs.

Pipe Dogs trained a Labrador to detect leaks by smelling the odorant we inject into our natural gas. The process of training the dog took about eight months. In April 2018, we conducted the first field trial in Houston. The results were very impressive. In an area we had previously surveyed, the dog was able to locate every leak found in that survey, as well as several additional leaks.

Based on the results, we began considering how we could leverage this "innovation" to improve our leak survey results. Could we deliver even more safety value? In the coming months, we'll be running several pilots to further our understanding on how we can integrate dogs into our Leak Survey program, which is already an industry-leader with our implementation of the Picarro Surveyor.

Tom Flaherty: Are you thinking about potentially adopting any mechanisms that help link with incentives?

Scott Prochazka: We've talked about employees creating innovation goals as part of their annual goal-setting process. We've also talked about being able to recognize people through their annual pay cycle for having done something of significance with respect to innovation.

We have an employee recognition program called Energized By You. We're developing products and messaging that will link that system to efforts around innovation. Peers can recognize others and groups for the innovative work they do.

Tom Flaherty: What has surprised you in terms of how far and how fast you're able to move? And where are the other places that you still see opportunity?

Scott Prochazka: I've been extremely pleased to see just how excited and engaged the organization is about building a culture of innovation. There's a huge portion of our organization that likes to be challenged to come up with new ideas and make improvements.

At the end of the day, it's our goal to create a better CenterPoint Energy culture and company. We have all the pieces in place to make it happen. Thanks to our Innovation Incubator Team, we have the right roadmap. The leadership team is on board. And the conversation about Reject, Find, Drive – a key catalyst for innovation – is growing stronger every day.

Steve Mitnick: Your employees, like your customers, are looking for new ideas.

Scott Prochazka: Exactly. We know we've got the right capabilities here. But how do we unleash them? And how do make it work in an organized fashion?

That's why we stress that everyone at CenterPoint Energy needs to act as ambassadors for innovation, focusing on practical, efficient and effective opportunities and solutions for our company. Our culture for innovation will thrive when every aspect of our organization promotes engagement, creativity and support.

It's not just money. It's a mindset. If an idea can create sustainable value for our stakeholders, we'll find a way to support it.

If it's a great idea that could generate a lot of operating income, but takes tens of millions of dollars to launch, it's probably not going to work. But we'll still air those.

However, if we need budget support to test something with strong potential, and if the idea could be very important to our stakeholders, we'll figure out a way to make it work.

Tom Flaherty: What would you like to impart to your peers in the industry that might help them on their innovation journey?

In the spirit of Reject, Find, Drive, we asked ourselves, why couldn't a dog detect the [natural gas] odorant? We posed the same question to Pipe Dogs.

Scott Prochazka: Don't underestimate the capabilities of your organization to produce what you're looking for. Don't necessarily go out and hire a capability or create a new department with a special budget.

You've got the potential to be innovative within your organization. It's a matter of how you unleash it. I'd also think about it as a cultural question, too.

It's not about creating a department with a catchy name. It's about acknowledging that there's been a cultural shift, from where we have been for a hundred-plus years to where we need to be as an industry.

To build a culture of innovation, it has to happen across all levels of the organization – among front-line employees, across supervisors and managers, and throughout senior management. Everyone has to be aligned and motivated to be successful. And it has to be driven by effective, consistent communications.

Many great innovations are the result of someone thinking differently than everyone else. Not thinking of the way things are done now – but thinking of the ways things could be done.

For years, our industry has used innovation to make our companies safer, more efficient and more effective. In today's business environment, disruption in the forms of innovation and technology are the norms, not the exception. Your journey should include a clear call-to-action to employees for building a culture where everyone explores innovation and technology and uses them to improve your business.

Ben Fowke

CEO, Xcel Energy

Tom Flaherty of Strategy& (PwC): How is your company concentrating on innovation?

Ben Fowke, CEO, Xcel Energy: We're concentrating on three key things: leading the clean energy transition, enhancing the customer experience and keeping customer bills low. We've been working hard to get the entire company focused on and working to deliver these priorities. I'm convinced that if we can do all three things, we'll be successful in the long term.

Getting these things done requires innovation, and if an initiative can deliver on all three things, you have a real winner. By that view, we've seen innovation at its best in our expansive wind projects, which I like to call "steel for fuel."

We know most of our customers want a clean energy product, and of course they all want a more affordable product. "Steel for fuel" is a key way to connect with customers by giving them what they want. We're capitalizing on the great wind resources in the states we serve to give them a clean product at a lower cost – a really unique result since typically we would think that new investment in cleaner energy would raise costs. But by seizing the opportunity right now, that simply isn't the case.

In short, we compare the forecast for natural gas prices – the "fuel" – to the cost to build a wind farm – the "steel." Today, steel is deeply in the money, and we're really excited about that.

While the math behind "steel for fuel" is pretty straightforward, it takes a lot of planning to successfully execute on it. That's where the innovation comes in – from contracting, to speed to market to take advantage of federal tax credits, to efficiently integrating a tremendous amount of renewables on the grid while ensuring reliability – all of those efforts had to come together.

Our CAPX 2020 project helped us deliver this wind energy to customers. We worked effectively with industry partners starting back in 2004 to construct nearly eight-hundred miles of new transmission lines, a massive undertaking completed last year. This innovative effort laid the foundation for the supply mix of the future, and we're capitalizing on it with "steel for fuel."

At the same time, we've worked to develop much better wind-forecasting software – micro-weather forecasting – that allows us to better use wind when it is available.

Eight years ago, I would have said twenty-five percent renewables or maybe thirty percent is the most we could operate, both from an economic and reliability perspective. I would have been pleased to provide wind to our customers at a levelized cost in the mid-sixty dollar per megawatt-hour range.

Today, we're seeing wind under twenty dollars per megawatt-hour, and we're working to integrate up to fifty-percent renewables on our system in the next five years – all while ensuring reliability. It's really a remarkable story. We've taken advantage of technology and been innovative on execution.

Tom Flaherty: With respect to the recent Colorado action, were those prices indicative of the future?

Ben Fowke: We were really pleased to see the pricing and the potential for the next wave of innovative resources. Wind, solar, batteries, and various combinations were proposed and the prices were very favorable. That tells me that "steel for fuel" continues to be a great strategy – as new opportunities emerge we'll take advantage of innovation and new technologies. I call that using technology at the "speed of value."

We're seeing wind under $20/MWH, and we're working to integrate up to 50% renewables on our system in the next five years – all while ensuring reliability.

A lot of work and innovation have gone into the plan awaiting decision by the Commission. Reaching a settlement with most stakeholders clearly required collaboration – ensuring we recognize the important roles both the utility and developers play in achieving a clean energy future. That was a really important factor reflected in the settlement.

One of the ways we're leading the clean-energy transition is by not leaving behind the impacted host communities for our existing power plants. We're really focused on that in all the states we serve, making sure we've provided enough lead time, so employees and local communities can prepare. We've made natural attrition of our employees work for us, and we work closely with communities on tax revenues and economic development so that they come out strong during the transition. Focusing on such successful outcomes is something that utilities are uniquely poised to do, and we can't lose sight of stakeholders as our industry transitions.

For example, in Colorado, we're working closely with the community of Pueblo, the host community for the coal plants that would be retired. We recognize the importance of jobs to this community, not only at our plant but at the local steel mill that employs about a thousand workers and was considering leaving the region.

As part of the plan we're working on a very innovative deal using economically priced renewables that we believe will help retain the steel mill and in fact expand its operations. Looking for those types of win-win situations are incredibly important to achieve the three strategic priorities we discussed earlier.

Steve Mitnick: How did Xcel Energy develop the core competencies to develop wind?

Ben Fowke: We learned things along the way. We had to adopt a willingness to innovate and adapt and decide we wanted to make it happen.

We worked with a number of governmental agencies to develop software that helps us understand the wind resource better and how we can integrate it into our system, which affects our whole dispatch and bid/purchase approach on a minute-by-minute basis. We also started incorporating efforts to make sure that our fossil generation portfolio is more flexible so that it follows not only load, but the variable wind resource. And we had to adapt our contracting and construction approaches to seize on opportunities and build new partnerships so that we execute well.

Tom Flaherty: How do you internalize the three pillars you mentioned in terms of instilling a base employee mindset?

Ben Fowke: I want our employees to know that, for us to be successful, we have to be more cost-focused, more competitively-aware, and more customer-focused than ever before. Being successful will require a mindset of continuous improvement so that we're always asking ourselves, how can we do better? I think you do that by having programs that are supported by the entire senior leadership team. We also encourage idea generation from employees, that's where much innovation can come from.

Xcel Energy CEO Ben Fowke talking innovation.

Even if we don't go forward with your idea, we'll explain why. When you ask somebody for an idea, then you don't provide them with feedback, engagement will diminish.

For example, about a year and a half ago, we opened up various locations around the company called continuous improvement centers. We've had five-hundred different ideas come through them thus far, and a number of ideas have already been implemented.

The important thing that I want employees to know is, even if we don't go forward with your idea, we'll explain why. One of the things I've learned along the way is that, when you ask somebody for an idea, and then you don't provide them with feedback, engagement will diminish.

We've also taken a hard look at all of our processes – particularly those that serve the customer – looking for ways we could improve. We're seeing remarkable progress across the organization and know that we can continue to simplify things, which in turn will lower costs while enhancing the customer experience. We've kept our operations and maintenance costs flat for the last four years without sacrificing reliability.

I'm particularly proud of the work we've accomplished in our nuclear facilities, where our operations have improved significantly. In an industry that is so scrutinized, that's not easy. But we've actually delivered on the nuclear promise.

We've gone through our supply chain processes and learned different ways to address risk and started saving tens of millions of dollars. Most recently, we used data and risk analytics to determine where resources should be allocated to preserve the security requirements at one of our nuclear plants. We believe we have a better and less expensive process. It'll save us a couple million dollars a year and even more as we deploy the approach across our system.

Tom Flaherty: How did you paint the picture for the employee base? Was it reflecting opportunity, necessity, or both?

Ben Fowke: Really both. First of all, I think you remind employees about the great work we've done over the years in serving our communities. People take reliability for granted, and that's because

of the great work we do. I don't think you have to scare employees, but we all know technology is changing. For instance, twelve years ago, Yellow Cab had no competition. Employees have to be mindful of the changing landscape around us in our own industry, particularly with respect to customer expectations.

In the case of our nuclear business, we all see what's happening in nuclear plants across the country. I think if you paint the picture of what's happening but also show how we can be successful employees will follow and in fact engage to contribute to our success. We have great employees and the engagement in this journey has been phenomenal.

Tom Flaherty: What are some capabilities you are focusing on to grow the business?

Ben Fowke: I want to move away from the mindset of managing to budget. Budgets are still important, but clear metrics on how we are operating are far more transparent and will allow us to measure continuous improvement more efficiently. And we will keep getting better – because the bar is raised every year.

Just think of the team that wins the Super Bowl. That team doesn't skip the NFL draft the next year. They participate because they need to keep getting better.

I believe if we focus on metrics, we will likewise keep improving. It will be a lot easier to hold each other accountable and help each other be successful than if we simply had an "I met budget" mindset.

In the past, we struggled to pull that kind of data out of our system. We just implemented SAP, a tremendous undertaking with risks and benefits. I'm really pleased because we brought it in on time and on budget.

We still have work to do to get those metrics flowing freely and get people accustomed to the system. However, this gives us a platform, so we can manage the company more efficiently with better data.

We're in the early days. Data analytics, artificial intelligence – everybody is talking about these innovations. Utilities have a lot of data. I think we're going to learn a lot in the next few years about how to use that data combined with other available information to better serve our customers.

Tom Flaherty: You mentioned creating a premium customer experience. What are you focused on, from an innovation point of view?

Ben Fowke: Just about everything! But let me give you a few things we're doing right now.

We're looking at improving all our processes that touch our customers. We're an engineering company, and we're really good at executing on our infrastructure. What we need to do is take our exceptional engineering processes and filter them through the eyes of the customer.

That's where we start to understand how customers perceive us. They need information like when will we be there to do the work? And then we need to be sure to deliver on that commitment. They're not comparing us to another utility, which is who we used to benchmark to. They're comparing us to Amazon, FedEx, and Domino's Pizza. So, we must use technology and include processes to ensure we communicate better, and then deliver on what we said we'd do.

Likewise, we have some of the best storm response in the business. But we learned that, from a customer perspective, communication is just as important as the storm recovery time. To improve customer satisfaction we need not only great storm response, but also great communication. So, we revamped our mobile app and our outage reporting system, and our satisfaction scores have increased as a result.

At the same time, we know customers appreciate what we're doing with carbon reductions, and the renewables that we have on our system, but some are asking for even more. So we've developed and received approval of products that allow our customers to be a hundred percent renewable. We're doing this in a way that is not shifting cost to another customer class. That's really an important principle for us.

We're the first utility in the nation to get FAA approval to fly beyond visual line of site. Think about the innovation and cost savings that can come from a drone program!

Tom Flaherty: From an innovation perspective, how do you focus on creating value from your initiatives, then commercializing them?

Ben Fowke: We've got some more products in the works that we haven't rolled out yet because we want to ensure they are viable for both the customer and the company. But our Renewable*Connect program gives our customers more renewable energy choices beyond our basic service offering.

For instance, the customer can choose a three, five, or ten-year deal. We can provide this service in a way that doesn't require cross-subsidization between other customer classes.

The program has been very well received. We started it in Minnesota, offering customers wind and solar energy options. Our Colorado program, which just launched, gives customer several solar energy choices. We're excited about these offerings and the potential they have for giving our customers what they want.

Renewable*Connect is available not only for residential customers, but for commercial customers and communities, too. We're seeing a lot of interest from Breckenridge and several other Colorado communities that are signing up and encouraging their residents to do the same. And we've been working with numerous

cities that have expressed interest like Denver, Minneapolis and Alamosa on how they might take advantage of the program.

It's really about understanding your customer needs and developing solutions. We want to be the trusted and preferred provider for our customers' energy needs. "Trusted" is an important word. "Preferred" is an important word. We can't – and don't – assume that we're the only game in town.

Tom Flaherty: Have you done anything differently with respect to employee incentive rewards?

Ben Fowke: Absolutely.

I've been CEO now for almost seven years. I knew I faced a generational change with half the workforce expected to retire. That's a lot of legacy knowledge walking out the door. However, I also saw it as an opportunity to rethink things. One of the things I focused on was our performance-management process.

It was the classic numeric system with everybody in the middle and it required a significant amount of paperwork. We decided to move to a new approach that does away with numeric rankings and instead provides more frequent and more meaningful dialogues between leaders and their employees.

Some people were worried that removing a rating system would keep people from sharing constructive feedback to their employees, but we've actually seen the opposite to be true, and employee engagement has increased. People want constructive feedback, giving it will deliver better performance as a result.

We also developed some new performance incentives that really focus on exceptional results and align pay with performance.

So we now offer "I Deliver" awards for individuals who do remarkable work and have saved the company money or served our customers better. Our "Innovator" awards are designed for larger teams that have really changed a process or done something special to advance our three priorities. We developed these awards to recognize and reward employees who are making a difference.

It's been really successful. To keep building momentum, I've asked people who've received these awards to be ambassadors for the program. I tell them "great win, now go and win the next one!" That's continuous improvement, that's the competitive mindset we're trying to instill. I think it encourages people to think outside the box and to try new things. I want our team to win – that's the kind of culture we need.

Tom Flaherty: Have you elevated that to an enterprise level?

Ben Fowke: Yes. It's part of our annual incentive program. Actually, our incentive program changed to accommodate these award programs, and people have embraced them.

Tom Flaherty: How do you take the next step, which is to embed employee incentivization to create a culture of innovation as opposed to a series of programs, projects, and initiatives?

Ben Fowke: That's a really good question because continuous improvement is not a program. Programs can come and go, and there are a lot of unintended consequences when people think a program won't last. What we're trying to do here is a mindset change, and the incentive programs to encourage and reward that mindset are not going away.

We want our employees to be continuous improvement ambassadors. We are using better metrics to benchmark the work and will make sure we're always highlighting the great work people are doing.

One example: one of our employees has really driven our drone program to be where it is now. We're the first utility in the nation to get FAA approval to fly beyond visual line of site. Think about the innovation and cost savings that can come from a drone program! I don't lose sight of efforts like that when we think about who the bright stars are in the organization.

The CEO and senior leaders might think 'I'm repeating myself,' but we need to do it. There is a reason why we see advertisements for Pepsi and Coke continuously.

Tom Flaherty: What kind of lessons could you impart regarding what works and what you should watch out for?

Ben Fowke: If you want to change and innovate, it has to start at the top. It starts with the CEO and the senior leadership team. You have to be in alignment.

It's not something that you can delegate to a department. I learned that when we implemented enterprise-wide systems in the early 2000s.

If you have alignment and make it a business priority, you've got a lot better chance for success. And you absolutely cannot over-communicate!

The CEO and senior leaders might think "I'm repeating myself," but we need to do it. There is a reason why we see advertisements for Pepsi and Coke continuously.

You have to have that same mind-set. Use different ways to communicate. I do it through a quarterly webcast, through blogs, and through traditional methods, like one on ones. I also find opportunities to get unfiltered feedback and get out there and make sure that the message is resonating. We do surveys, et cetera. But you just cannot over-communicate, and you have to keep that in mind. ❍

The latest Consumer Price Index report found the overall CPI, for all goods and services, rose 2.9% over the 12 months ending June. The CPI for electricity fell during the period by 0.1%. So, the real price of electricity, adjusted by inflation, fell substantially.

Connie Lau

CEO, Hawaiian Electric Industries

Tom Flaherty of Strategy& (PwC): Could you describe what you and your management team have focused on to embed innovation in your business over the last couple of years?

Connie Lau, CEO, Hawaiian Electric Industries: For context, Hawaiian Electric has innovated for many years in renewables and distributed resources. In 2008, our state adopted a forty-percent renewable portfolio standard. In 2015, it was increased to a hundred-percent RPS by 2045. And this year, we have a new carbon neutral law by 2045, plus county commitments for a hundred-percent renewable ground transportation, also by 2045. With that backdrop, many actions that people might think are innovative today, we faced three or four or more years ago.

When we first started, renewables were extremely expensive, and technologies didn't exist to integrate them and to optimize performance of the electric system. However, Hawaii's oil-based and expensive generation helped make renewables more economic and feasible in Hawaii much sooner than on the U. S. mainland.

We saw that with private rooftop solar. When Fukushima caused oil prices in the Asia-Pacific region to skyrocket, driving up our rates, the payback period for private rooftop solar in Hawaii dropped to two or three years, thanks to federal and Hawaii state tax incentives and full retail net energy metering. Private rooftop solar demand surged.

Hawaiian Electric led the industry with the integration of distributed resources, particularly private rooftop solar – no one else came close in terms of the rate of adoption and the impact on our grids. Today, thirty percent of homes in Hawaii have private rooftop solar. This all led to the creation of our PSIP, or power supply improvement plan, which calls for a further doubling of rooftop solar.

The PSIP talks about how changes in both supply and demand are needed to achieve a hundred-percent RPS, including a portfolio of different renewable generation resources and storage, as well as energy efficiency and demand response. I like to remind people that as you move to heavy renewables, because you're dealing with natural resources, it's very location specific.

For example, until the volcanic eruptions occurred on Hawaii Island in May, we bought power from a geothermal plant, which is good base-load power. But that plant was damaged and is offline now and many in the community don't want it to be reopened. You need community acceptance to be successful.

The primary sources that are coming online today are wind and solar. Thankfully, from the time of the first Hawaii Clean Energy Initiative in 2008, the cost curve for wind and solar came down significantly. That has helped us figure out how to get to a hundred-percent RPS by 2045, and what we need to do in the next five years that will be no-regret investments, even as we seek to build flexibility into our plans to take advantage of further technological innovations and productivity and cost improvements.

Hawaiian Electric Industries CEO Connie Lau talking innovation.

You have to be able to match people's dreams of a world powered by clean energy with the realities of technology and economics, and then bring them together.

The second big piece is our IGP, or integrated grid planning. IGP looks at how to think holistically about integrated electricity system planning, starting from not only the generation side, but transmission, distribution and all the way to the customer, and taking into account possible actions of third parties, including consumer adoption of new products, services and tariffs.

In the last two years, in addition to our PSIP and IGP, we've made several filings and received several commission orders. In January, we received approval for a phased demand response

program. In March, we filed our electrification of transportation roadmap. And in July, we began offering community-based renewable energy.

Now finally cost curves and technology have made renewables much more viable for everyone, but that is only the start. To really move to a new clean energy future, it's been crucial for us to work closely with our communities in very deep stakeholder engagement informed by technical advisory panels. You have to be able to match people's dreams of a world powered by clean energy with the realities of technology and economics, and then bring them together.

In addition, technology and innovation can bring our customers more choices and we all are only beginning to scratch that surface with smart homes, smart cities, electric vehicles and electrification of our economy. It's a great time to be in our industry.

Steve Mitnick: It seems like your company had to become one of the most innovative?

Connie Lau: What really led us to innovate was the surge of private rooftop solar. None of us want to be reactive. We always want to be proactive. You must get ahead of those discussions, which is what led us into the very broad-based community-wide discussions.

Utilities are used to planning everything for everybody and just laying it out there, but this new landscape doesn't allow that. We must get together with folks early on and help them figure out whether they want another wind farm or solar farm in their backyard, whether they are willing to take conservation measures that can help bring down the demand side, or whether they're going to adopt electric vehicles, which would increase the demand side. It just goes on and on, including the creation of many new market opportunities.

Tom Flaherty: How are you getting your teams to think differently about the customer experience, specifically how to redefine the right proposition for customers and demonstrate and deliver a different kind of value for service?

Connie Lau: In January 2017, we reorganized the team and created positions in areas such as electrification of transportation and marketing. Marketing includes market research, so it's really understanding what customers are willing to use, are interested in using, and are willing to pay for.

Maybe it helps us having a bank in the family of companies, because banks are another heavily regulated industry. They went through a similar transformation becoming customer-centric.

I always remember talking to the head of our corporate bank about buying a new cash management system for customers. There was one that had all kinds of bells and whistles, but we chose a much simpler product because our customers, mainly small and midsize businesses didn't see value in all those bells and whistles, and they didn't want to pay for them.

That's the same thing you see in telecom. Telecom has many different pricing and service packages, and you see that in some of the deregulated markets like Texas.

We all have to start thinking along those lines. Texas has been deregulated for a while. You would think that once deregulation started, it would spread rapidly across the United States, but we cannot forget that utilities are regulated at the state level, so it is going to be a state-by-state issue in the United States, as compared with some of the international utilities which have more flexibility.

Tom Flaherty: How do you continue to refresh the case for change as we are moving to engage the entire employee base in thinking about innovating continually?

Connie Lau: Communication, communication, communication. Our whole company is quite aware of the new areas that were created to help focus us on the trends impacting our industry and to bring us closer to our customers. If you don't want to be reactive, you've got to help inform that change. And if it's technologically based, utilities should lead, because that is where our sweet spot is.

Utilities are used to planning everything for everybody and just laying it out there, but this new landscape doesn't allow that.

One of the other areas that we completely reorganized was to consolidate technology and planning, because innovation was happening along each part of the value chain.

It was happening in generation, in transmission, in the distribution systems, and with customers, but it is all part of the same value chain. So, we reorganized to create one entry point for technology and innovation in our company so that we could really watch and integrate all possible solutions.

It's also important to recognize that we are still at the beginning of great change in our industry. Many proposed technologies are still immature, and innovations are all over the map. It's not yet clear which technologies will be the winners, and which should be applied to particular problems.

When you have a mature industry, there's much greater visibility into best-in-class solutions. When you have one that is very young, there's tons of overlapping technologies. I think that's why you now see utilities moving into the innovation space in a big way, for example with the creation of Energy Impact Partners, EIP, with hundreds of millions of dollars of investment.

Again, Hawaii was ahead of the game and we were involved with a clean energy accelerator in Hawaii very early on. It's called Elemental Excelerator and several of the companies have done well and entered other markets like California.

We were looking at a lot of the startup companies in the space very early on, and some of them proved their technologies on our

system like STEM. Their first pilot with us aggregated only one megawatt of smart storage but it led to them winning a much larger bid from Southern California Edison. That's exciting and we're very happy to be helping some of these companies

Tom Flaherty: Are there any specific capabilities you've focused on, for example, data analytics?

Connie Lau: Yes. The key to prioritization is to keep your eye on the endgame, which is, ultimately, the customer, your customer. Keep your eye on knowing what your customer base wants, and what can they really benefit from?

An easy example is EV charging. Forty percent of Hawaii residents live in high-rises. Thus it's important, in terms of our prioritization, that we look at charging systems for multi-unit dwellings.

We also have a lot of solar energy during the day. Therefore, we are looking at those technologies that can absorb that generation during the daytime, then shift it into our evening peak. Or technologies that can create more demand during the daytime which helps lower our unit cost of production and save customers money.

Tom Flaherty: Are there other particular capabilities that you're acutely focused on to develop that you believe will be necessary to succeed in your future business?

Connie Lau: Yes. When we had an enterprise-wide retreat of our senior officers last year, big data and data analytics were identified by both the bank and the utilities.

Utilities especially have a ton of data, but that doesn't really help. It's only when you can analyze the data that it's valuable. You must have the people that know how to do it, and you also must have the systems that can collect that information in a data warehouse and be able to manipulate and analyze it.

Steve Mitnick: You're probably experiencing much of your workforce getting close to retirement or retiring and with a lot of young people coming in?

Connie Lau: Yes. When you talk about changing the DNA, they're changing ours, and the nice thing is they're the same generation as a lot of the customers who actually want to take advantage of the technologies.

An easy example is, what the future of transportation will look like. In our industry we've been talking about electrification of transportation with EVs and self-driving cars. But will it just be a one-for-one substitution of EVs for ICEs (internal combustion engine cars)? Again, focus on the customer. If they're anything like my kids, customers are increasingly shying away from individually owning any vehicle, whether EV or self-driving, and opting for ride-sharing.

We grew up wanting to drive as soon as we could and have a car as soon as we could. They want nothing to do with that. They find it so much more convenient to take Uber or Lyft.

I was very heartened when I arrived at the San Diego airport and saw the big ride-sharing signs, and the names of four different ride-sharing companies, not just the two big ones that we all hear about.

Tom Flaherty: How do you build the company culture, for a future that no one's ever seen before, and the adaptability that culture needs to think differently, and faster?

Connie Lau: If management doesn't drive change, the markets don't drive change. Usually when people want to cut expenses in Hawaii, travel budgets are the first thing to get cut. That is something that we protect, because it is really important for us to make sure that our people are connected continuously to the organizations that are leading in innovation.

That is one of the reasons why we were one of the first corporate partners for the Elemental Excelerator in Hawaii, to be able to see and have access to those technologies. And we're an active participant in EPRI. We've also worked with NREL and industry disrupters like SolarCity on advanced inverter technology.

It's incredibly important to stay connected to what's happening in the industry. Not that we're going to be a leading adopter on the bleeding edge. In fact, as a smaller company, we need to be aware of what the technologies are, then consider what specifically our customers want and can benefit from to prioritize the technologies and innovations that we are more interested in.

Tom Flaherty: What tips would you give some of your peers for how to accelerate themselves down the path and avoid certain issues that you have observed?

Connie Lau: That in and of itself is not as much of a problem, because you have a much younger generation of CEOs. That has made a huge difference. I'm seeing it with company after company.

As the new leadership comes in, and it comes into an industry that is changing rapidly, they're much more open to thinking about a future that looks very different. That's the key. It's like what I was saying about EVs. The whole issue may not be EVs. It may be the sharing economy.

Look at how quickly bike sharing is coming, and it's no longer bike sharing where you must lock it up in the holder. You just leave it. And now there's sharing of scooters.

That's probably my best advice. As long as you're open to seeing a world that can be radically different, you'll be fine.

In Hawaii, that's now a carbon-neutral world with our recently passed law, and it's incumbent on all of us to figure out how to get there, whether that's with laws, regulation, policy, new innovations, new technologies, new companies, partnerships or collaborations.

As much as we've built our companies and built the economy, can we now do it in a way that doesn't harm the environment? There's a very strong bent that is driving the new economies, and if you're not open to at least trying to think that way and imagine it that way, you'll be lost. ❍