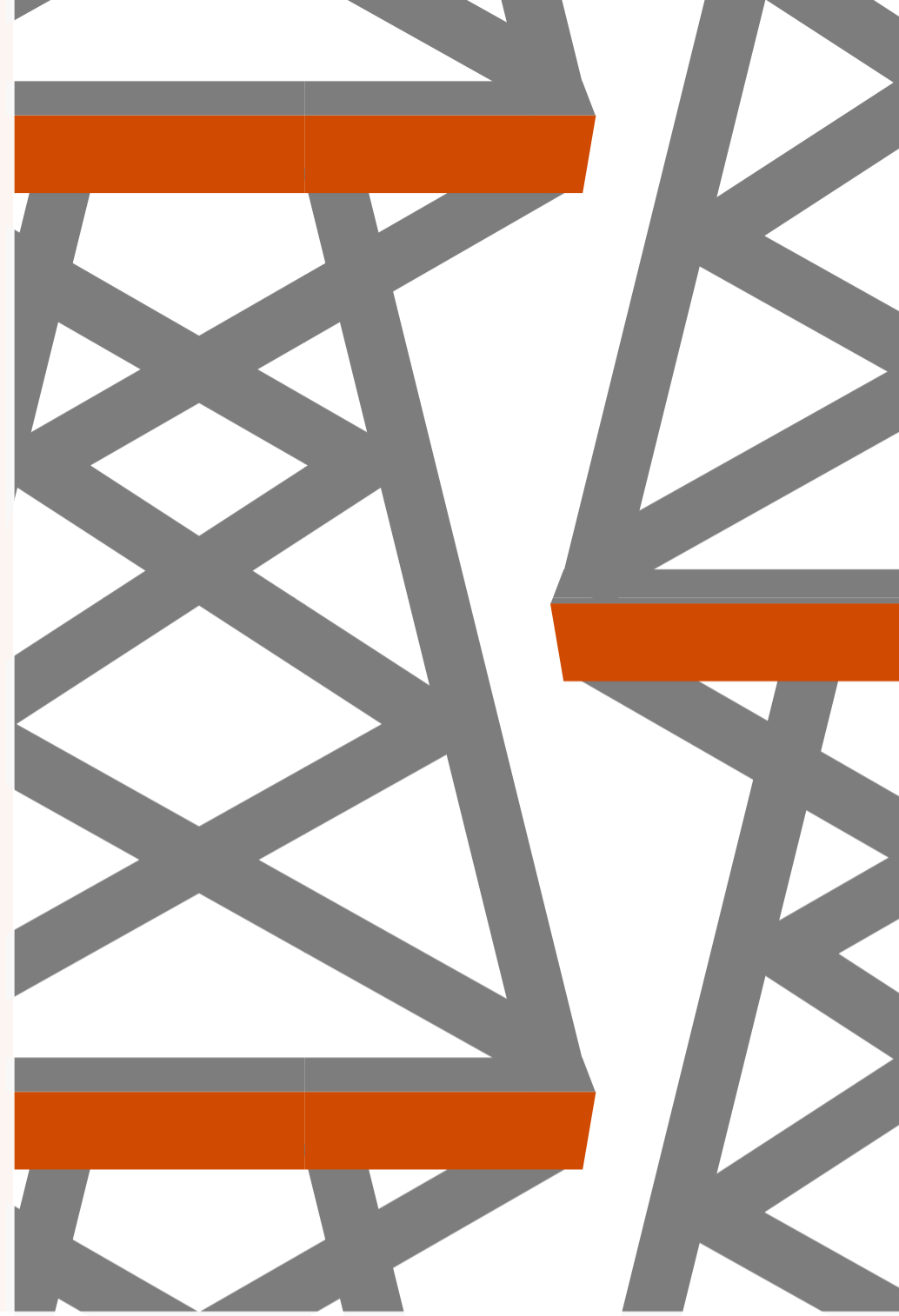


The Utility
Platform Player:
Integrating a
new energy
economy



Introduction

Electric, gas and water companies have long been operating amid changing dynamics, shifting societal preferences, evolving economics, rapid decarbonization, and physical and cyber threats, to name a few. But today, they are faced with the challenge of making the right moves to accommodate the swiftly-changing expectations of the first-ever, digital-age generation. During these sea changes in the industry, one question draws into sharp focus:

What will be the role of the utility in society, in our communities and in our marketplace going forward?

Leaders in the industry know there's a very real possibility that if they don't fortify that answer, and quickly, they'll continue to lose ground to new entrants who are eager to step in. We believe the industry holds the key to defining its own future, instead of letting external forces define it for them. It starts with embracing disruption and placing bets on new ways to be more relevant to society, in an expanded role—that of a connector and integrator. As you'll learn more about in this paper, we're calling this a move toward being a Utility Platform Player.

Connecting and
integrating as a
Utility Platform Player





Peer perspective

To get a better idea of how utilities are preparing to move forward, PwC conducted a survey of more than 130 senior power and utility professionals throughout the US working in both regulated and deregulated markets. In this *PwC Utilities of the Future Survey*¹, we looked at major areas in which we believe utilities will likely experience the most change as they become platform players going forward: customer experience, grid modernization, workforce and corporate culture, M&A activity and relationships with key stakeholders (especially regulators).

This is the first of a series of reports exploring PwC's view of the utility industry's shifting role as platform players in these spheres, as well as sharing survey findings on what utilities are thinking, feeling and doing as they enter an age of rapid role change.

¹ *PwC Utilities of the Future Survey*, released January 2019. The survey captured the responses of 133 electric, gas, renewable and water professionals in regulated and unregulated markets representing all regions of the United States. Nearly 60 percent of respondents were director or executive level.

Platform players in the era of decentralization



Industry leaders have been long accustomed to developing and operating critical national infrastructure. We believe they will continue to do so over the next decade, but the nature of their roles in the energy ecosystem is poised to evolve. We are seeing the industry shift from a highly centralized system with business decisions largely pursuing economies of scale to one that is becoming more decentralized, even atomized. While the pace of this change is certainly influenced by everything from region to regulatory environment; new energy companies and other players are undoubtedly changing the landscape. Another factor is the relatively small but growing number of customers owning their own “behind the meter” resources (e.g. distributed solar, electric vehicle charges and energy storage).

This decentralization trend will likely persist and accelerate in the future, further necessitating the evolving role of utilities as the platform from which disparate (and increasingly numerous) energy players can integrate and new energy products and services are delivered—even those not produced by the utilities themselves.

While there may be new entrants in the energy market that operate at the fringe of the utility value chain, an ineluctable fact remains: *The nerve center of our ever-changing society is powered by traditional pipes and wires.* Clearly, this critical infrastructure will require continual innovation and investment to meet the demands of the “new normal.” However, the fact remains that the traditional utility is the single and most well-equipped institution to accept and meet emerging social changes, including greater urbanization, aging populations and staggeringly swift technological advancements.

Companies not embracing this new role may risk disintermediation, by incremental degrees and over years, as new entrants exert control in new energy product-and-service markets. Those who see this role as the opportunity that it is, will be best-positioned to successfully emerge on the other side of this evolution.

Platform players in the era of decentralization

The future of the industry hinges on what companies are doing now to shift toward becoming a Utility Platform Player, or the connective tissue, enabling a decentralized, digitally-driven energy ecosystem of the future.

Choosing your playing position

Naturally, there's no one-size-fits-all path toward this future. There are numerous ways to grow as a Utility Platform Player—from continuing to foster a new customer-centric, innovative mindset and embracing new partnerships to becoming more digitally-connected across all aspects of the value chain and enabling new entrants to join the energy ecosystem. Power and utility companies have to choose where they want to play, so to speak. Where do they want to be the provider and where they want to be the enabler? As an example, some may decide to build electric vehicle charging stations, while others will only invest in the distribution system upgrades that support them. Neither choice is wrong, as different decisions may be driven by external factors such as regulator preferences, stakeholder investment and regional needs, in addition to, strategic decisions. Either path demonstrates an active decision to be more of a player in the broader energy ecosystem, making strategic bets that move the industry forward.

Utilities will place such bets while continuing as the energy economy's nerve center, relied upon to safely and securely provide critical and life-sustaining services. Even within the “table stakes” and traditional aspects of the business, innovation is still the path forward. To do this, industry leaders agree—a fundamental shift in the mindsets of key stakeholders is needed as well as the forging of new relationships and shifting of regulatory and public-policy paradigms.

Taking a platform position for your customers...and society

New way of doing business built on new customer expectations

As utilities strive to modernize the customer experience, they know they should adapt to the “new normal” of customer expectations, shaped by other industries, such as e-retailers or financial services firms. For an industry that has operated for decades as a vertically integrated supply chain providing their services on a “one-way road” to customers, changing to a more intimate, two-way relationship with customers will be driven and enabled by a myriad of new dynamics. Enabling this new relationship with customers can provide customers with the transparency, choice and control they have become accustomed to in other realms of the economy.

Companies are well aware of the new reality they face, and they understand that their previous business models are not built for a future demanding greater transparency, customer choice and tailored energy products and services. Most are taking steps to adapt, with a vast majority surveyed saying they are creating new business models to reflect these changing customer preferences, expectations and behaviors.



Taking a platform position for your customers...and society

A one-stop shop for energy customers

This new way of doing business means working with (and not against) other energy providers and being at the center (not the periphery) of newly emerging energy products and services. This can be through partnering with these entrants or facilitating greater access and choice for customers. As utilities grow on this front, customers' perception of utilities will likewise evolve, thinking of them as "one-stop-shop" for all things energy, just as the most successful platform players in other industries—such as online retail and travel platforms—have already become. This also requires streamlining every touchpoint with the customer, including the fieldworker, a key contributor to the broader experience.

Peer perspective: Listening to what customers want

Companies report hearing from customers that the following services are the most valuable:

24%

Online access to real-time and remote energy use data

23%

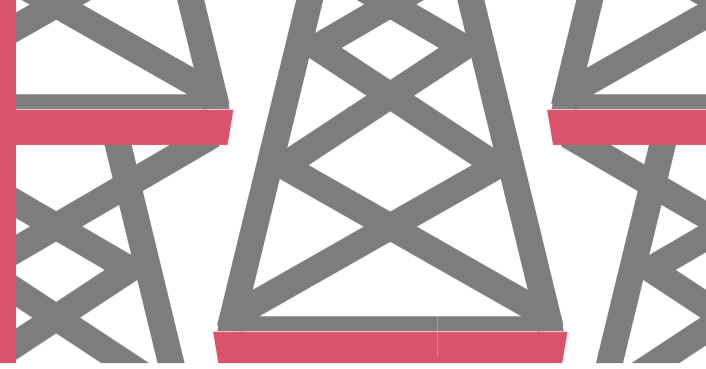
Energy-efficiency products, information and consulting

Other responses include: Distributed energy resources (15%), net metering (15%), energy audits (12%), choice and dynamic pricing of generation source (7%) and other (4%). Meanwhile, industry leaders say they face some challenges in improving the customer experience, with the top four being: Internal culture, continually changing customer expectations, funding and technology.

Source: *PwC Utilities of the Future Survey*, released January 2019. Data based on survey of 133 industry professionals.



Pipes and (evolving) wires as the backbone of a platform position



Modernizing for safety, reliability and the customer

As utilities strive to modernize, they are faced with a choice: Where to focus the attention? Looking ahead the next few years, about 60 percent surveyed plan to place the lion's share of their investment dollars on improving the distribution management network. Nearly all have already implemented advanced metering and monitoring systems (or have plans to do so). These investments can be essential to building a “digital bridge” to customers.

Meanwhile, power and utility companies encounter a tension that other industries do not: Providing efficiencies and digital advances, while, at the same time, maintaining safe and reliable service to which customers have become accustomed. So, as advanced technology is deployed—whether that be the gathering of customer energy-use data, the use of drones, or blockchain for gas integrity management—utilities will inevitably expose themselves to reliability, safety and data privacy vulnerabilities. As industry professionals report, another factor complicates the equation—that is, having a diverse set of stakeholders, including regulators.

Peer perspective: Modernization roadblocks?

To many power and utility companies, diving into a modernized future may well be much easier said than done. While 15 percent reported no challenge in implementing strategies in this area, other industry professionals reported barriers standing in the way of progressing grid modernization strategies, with these rising to the top:

35%

Conflicting priorities

25%

Regulatory hurdles

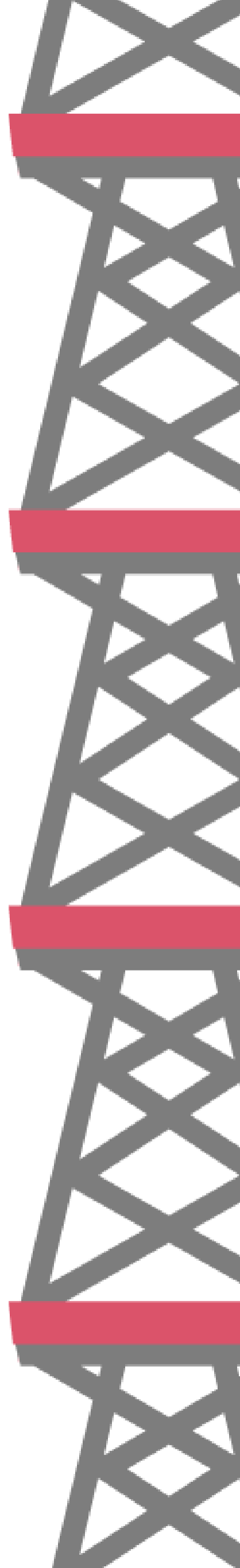
Source: *PwC Utilities of the Future Survey*, released January 2019. Data based on survey of 133 industry professionals.

Pipes and (evolving) wires as the backbone of a platform position

Electric grid platform progress

While electric grids are in constant states of upgrade and modernization, it is at the distribution level and beyond, to the other side of customers' meters, that we see the widest opportunities for companies to assume the role of Utility Platform Player and important market integrators. There is a swelling number of potential partners utilities can consider across numerous fronts at the distribution level, including residential and commercial solar, smart energy use and performance data analysis as well as behind-the-meter products and services (i.e., smart appliances, pool pumps heating and cooling systems).

Some utilities are already making strides toward becoming platform providers, especially as they modernize the distribution end of the grid. New York's Reforming the Energy Vision, for instance, incentivizes utilities to work with, not against, generators of distributed energy (via so-called Platform Services Revenues). And, by doing so, this nudges utilities into the platform role. Other utilities across the country also have grid modernization programs underway, upgrading their distribution systems to facilitate and support storage, micro-grids, community solar and electric vehicle charging infrastructure. We believe this platform-provider trend will move inexorably, by degrees, throughout the industry, provided that companies take ownership of these various platforms integral to grid modernization, and not cede control to other industries and new start-ups eager to enter the energy market.



Wanted: Strong digital and data skills

As utilities seek to broaden their roles, they are looking inward, recognizing the need to develop a workforce with the talent and skills needed to embrace what the future brings. The industry's perennial issue of an aging workforce is, likely, still concerning. Yet, for utilities taking the long view as platform players, larger cultural and skill shifts are even more top of mind. First and foremost, this will require a workforce that embraces agility and an agile approach to building new business models. Building a more agile workforce will very much be driven by companies investing in a digitally-fit talent base, either through upskilling or through targeted recruitment.

And, to position themselves squarely at the center of the expanding energy ecosystem, the skill sets of utility employees will need to be as varied and diverse as that of the new players entering the energy industry.

Peer perspective: Reshaping the workforce

Few utilities feel they currently have a workforce with the strong digital skills needed to lead the future of their organization. In our survey, just 25 percent of utilities surveyed said they have such a workforce in place, with nearly 70 percent either actively recruiting and retraining workers, or planning to do so. When it comes to the most coveted skills, there are some clear winners.

43%

Data science and analytics

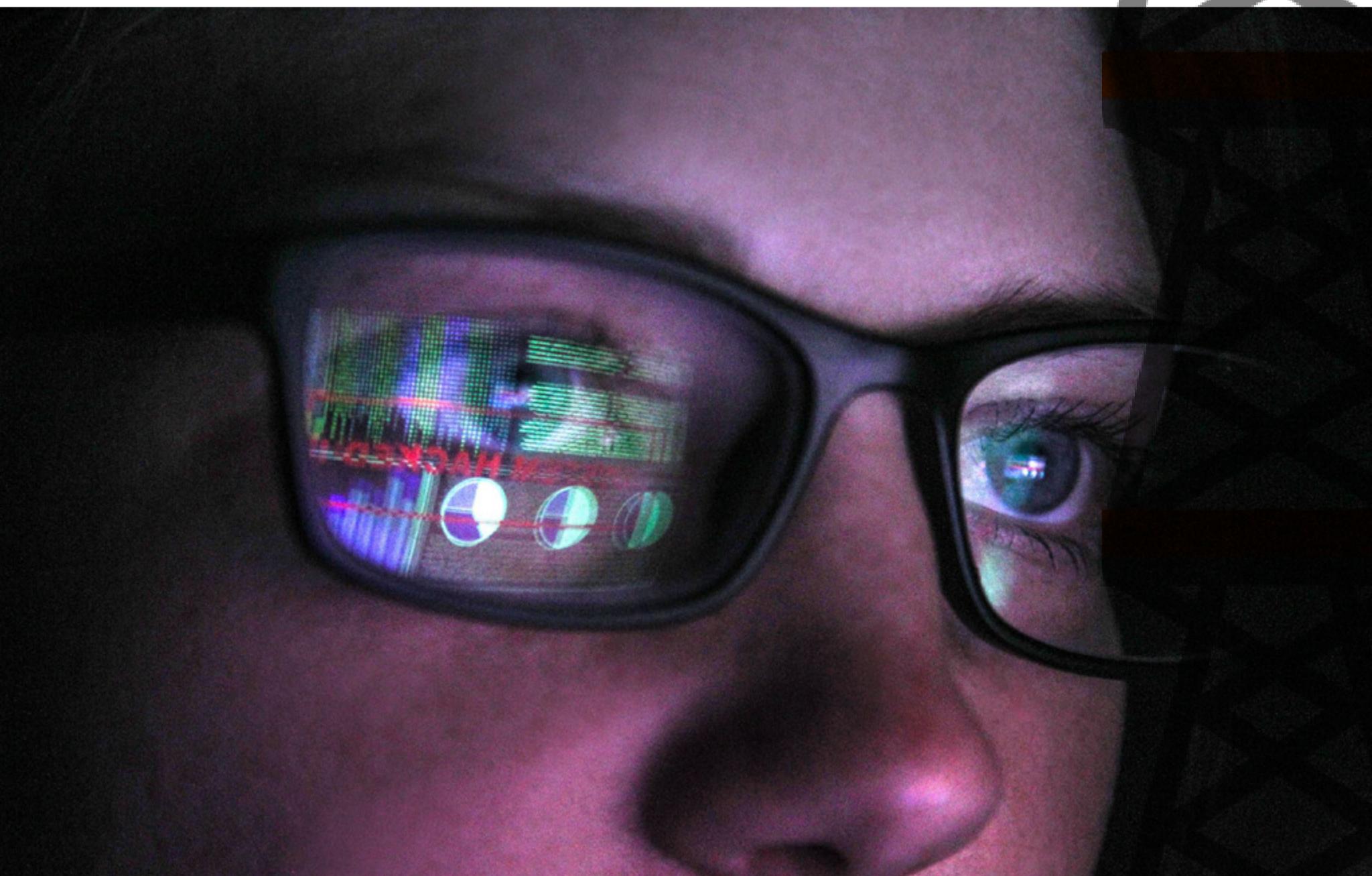
23%

Customer experience

Source: *PwC Utilities of the Future Survey*, released January 2019. Data based on survey of 133 industry professionals.

Wanted: Strong digital and data skills

While it may be difficult to change a workforce culture from within—and possibly even more difficult to change entrenched conventional perceptions of an industry—those at the leading edge are beginning to make moves in this area. This includes creating pockets of innovation within their organization by luring digital natives, piloting digital start-ups or encouraging an “alliance mentality” that supports partnering with new entrants. In future-proofing the industry, the “people” side of the equation is so vital in successfully seizing a new platform position.



Building or buying the future with M&A

The changing market dynamic has prompted utilities to take a hard look in the mirror, to evaluate asset portfolios and to determine if they are “fit for purpose.” Meanwhile, to face the realities of tomorrow, new capabilities may also be needed. Most companies don’t have the resources in terms of bandwidth and capital (people and financial) to be all things to all customers. So, they need to choose how to get there.

Key strategies that have been, and will continue to be, employed are strategic mergers, acquisitions or other business combinations to help fill certain capability gaps; and, simultaneously, perhaps, shed certain elements of historical portfolios to be more nimble for the future.

The familiar question

Most industries facing a need for transformation encounter a familiar question: Build or buy? It’s not uncommon to question whether one can incorporate new technology and ways of working organically, or whether it will be faster and easier to bring in external partners or acquire a company that has already developed the needed solutions and integrate them into the existing business. Utilities are increasingly aware of the potential of mergers and acquisitions to help add the capabilities they will need to find new revenue streams, evolve their business model and, ultimately, fill the future role as the connective tissue in an evolving power ecosystem. And, in a larger sense, utilities’ long term plans surrounding which assets and services they plan to invest in or divest from, coupled with the organic versus inorganic costs versus benefits, can also strongly drive strategic acquisitions in the short term.

Building or buying the future with M&A

Peer perspective: Stakeholder challenges

For regulated utilities, it's not always as simple as acquiring what is needed. While it can be challenging to convince board members, shareholders, employees and customers of the compelling need for an investment or strategic move; often regulators are less easy to convince. When it comes to acquiring a company with a technological solution that may be able to improve customer experience, those surveyed say they're less confident about their ability to explain the value of such deals.

84%

Face some degree of difficulty in articulating value across stakeholders

54%

Say regulators are the most challenging to convince value of tech-driven M&A

Source: *PwC Utilities of the Future Survey*, released January 2019. Data based on survey of 133 industry professionals.

Shedding the past

At the same time, utilities will continue to manage and rationalize their historical asset portfolios in order to focus on long-term strategies. This could mean focusing more squarely on discrete asset classes—such as power generation transmission, or distribution—or weighing their power generation portfolio given market economics. For some utilities, spinning off legacy assets could also mean ramping up asset portfolios they are focusing on, resulting in holding fewer, but larger portfolios—in a big bet on their future business sustainability. So, acquiring and divesting work toward the same aim: Strategically honing in on a future vision.

Final thoughts

Utilities looking to transform from end-to-end providers of energy to the connective tissue that binds together a new, technology-driven energy ecosystem face many important questions. Perhaps none is more important than how to navigate this change with key stakeholders. These will vary from company to company, but the leader of a utility undertaking transformation will need support of shareholders, customers, employees, regulators and lawmakers. Being able to confidently explain the vision of the Utility Platform Player role, and its benefits for these stakeholders, will be crucial.

While relations with key stakeholders are key, the crux of the vision of the future will be investing in their core assets—the pipes and wires—to ensure they are compatible with (and central to) new entrants in the energy economy. It means continued innovation in what they have now, while leveraging emerging technology to better connect their customers to the services and experiences they demand. The opportunity to do so is especially urgent given the chance utilities have to shift from a linear model that encompasses everything from production to delivery, toward a new paradigm of connection to an ever-evolving ecosystem of services. But the current regulatory environment isn't always accommodating.

Peer perspectives: Road to stronger relationships?

In our survey, utilities voiced concern over the prospect that their relationship with regulators will not evolve fast enough to meet their strategic needs.

68%

Say relationship with regulators will need to change

40%

Have strategies in place to bolster support

Source: *PwC Utilities of the Future Survey*, released January 2019. Data based on survey of 133 industry professionals.

Final thoughts

Utilities and regulators can future-proof the industry...together

Coming to grips with the challenges that emerge when new technology and existing regulatory structures collide should be a top priority for utilities. Unregulated competitors from outside the utility industry—think well-capitalized tech giants and nimble startups—are competing more aggressively to help customers meet their needs, whether that’s renewable generation or a better user experience. Without regulators who understand that challenge and are willing to help foster innovation, utilities run the serious risk of disintermediation and loss of relevance for their customers. But the fall-out ensuing from such a collision could be more pervasive. It’s important also to consider that the potential to improve service (and trust) could be constrained in such a scenario—not to mention regulators’ ability to govern a constellation of new, important players entering the industry.

Utilities, then, should consider developing a comprehensive strategy to shift the conversation with regulators toward enabling 21st-century solutions. One important aspect of such a strategy should be building consensus among rate-case intervenors, who can help influence public utility commission decision-making. Customers can also be helpful allies in that effort, if harnessed correctly. But, resisting the change is not likely to be a successful strategy. The competitive terrain is already shifting.



Get in touch

We'd love to hear your thoughts on the path you see your company taking in the years ahead. You can reach out to us at any time.

Authors

Michael (Casey) A. Herman

US Power & Utilities Leader, Partner

(312) 298-4462

michael.a.herman@pwc.com

Jenny Koehler

US Energy, Utilities and Mining

Advisory Leader, Partner

(415) 498-7488

jennifer.koehler@pwc.com

Visit us: pwc.com/us/utilities