

# *Customer engagement in an era of energy transformation*



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# Introduction

*Technology is eclipsing competition as the biggest single transformational force affecting customer relations for power utility companies. It's shifting customer expectations of what to expect from companies. The online experiences customers are becoming used to in areas such as retailing, travel and media are setting a new norm, raising the standards expected for baseline aspects of a utility's operations such as metering, billing, payment and outages. And, when combined with developments in device and building automation as well as energy management, this is opening up new opportunities for customer service, added value and new business streams.*

At the same time, developments in power technology in the form of storage and self-generation are eating away at revenues and growth. In the past, the biggest challenge was losing customers in markets where competition enabled them to choose power from different companies. In the future, regardless of competition, the challenge will come from customers having less need of traditional utility companies for their power. In the past, only big industrial customers were likely to develop their own energy solutions. Now that ability is extending to many more customers.

The double whammy of transformation coming from both digital technology and power technology amounts to one thing – empowerment of the customer, whether it is business or residential customers. And it's as relevant in regulated monopoly markets as in open competitive markets. The same technology and customer expectations are there and the direction of travel is the same. They have the potential to disrupt the market in even greater ways than competition has – carrying disruptive force even in markets where the customer remains captive.

What are the implications for power utility companies and what can they learn from other sectors? The starting point has to be the strategic context and why it is making customer engagement more important than ever.

We discuss how the energy ecosystem is evolving and the implications for customer strategy. We consider how customer services expectations are changing in a tech-savvy world. We look at what it will take to address the customer of the future. We explore different customer situations and discuss the implications for the value propositions and capabilities that power utility companies need to develop. And we conclude the report with big questions companies need to address if they are to successfully develop these capabilities.



A handwritten signature in black ink, appearing to read "Norbert Schwieters".

**Norbert Schwieters**  
Global Power & Utilities Leader

# **Strategic context – why customer engagement is more important than ever**

*New expectations and new possibilities are combining to shift the wider strategic context and the customer context in which power utility companies operate. These are coming from a number of different directions. Regulatory expectations are changing – with far-reaching energy transformation policies in some countries and significant momentum gathering in others. Business models are changing and becoming more customer-centric and reliant on customer interactivity. Customer expectations are changing as more and more the immediacy, ease and control of wider online digital retailing sets the standard. And all these changes are being underpinned by technological innovation that is transforming people's power choices and the way the energy system can be managed.*

## ***Disruption is putting customer-relevance centre-stage***

New technological possibilities have the potential to transform the way people think about, produce and use power right across the range of world contexts – from developed countries where electricity has been available for more than a century to the poorest communities with no access to the grid. And developments such as self-generation and battery storage are disruptive whether or not competition between utilities is a feature of the market.

The combination of policy, technological and customer change is leading to disruption of the traditional power utility business model. In some parts of the world, disruption is already taking a strong hold.

In other parts of the world, it is just beginning. Within the next decade we anticipate that step-change will occur in at least some of the key disruptive technologies – grid parity of solar distributed generation (already reached in some jurisdictions), lower cost mass- and micro-scale storage solutions, vibrant and secure micro-grids, attractive electric vehicle options and ubiquitous beyond-the-meter devices – and this view is backed up by that of leading power utility companies worldwide, as reported in our latest survey of industry thinking.<sup>1</sup>

In such a context, customer and asset relevance is everything. Power utilities cannot afford to be seen as having dwindling or marginal relevance to the customer or being left with the wrong set of assets, technologies or capabilities. The business models and the operational focus of many companies in the sector are changing in response. In broad terms, companies are moving beyond asset-based strategies to focus much more on solutions for customers.

In many markets load growth is expected to be minimal in the near future so companies need to find new sources of growth and revenue. In all markets, future capacity will be less centralised and more distributed, with customers often directly involved in their own energy generation. Residential and small commercial customers are seeking a greater degree of choice, collaboration and convenience.

<sup>1</sup> 14th PwC Global Power & Utilities Survey, A different energy future: where energy transformation is leading us, 2015.

Large commercial and industrial customers are wanting to get the benefit of better solutions for energy control and communications. And everywhere this is reinforced and amplified by the development of 'beyond-the-meter' technology and the 'internet of things'. In this new environment, power utilities have to successfully shift customers' perceptions so that they are seen as active partners and providers of services and solutions, not just as commodity energy suppliers.

Industry pundits consistently call attention to the need for utilities to embrace a different business model in the future. However, the notion of a single new business model does not reflect the requirements of the future market. The utility industry will need to become agile at living within multiple business models as the current traditional model is not being wholly displaced; rather, it is being complemented by new positioning and pricing models that reflect the future shape of the market, realities of competition and the preferences of customers.

Successful companies will frame their 'go-to-market' strategies based on market foresight rather than simple backward-facing insight. They will be adept at converting market knowledge and intuition into strategies that signal a differentiable customer experience, as well as produce enhanced revenue streams and an expanded customer relationship.

## Viewpoint

### ***Changing your mindset and way of working***

Cindy Kroon  
Vice President Customers B2C  
at Nuon, part of Vattenfall



*Cindy Kroon has more than 15 years' experience of improving customer experience for large organisations, first as an external consultant and, since 2003, as part of the Nuon family. In her current role she is responsible for the entire value chain of household and SME customers of Nuon, from marketing and sales to service.*

The change in the energy market is happening all around us. Energy consumption is decreasing because of energy efficiency and decentralised generation. Technology and digitalisation are not only driving new business models, they are also changing our traditional commodity marketing and sales business. In the digital era, customers have different benchmarks. Although Google, Uber, Airbnb etc. are not direct competitors, they very much set the scene for customer expectations. It is our challenge to understand these customer expectations and respond to them.

We won't be able to dictate what the energy world will look like, but we will take a proactive role to help shape the future together with our customers. In order to do that, we have to break the silos between marketing, sales, service and process management and create a true customer-centric organisation, in which the customer experience is central and we are able to quickly respond to changing needs.

Over the past year Nuon has been working very hard to make this shift, and we're now beginning to see the results. Our new organisation is focused on making sure our customer is in good hands. We are, therefore, organised around two core customer journeys – becoming a customer and being a customer. The cross-functional customer journey teams are controlling the full customer experience, and working every day to improve it. The 'journey teams' are striving, not only to functionally meet, but to emotionally exceed customer expectations, thereby creating a sustainable relationship. They are supporting world-class performing operational units in the area of marketing operations, sales operations and service operations.

The key here is to accept and understand that this change is much bigger than just a new organisational design. It's a change of mindset and way of working. Customer focus should not be something we 'do', but should reflect who we 'are' and drive everything we do as a starting point. Responding to changing customer demands requires flexibility and agile delivery teams. Following on from our organisational change, we have also established a substantial programme to embed a 'customer first' mindset and agile way of working, both in our leadership and our processes.

And although we're certain that it will not be an easy ride, the prospect of being the energy provider of choice, both now and in the future, gives us all the energy we need for this journey.

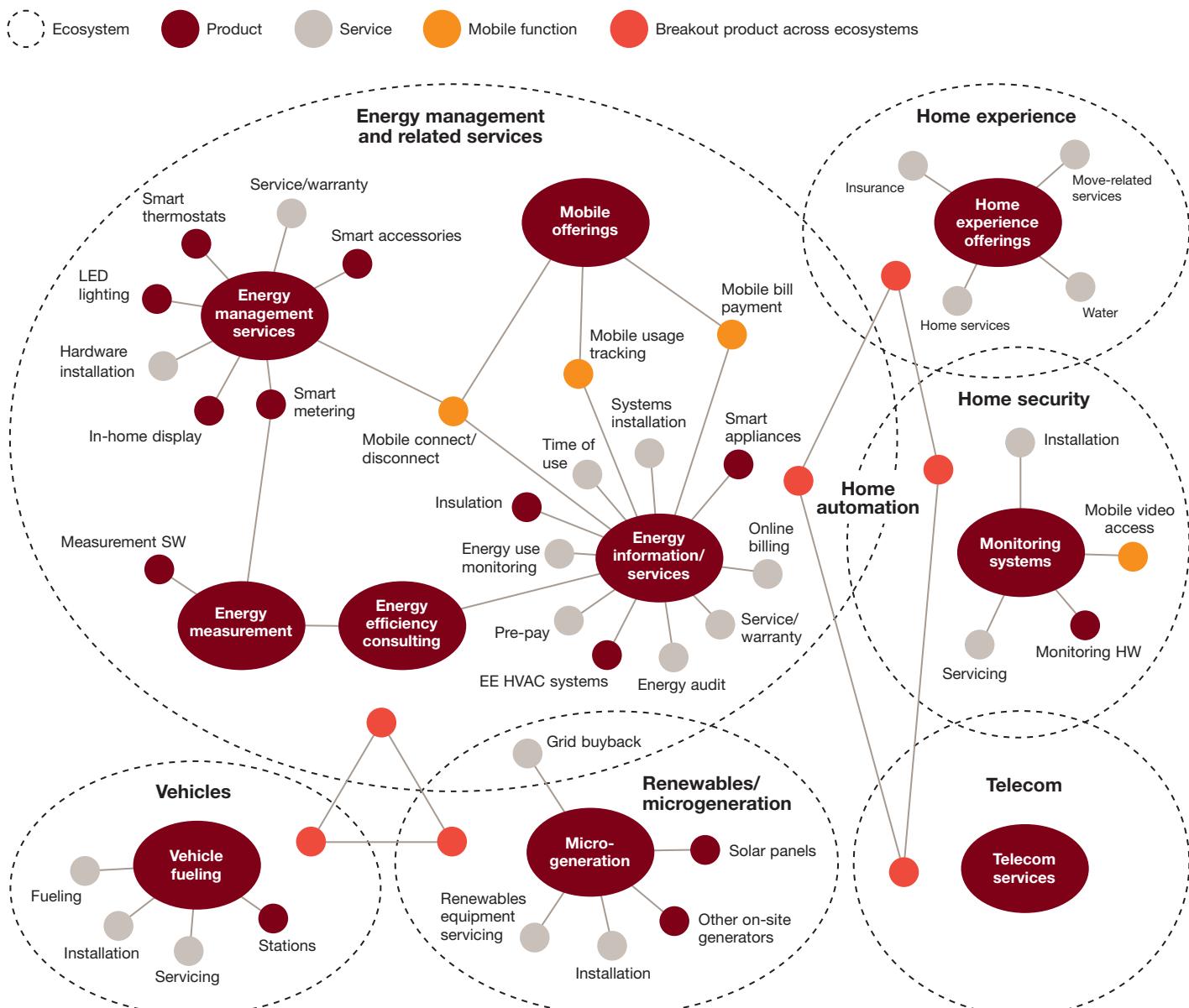
## A more complex energy ecosystem is emerging

Developments in power technology and home automation mean that the relationship between the customer and the way they manage their energy is now more fluid and far-reaching. Customers have choices around generating, storing and trading their own electricity as well as about energy management, efficiency, automation, monitoring and control. And, as figure 1 shows, the 'energy management and related services' ecosystem is just one of a number of overlapping ecosystems covering areas such as home services, security and electric vehicles.

The danger for the power utility retail model is clear. Utilities' retail component could be subsumed into other large-scale retail engines such as data service providers and other in-home services including telcos. There may be many more suppliers of energy, some with retail front-ends and some without, including third-party brokers such as we have seen emerge strongly in sectors such as insurance, travel and hotels.

The battle is already on to own the 'connected home', with companies from the technology, entertainment and telecoms sectors seeking to gain customer traction. Google, Apple and Samsung have all made moves in this space with their Brillo, HomeKit and SmartThings initiatives. They face competition from internet entertainment and telecoms companies. For example, Time Warner Cable has developed its IntelligentHome customer offering and Telefónica has announced plans to bring a trial of US carrier AT&T's connected home platform, Digital Life, to Europe.

Figure 1: The dynamic and complex energy ecosystem



In the new world where the digital assets of the utility sector connect to the customer's digital assets, the retailer's relationship with the customer also begins to be eclipsed as many benefits of digital interactivity, such as demand response, will flow from assets further up the energy value chain. The supplier or retailer's interactions with the customer for the provision of energy and related services do not require the same intensity as the minute-by-minute interaction that may be needed by the grid with the customer's assets. This is a significant shift for grid companies. Unbundling in many markets has meant they are purely asset- and system-focused but, if the future develops in a way where the management and sustainability of the grid requires a partnership between customers and the grid, they will need to have a strong customer interface, either directly or through intermediaries.

In the connected home and the wider and more complex energy ecosystem, power utility incumbents are unlikely to be able to possess a complete portfolio of capabilities to meet customer needs. Even in instances where they have a wide portfolio, they might determine that market opportunities (and market position preservation) are best enhanced through an extension of relationships.

In such situations, forming external partnerships and alliances is likely to be an important strategy in recognition that the energy ecosystem is broad, interconnected and complicated to navigate. In other situations, they may decide that the best value strategy for them is to remain largely focused on excellence in their existing core product.

## Viewpoint

### ***You need to be obsessive about customer experience***

Stephen Mikkelsen  
Executive General Manager Energy Markets  
AGL Energy



*Stephen has over 20 years' experience in senior positions in the Australian and New Zealand electricity markets. Prior to being appointed to his current role, Stephen was Group General Manager Retail Energy, where he had overall responsibility for sales, marketing, and servicing AGL's 3.7 million residential and small business gas and electricity customers. Prior to this, Stephen served as AGL's Chief Financial Officer for six years.*

Engineers and economists developed the contestable Australian electricity market in the late 1990s. Put simply, the primary goals were to maintain a reliable electricity system while also ensuring competition between power stations and competition between retailers. Judged by these goals, you would have to say the Australian market has worked pretty well.

However, in establishing the market, customer experience was largely ignored. The world has moved on and so too have customers' expectations. They want so much more than just a competitive market. They want a customer experience that matches their needs, wants, and desires. What's more, providing the best experience in the energy industry is no longer good enough. Customers now have common digital interfaces (such as smart phones) that encourage them to compare their experiences across products, services, and industries.

To be truly customer-centric you must start by obsessing over customer experience. If there was only one change you were allowed to make it should be to relentlessly design your systems, policies, procedures, and processes from a customer's perspective. This can be quite sobering as you realise how much these things are biased towards solving internal problems and not towards providing a great customer experience. At AGL one of our mantras is "make it easy". Importantly, make it easy for customers and employees. And the good news is, more often than not, we find simplifying a process or a policy to make it easy for customers is also the most efficient and, almost by definition, the lowest cost.

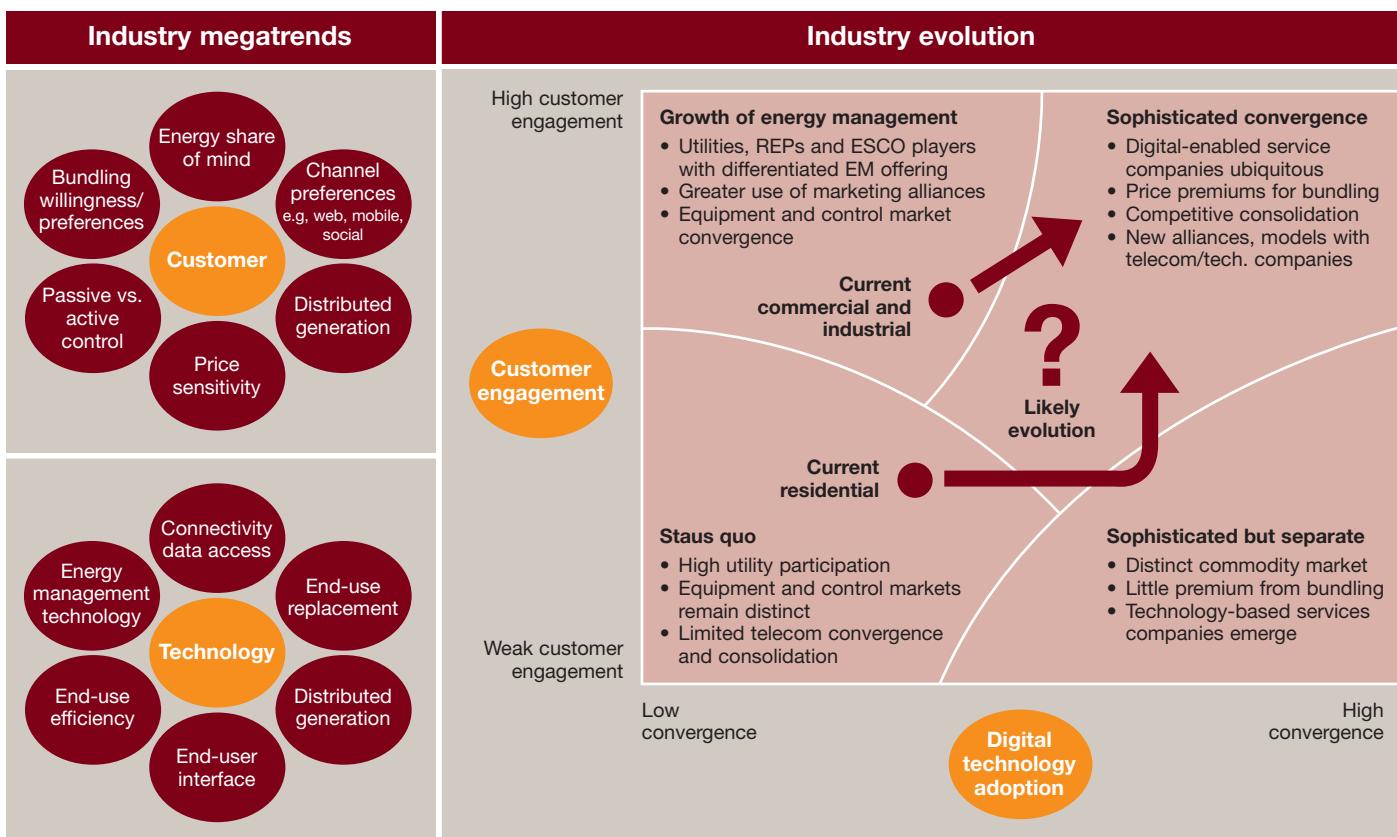
The ‘time factor’ is crucial for the strategies that power utilities choose to adopt. How fast is this new ecosystem becoming relevant in the markets in which they operate? And what are the different timelines for the various challenges that will arise? It is still early days in the battle for the connected home and the potential relationships and opportunities that will arise from automation and the internet of things. But other developments, such as solar PV, are well advanced. One customer challenge that is already very real for companies is the battle to keep current customers. Developments such as solar PV provide the opportunity to reinforce relations with existing customers. But they can also be disruptive, leading to increased customer churn as customers become more energy-engaged and decide to review their supplier arrangements.

Looking ahead, the future evolution of the energy ecosystem remains highly uncertain. The extent of customer engagement, digital technology adoption and the degree of convergence across technology, telecoms and internet sectors will be key determining factors (see figure 2).

In a future world of high customer engagement and high convergence, both the residential and C&I markets move towards a very different future where new alliances across sectors and sophisticated offerings from digital-enabled energy services providers become the norm.

In a weak customer engagement/low convergence world, which is broadly where most residential energy markets are currently, power utility companies remain the central players and equipment and control markets are separate. In contrast, though, many parts of the commercial and industrial (C&I) customer segment are already highly engaged. There is already a degree of convergence with the equipment and control markets and power utility companies face competition in energy management services from energy services companies (ESCOs).

**Figure 2: Customer engagement and technology adoption will undermine the future industry evolution**



## New market positions need to be developed

Incumbents and new entrants alike are asking themselves how they intend to position themselves in this evolving energy system, i.e. the 'role' they will play in market development, customer engagement and business execution.

Companies have distinct options ranging from 'passive and market-following' to 'innovative and market-making'. Whether they are setting the innovative pace or moving at a slower speed, they need to be sure that today's customer service foundation enhances existing business benefits while providing a strategic platform for future role evolution.

The transformation of telecoms companies from fixed line providers to multi-offering mobile, internet and entertainment companies over the past two decades provides an insight for the type of transformation journey that could lie ahead for power utility companies. Many new entrants came into the sector but the incumbents who stayed successful played to the strength of their fixed line infrastructure. They widened their technology and product offer, building on the advantages of assurance and reliability that came from the physical phone line service to develop adjacent and relevant propositions to customers.

Power utility companies are able to play to similar strengths. Being the incumbent provider of the grid connection with the security that brings to customers gives them a strong central position in the new energy ecosystem on which to develop relevant new and wider customer propositions. Their experience in and access to energy trading and energy infrastructure are key to many services. And it is logical to see them having obvious advantages as providers of power technology such as generation, storage and control devices.

### Viewpoint

## *Wait and see is not an option*

Joseph Nigro  
CEO, Constellation and  
Executive Vice President, Exelon



*Joe Nigro leads Constellation, Exelon's Corporations competitive retail and commodities businesses. Exelon Corporation is America's leading competitive energy provider, with one of the cleanest and lowest-cost power generation fleets. Exelon's competitive integrated business model provides it with a platform to pursue a broad range of opportunities as changing consumer behavior, rapidly evolving technologies, challenges to grid integrity and continued industry consolidation transform the industry.*

When it comes to innovation, a wait-and-see approach is not an option – unprecedeted market conditions, technological advances, and the rapid increase in the installation of distributed generation have changed the energy landscape.

As a strong advocate of customer choice and innovation, Constellation supports customers who embrace distributed generation and other technologies to take more control of how their energy is produced and supplied. Through our distributed energy business, Constellation owns and operates more than 350 megawatts of on-site generation, including solar, fuel cells, and cogeneration for commercial and government customers throughout the United States.

For us, the path forward lies in a balance of grid power, centralised generation, smart solutions, and distributed technologies, as well as the ability to blend products, technology, and strategies at all levels into the energy mix. Our products and services have evolved along with customer demand, and we continue to focus on offering customers a variety of services while ensuring they have an effortless experience. More recently, we've partnered with customers on energy solutions, such as battery storage and biomass-fueled cogeneration, that meet their budget and sustainability goals.

We envision a future where new customer-sited technologies coexist with the centralised generation and delivery systems. By embracing technology and leveraging it to improve operations and develop new businesses, our industry can effectively respond to changing consumer expectations, improve reliability, transition to clean energy, and lay the groundwork for a truly modern, integrated grid, all while continuing to focus on our customers.

In Australia, for example, AGL Energy has become the first Australian energy retailer to launch a battery storage device into the Australian market, as it shifts its business strategy onto the different ways customers use and manage energy. The company has traditionally pursued a classic 'gentailor' business model of vertical integration. But in its latest annual report it asserts that "the categorisation of a gentailor is not something that should define AGL. Rather, our new business definition is to 'harness insights to enrich the customer's energy experience.' In this way, everything we do is centred on the customer and the interaction they have with AGL around their energy use."<sup>2</sup>

This shift in market positioning and the pursuit of new revenue streams will not be easy. Being the incumbent energy provider can be a weakness as well as a strength if customers associate their power utility with 'old energy' rather than 'new energy' services, perhaps because of past deficiencies in service or simply because new rival offerings seem more attractive. Companies will need to be adept at combining the assurance that comes from being the traditional supplier with the innovation that will be needed to fire customer imagination in an energy-transformed world.

And across the board, regardless of the nature of the products and services that are developed, companies will need to be better at making customers feel in control and ensuring interaction with them is as simple and easy as possible. We outline in figure 3 the questions companies need to address as they develop the customer service offering of the future.

## ***Customer behaviour is changing***

The challenge of developing new market positions is all the greater because customer attitudes are evolving. Their approach to energy is changing because of new tools at their disposal. In the past, they were relatively disengaged, only seeking to interact with their energy company when there was a problem. Now some are generating their own electricity or getting involved in monitoring and managing their energy through new control and automation devices. That would all be good news for the customer opportunity in front of power utility companies but, in many cases, this new market is being addressed by other suppliers. The incumbent utilities are often not the companies that customers are turning to for these new forms of energy engagement.

**Figure 3: Customer transformation – key questions for utilities**

<b>Over the next ten years the utility customer...</b>		<b>Key questions for utilities</b>
	Will be digital, connected, and social	<ul style="list-style-type: none"> <li>• Social media</li> <li>• Mobile connectivity</li> <li>• Smart meter-enabled</li> <li>• Big data</li> </ul> <ul style="list-style-type: none"> <li>• Are we prepared for the connected, mobile customer?</li> <li>• How do we better engage with our smart meter-enabled customer?</li> <li>• How will we manage and extract insights from an avalanche of data?</li> </ul>
	Will demand – and receive – greater choice	<ul style="list-style-type: none"> <li>• Choice of energy supply</li> <li>• New products and services</li> <li>• Payment options</li> <li>• "Green" choices</li> </ul> <ul style="list-style-type: none"> <li>• What options and choices – energy supply, green solutions, payment options – should we make available to our customers in the future?</li> <li>• What new products and services should we offer, and how do we innovate, manage, and build a portfolio of services?</li> </ul>
	Will be empowered with information and the ability to self-manage energy usage	<ul style="list-style-type: none"> <li>• Self service</li> <li>• Instant information access</li> <li>• Tools and guidance to manage energy usage</li> </ul> <ul style="list-style-type: none"> <li>• How will the customer of the future interact with us?</li> <li>• How do we provide instant access to information that our future customers will expect and demand?</li> <li>• What tools should we make available to empower our customers?</li> </ul>
	Will demand a better overall experience	<ul style="list-style-type: none"> <li>• One-to-one engagement</li> <li>• Customer satisfaction</li> <li>• Customer loyalty/defections</li> </ul> <ul style="list-style-type: none"> <li>• How do we deliver an experience that is on par with other services our customers enjoy?</li> <li>• How do we improve brand health as our customers' needs change?</li> <li>• As customers have more alternatives, how do we drive loyalty?</li> </ul>
	Will adopt technologies that will impact the energy infrastructure	<ul style="list-style-type: none"> <li>• Distributed generation</li> <li>• Net metering</li> <li>• Electric vehicles</li> <li>• Smart devices</li> </ul> <ul style="list-style-type: none"> <li>• As customers adopt new technologies, how do we ensure we can meet demand and maintain service levels?</li> <li>• What is our strategy for smart energy technologies?</li> <li>• What is our play (if any) "behind the meter?"</li> </ul>

The behavioural challenge that comes from new tools also applies to switching suppliers. Because energy has traditionally been a low interest/low engagement commodity purchase, companies have been able to rely on significant levels of customer inertia in liberalised markets. In the UK, for example, where markets have been open for a long time, a recent state of the market investigation found that switching rates have shown a falling trend from 2008,<sup>3</sup> despite persistent price differentials and potentially large savings from switching.

But now, new online and digital tools are making switching easier. Combined with the heightened energy awareness that comes from things such as solar PV and smart home devices, this means that customer churn could be a greater threat.

Expectation of good customer service is becoming much higher because utility customers are having good customer service experiences with many other companies. They can order almost anything online and have it delivered practically the next day, they can receive call backs when someone is ready to assist them rather than waiting on hold, and they can text their order to a restaurant before they even arrive. Customers expect the same level of service from their utility.

Technology is fast changing the way customers interact with businesses and with each other:

- Social media – is enabling a two-way conversation with mass appeal.
- Smart mobility – the ubiquitous nature of mobile devices means that customers are always connected.
- Analytics and big data – are changing the ways in which organisations inform strategies, but also in how that insight can be passed back to customers.
- ‘Set and forget’ services – using technology that covers things such as monitoring of rates, usage, energy efficiency and real-time billing plus automatic rate-switching when rates change.

## Viewpoint

### *The importance of innovation, culture change and collaboration*

Sanjay Kumar Shukla  
Managing Director, MP (Madhya Pradesh)  
Power Management Co Ltd  
and Chairman, MP Discoms



*MPPM is the main power distribution and retail company in Madhya Pradesh, India, serving more than 12 million customers and businesses.*

**PwC:** The power & utilities sector doesn't have a strong reputation for customer innovation yet innovation is likely to be an important aspect of future customer success. How can the sector innovate better?

**Sanjay Kumar Shukla:** The Indian power distribution sector continues to be dominated by government-owned utilities with an inertia to change. To increase our reach, we've linked up with banks for payments through ATMs and ATP machines in all big cities in the state, introduced online payment and gateways, 24/7 customer care centres and a very simplified new consumer registration process. However, I still believe that areas like customer data management, customer service etc. call for faster innovation. The current level of customer service can be taken to the next level by use of 'big data' analytics which can help the utilities develop tailor-made services for consumers. It's also important to develop applications which allow customer to manage and be in control of their requirements.

**PwC:** The need to shift from an engineering-oriented culture to a customer-centric culture has long been discussed but barriers to this shift still seem to persist. What are the big 'must change' issues that companies in the sector need to confront?

**Shukla:** Given the technical nature of the sector, it has been primarily dominated by engineers. This has resulted in the focus being more on the operational aspects of the utility rather than customer-centric services. This cultural change is a must for the utilities and thus it is important to have a distinction between utility operations and customer service. One of the ways this can be done is by having a separate department of trained staff focusing on regular customer needs and service, while the high-value consumers should be serviced by a separate dedicated department with both technical and customer care officers to better appreciate their issues.

**PwC:** In tomorrow's energy ecosystem, external partnerships or other types of collaboration are likely to be increasingly relevant. What's your perspective on the types of new collaborations that are likely and what will determine success?

**Shukla:** I see partnerships coming through technology. The growing role of such partnerships is not only inevitable but is also urgent as utilities try to transform themselves to become more viable and competitive. We should learn from the success of partnerships of IT giants with the telcos and for smart grid technology, which have given a cutting edge to their businesses. An integrated IT platform would not only enable better use of data but also enable convergence of behind-the-meter technologies and mobile-based applications.

<sup>3</sup> Office of Fair Trading, Office of Gas and Electricity Markets, Competition & Markets Authority, State of the Market Assessment, March 2014.

## Customer trust and interaction

In today's digital ecosystem, organisations operate in a world that is highly connected, with customers, suppliers and partners all able to collaborate together to achieve customer outcomes. 'Always on' customers have expectations of up-to-the-minute information and advice placing more power in their hands. Increasingly, customer expectations are based on their experience of the ease of interaction with other organisations and they expect to be able to have an effective and efficient digital platform at their fingertips. Being able to get information and manage their account online is now a minimum expectation for most customers.

Generation Y, or 'digital natives' as they are sometimes referred to, naturally expect a rich digital experience that is both mobile and social, and seamlessly integrates their interaction with companies with their digital lives. This group represents a highly important customer segment for utilities, as they are starting to reach the peak age of consumption and will be an important source of value for banks. As Generation Y 'grows up' with digital, it will be more important for banks to match their digital expectations.

Against this background, power utility companies will need to work hard to deliver the building blocks of good customer engagement – making things simple and fast for customers, personal and truly value-adding (figure 4).

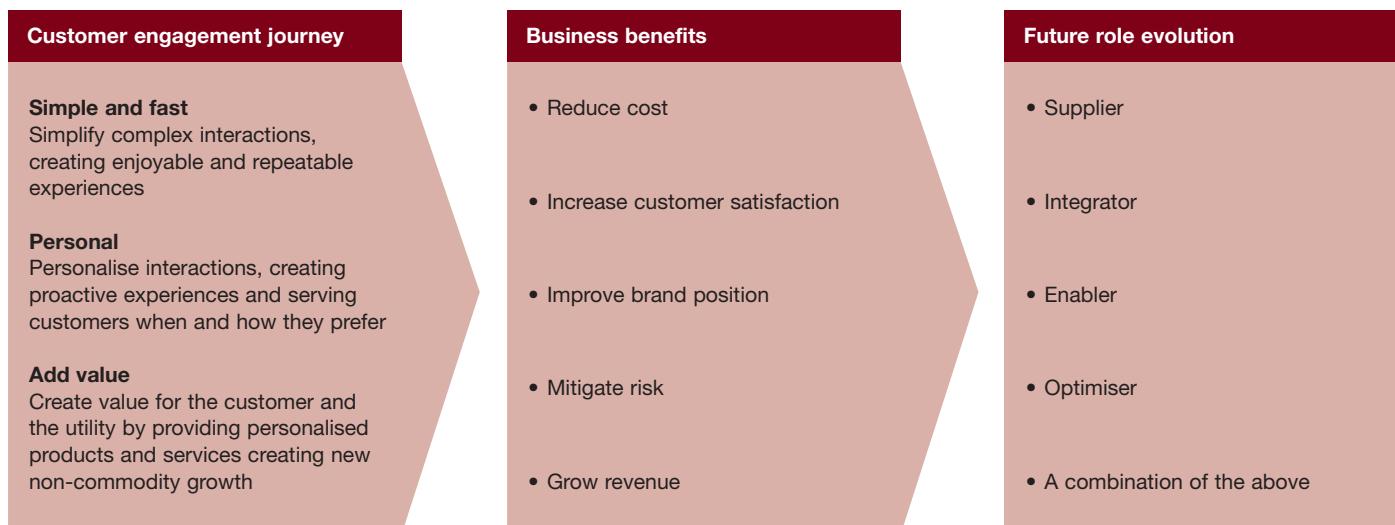
Energy is by its nature a key public trust issue. More than in many other sectors, firms in the power sector depend on the political context for their licence to operate and public trust in their activities is a big factor. Safety and the availability of power are 'make or break' matters for everyone. The cost of power is an important element in household budgets as well as business and industrial competitiveness. So it's inevitable that the activities of power utility companies are never far from the centre of the public and political spotlight.

In a period of disruption and energy transformation, trust becomes even more significant. Smart energy systems expand the range of issues on which utilities have to demonstrate trust – data confidentiality and security come to the fore alongside the traditional issues of safety and reliability. The era of smart metering, beyond-the-meter devices and greater connectivity means companies need to respond effectively to concerns around cybersecurity, privacy and the use of data.

Companies have, in general, been successful in elevating safety to the status of a non-negotiable priority. They will need to match that with their approach to cybersecurity and data. There is a great amount of trust invested in power utility companies. Companies need to ensure that they build on that and don't have it eroded. They can and should play a proactive role, in dialogue with the different regulatory authorities, to ensure that the overall design of new energy systems maintains public trust.

Those companies that have stored up a positive bank of trust are potentially in a strong position to use that to establish trust in new energy systems. If they are trusted by the public then they are likely to have a competitive advantage but this needs to be combined with the successful implementation of a strong, digital-enabled customer engagement strategy. In a time-constrained, budget-constrained, media-saturated world, customers gravitate to brands they can trust for good value, great quality and ideal experience. But, if they get frustrated by difficulties in interactivity, they are likely to ditch trust in familiar brands in favour of the responsiveness and ease of service from competitor brands.

Figure 4: Matching customer engagement to future utility role evolution



## Talking point



### **Monetising the smart home and smart building opportunity**

Some smart consumer technology can seem like a solution in search of a problem that doesn't really exist. Will that many consumers really care that they can shave a fraction off their energy bills by using a new home automation gadget? Or that their internet fridge can alert them as supplies run short? And, crucially for players in this space, how can this smart home and building technology be monetised?

Back in 2000, LG launched the world's first digital, web-enabled fridge. The advantages, and crucially the price point, failed to fire the imagination of consumers. Eleven years later, LG thought the smart phone era might make the time right for an updated model. This time it came with, among other features, the ability to manage the appliance's power consumption with late night saving, 'preferable time' saving and smart grid-ready modes. But, as we move closer to 2020 than 2010, the internet fridge remains largely hype rather than reality.

### **Customer relevance**

Few would expect power and home management technology to be as high on popular touchscreen priorities as chat, social or even weather apps are. And that's the conundrum. Energy, a bit like white goods, is something we need but don't want to bother our time with too much. It'll always be trumped by the weather. Of course, putting the two together is now possible – linking a home heating energy app with a two hour-ahead temperature forecast is certainly smart. But will it catch on and how can it be monetised?

The monetisation strategy is key for technology entrants and power companies. Time-saving and money-saving motivations are central to consumer behaviour but don't necessarily help a utility's revenue stream and may even erode it. But digital innovation that cuts costs can be directly margin- and revenue-enhancing. Moving customers onto digital platforms for self-managing their own payments and accounts in the same way that many of them manage their banking can enable utilities to begin to deliver big savings in customer management costs.

### **Creating value**

The race is on to create truly value-adding positions at the nexus of buildings and home management. The rate of take-up of smart home and building technology as well as wider digital customer offerings will be determined by consumers' perception of ease of use, relevance, cost and privacy. Utilities may not have the technology and the market scale compared to some of the outside entrants so the challenge for them will be to assess how they can fit best into the developing ecosystem and which initiatives to back and be part of.

For example, smart home automation that can shut off water supplies and isolate electronics in the event of a flood to prevent damage to a home and belongings can directly save customers money in claims and insurance costs as well as open up cross-selling opportunities. Technology entrants are already offering such automation but power utility companies and their partners may be better placed to leverage the full customer potential. If utility companies can create positions for themselves where they become key to monetisation then they could play a part in the smart building and smart home revolution even though they may not be technological leaders in the revolution.

# ***Addressing the customer of the future***

*The traditional customer focus of the industry has been on 'performance-based satisfaction'. Customer strategies that responded satisfactorily to basic concerns of reliability, safety, pricing, information provision and resolution of any problems were sufficient. Now, the combination of energy transformation and technological innovation has led to a more far-reaching set of challenges (figure 5). Customer expectations of the ease of interactivity with companies are much higher and companies have to navigate a much more dynamic and complex energy ecosystem. Companies need to have a clear strategy for how far they want to go in developing new products and services in this ecosystem and deliver the enhanced customer relationship mechanisms to match.*

## ***Achieving customer connectivity***

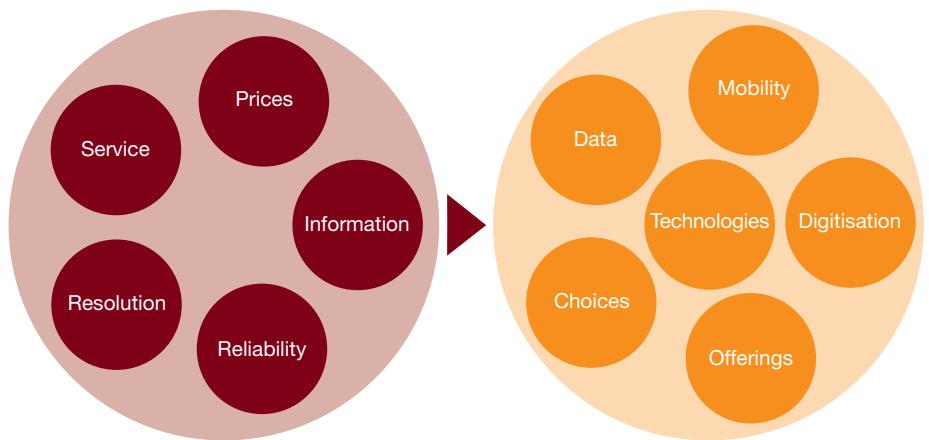
Tomorrow's customers will have more power and choice. Many will expect to be in control of their own energy solutions and they will be looking beyond the existing typical customer relationship to team up with companies that they feel they can have a partnership with. Alongside them, there will continue to be many customers who, for some time, will be satisfied by a more traditional relationship with their utility company.

Both of these types of customer will need to feel that they are at the centre of the utility company's priorities and will want ease of interactivity. And both are very valuable targets for utility companies. The traditional customer provides revenue and value that companies will not want to see lost to rivals. The new type of customer will be the growing market of the future, more challenging to satisfy but key to eventual sustainability.

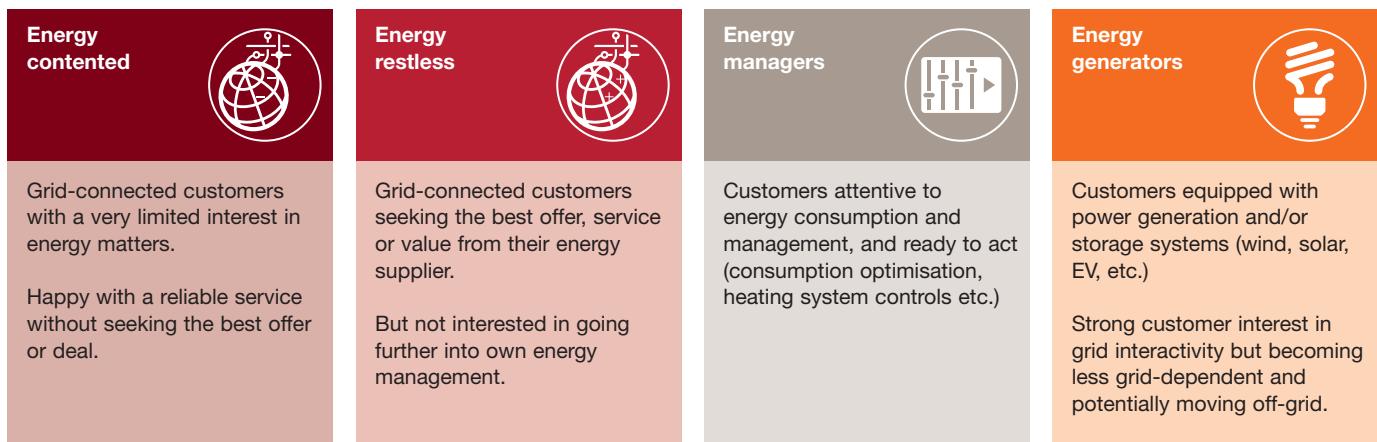
**Figure 5: A more far-reaching set of customer challenges**

The traditional customer focus of the industry has been on 'performance-based satisfaction'...

...the future focus will be directed to enhanced 'engagement and solutions'



**Figure 6: Customer typology overview**



Reaching the next level in any customer service context requires an improved understanding of each type of consumer's needs and behaviour and better ways of engaging them. Companies are constantly refining and re-examining their customer segmentation insights. This focus on customer understanding will become even more important as energy transformation takes hold. In figure 6, we outline a very high-level overview of the different types of customer situations that market change and energy transformation are creating.

Customers range from those that are relatively passive and just want their energy supply to be in place and reliable to those that are active in thinking about and changing their energy arrangements. This passive-active spectrum is relevant to business and commercial customers as well as residential customers. We also highlight customers who aren't served at all by the centralised grid at the moment, or that are connected but suffer from an unreliable and inadequate service (the 'energy underserved/unserved'). Most of these will be in developing countries but the concept of the 'underserved' is also relevant to customers in localities where frequent storms or other weather events create grid disruption and cause customers to feel a degree of dissatisfaction with their grid supply.

Energy transformation has consequences for customer transformation all the way along the spectrum of customer types. Customers at the passive end of the spectrum are highly valuable to companies as they are less likely to defect or want to constantly seek the lowest tariff. But there are limits to passivity and such customers will expect to know they are not being taken for granted. Energy transformation is a threat to retaining these customers as it could trigger more events that could disrupt this customer relationship.

On the other hand, the more data-rich and automated potential that comes from energy transformation offers companies ways to reinforce the value proposition to them, for example by using data to provide reassurance of tariff value or automation to provide low-involvement energy management services. Opportunities can be taken to progressively extend the customer relationship in ways that reassure rather than disturb the more passive type of customer.

As we move along the spectrum from passive to active, we encounter a number of motivations for active involvement, including the restless customer who is searching for the lowest price and the best deal, the 'energy manager' who is seeking to take advantage of the potential of new, smarter technology, and the 'energy generator' who is seeking to become more self-sufficient in energy generation and/or storage. There is, of course, significant overlap and movement between these categories and different markets and populations will have different segmentation categories.

Economic motivations are important across the board but so too are other motivations. For example, lifestyle motivations may be important for residential customers choosing smart home offers, while managerial time and efficiency factors will be relevant to business customers considering building automation and energy management elements of the energy ecosystem.

## Developing new value propositions and capabilities

What is certain is that technological evolution means that the challenge of developing value propositions across all segments of customers is now more complex. There is a greater diversity of customer situations and the old focus of value on a few simple elements is being replaced with a broader range of more sophisticated value propositions. The product and tariff offerings that would appeal to an 'energy manager' and/or 'energy generator' customer type needs to be quite different from that targeted at the 'energy contented' type of customer.

To some extent, the need for a diversity of offerings has always been the case for business and commercial customers, who vary from the small business customer to very large energy-intensive industrial entities who might have their own power plant. As the importance of energy consumption to the business increases, so too does the sophistication of power utility offerings. These have long included provision, for example, for hedging by customers and power purchase agreements for the sale of surplus energy back to the grid.

The size of many large business accounts has meant that power utility companies have been able to offer a tailored and fairly dedicated customer service to these entities, covering things such as energy management, energy trading, site-specific contracts and finance for power facility investment. Now technology developments mean that many aspects of this more sophisticated energy service are increasingly relevant to the emerging breed of 'energy managers' and 'energy generators' in the mass market as well.

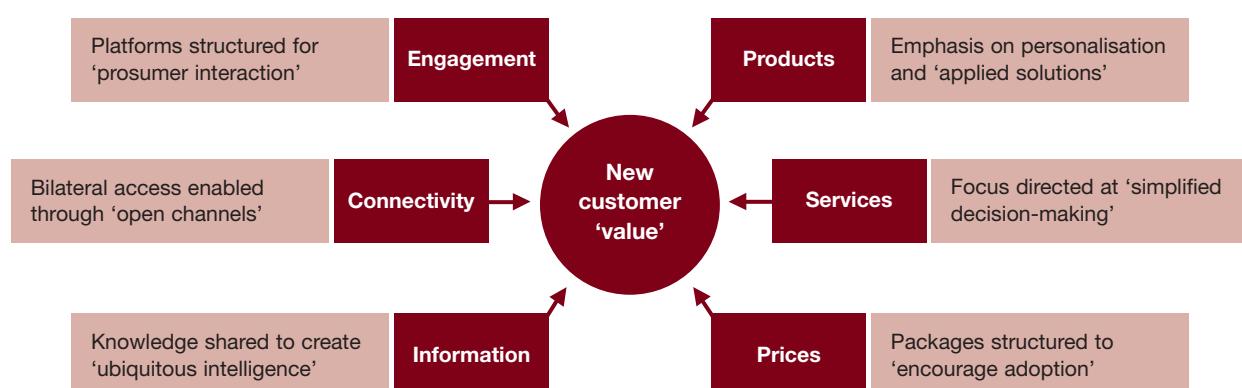
The challenge is to develop mass market customer offerings that succeed in giving small-account customers the personalisation and individual control that they are seeking while also delivering the required economies and scale and margins for the power utility company. And, whether it is business customers or mass market residential customers, customer relations have to be characterised by the ease, speed and simplicity of interaction that is now possible on digital platforms.

A strong digital capability will be essential to keep pace with the changing customer. Utilities need to provide a superior customer experience by simplifying complex interactions, personalising interactions through the application of advanced analytics to customer data, and proactively seeking opportunities and taking actions that drive customer loyalty. Now is the time to act.

As consumers encounter more reasons to engage with their energy consumption through various technology tools and mediums, the window of opportunity is open for utility companies to capture the value of this increased engagement, but it could easily close shut as more nimble competitors step up their activity in the marketplace.

To capture the full benefits of customer satisfaction, utilities need to regard themselves as incumbents in their core business and, potentially, as entrants into new service areas. In each role, they will have specific opportunities to make investments in customer service and operations that promote customer satisfaction and help to differentiate them from the competition. To defend their core business against innovative and disruptive entrants, utilities need to maintain their focus on customer satisfaction through continual improvements in customer service and innovative product and/or service offerings.

Figure 7: The changing value proposition



When exploring new services or products, utilities should consider the experience that incumbents deliver and the corresponding level of customer satisfaction. A new entrant must deliver a superior experience and exceed current customer expectations to grab market share and grow revenue. Where they are a first mover into a new market, they need to be sure that they can offer compelling reasons for customers to take up the new product or service and carefully assess the likely timing and pace of customer adoption (as we discuss in our earlier 'talking point' panel, this is especially important in the evolving context of the internet of things and the connected home).

In all new product and service instances, companies need to assess the strengths and weaknesses of their current brand, particularly whether incumbent reputation can help or hinder the attractiveness of a new offering. The same applies to the organisational structure and capabilities for developing and launching new offerings as, existing structures may not provide the level of innovation required. In many cases, external partnerships or other types of collaboration are likely to be relevant. A 'partner of partners' approach is likely to be an important route for many power utility companies in the new energy ecosystem and this is even more the case when we consider the power and potential of new platforms in the energy space (see next section).

## Viewpoint

### ***Being the customer's best energy partner'***

Sasha Weintraub

Senior Vice President – Customer Solutions  
Duke Energy



*Sasha Weintraub is one of the chief architects of Duke Energy's future customer strategy. As the largest utility in the United States, Duke Energy is at the forefront of the strategic shift taking place in the power utilities sector. It is focused on positioning itself to 'lead and succeed' in an environment characterised by new technologies, new entrants, new products and services, and new customer expectations.*

'Technology push' and 'customer pull' are converging to reshape the way in which energy is supplied, acquired, consumed and managed. Companies are recognising that strategies that worked historically are not likely to satisfy future requirements. As customer willingness to adopt new market options grows, they will need to adapt their customer strategy model to match this evolution.

Duke Energy's customers benefit from some of the lowest electric rates in the country. However, we have not been immune to revenue erosion from the economic downturn, technology adoption and energy efficiency. Like our peers, we have focused on mitigating these impacts and finding new sources of growth. In devising responsive market solutions, I am focused on positioning the company as always being the customer's 'best energy partner.'

Before many companies in our industry, we sought to identify, understand and leverage emerging technologies for the benefit of our customers. We established an Emerging Technology Office (ETO) in 2007 directly focused on evaluating potentially disruptive technologies in generation, the grid and behind-the-meter. This early focus enabled us to deploy a number of these technologies, for example storage, and learn about their functionality and economics through direct market application. The ETO has worked closely with our operating companies to transfer lessons learned from these tests to practical deployment for the benefit of our customers.

Much of my focus has been on developing a deeper understanding of our customers, particularly their shifting behaviours and future needs. Utilities have not always been adept at anticipating customer needs, particularly at understanding how new engagement technologies, market channels, product bundles and pricing options influence customer attitudes about energy sourcing. At Duke Energy, we are working to offer advanced products and services beyond what customers expect and can imagine from their traditional utility. Our strategies are intended to embed a more customer value-centric focus within the company that is visible to our customers.

This notion of being a 'partner of choice' with our customers extends to how we participate with other partners in the emerging, boundary-less energy ecosystem. We have maintained long relationships with some of the most respected industrial companies serving the utilities sector. We are working hard to extend these relationships from a simple supplier-to-customer model to one where each entity values the capabilities and positioning of the other to create a mutually enhancing customer relationship.

Underlying all of these approaches to the market is the belief that we need to build a 'culture of innovation' that extends throughout the company. Since customers are becoming less inert and more comfortable with exploring energy sourcing alternatives, Duke Energy is becoming equally comfortable with leveraging internal and external innovation to build our future value-added products and services portfolio. The opportunity to look beyond internal capabilities and to collaborate with strategic partners can be a differentiator in accelerating our offerings for quicker market positioning.

## Participating in new platforms

To strengthen their position in the evolving energy ecosystem, companies could consider participation in a platform-oriented approach (figure 8). A platform allows multiple participants (producers and consumers) to connect to it, interact with each other and create and exchange value. Airbnb, eBay and LinkedIn are examples of such platforms. They offer opportunities for customer loyalty and lock-in and facilitate new revenue-sharing business models while allowing companies to maintain their focus on their existing core businesses.

The initial focus is likely to be services around smart energy use before building on these to provide wider and more ambitious services as connected devices and the internet of things take root. Data monetisation opportunities would arise in a number of ways. These would include end user analytics related to energy consumption and in conjunction with trusted third parties; analytics from platform-generated data that would enhance new business opportunities; and paid-for data-driven services that enable external players to exploit the value embedded in the platform generated data.

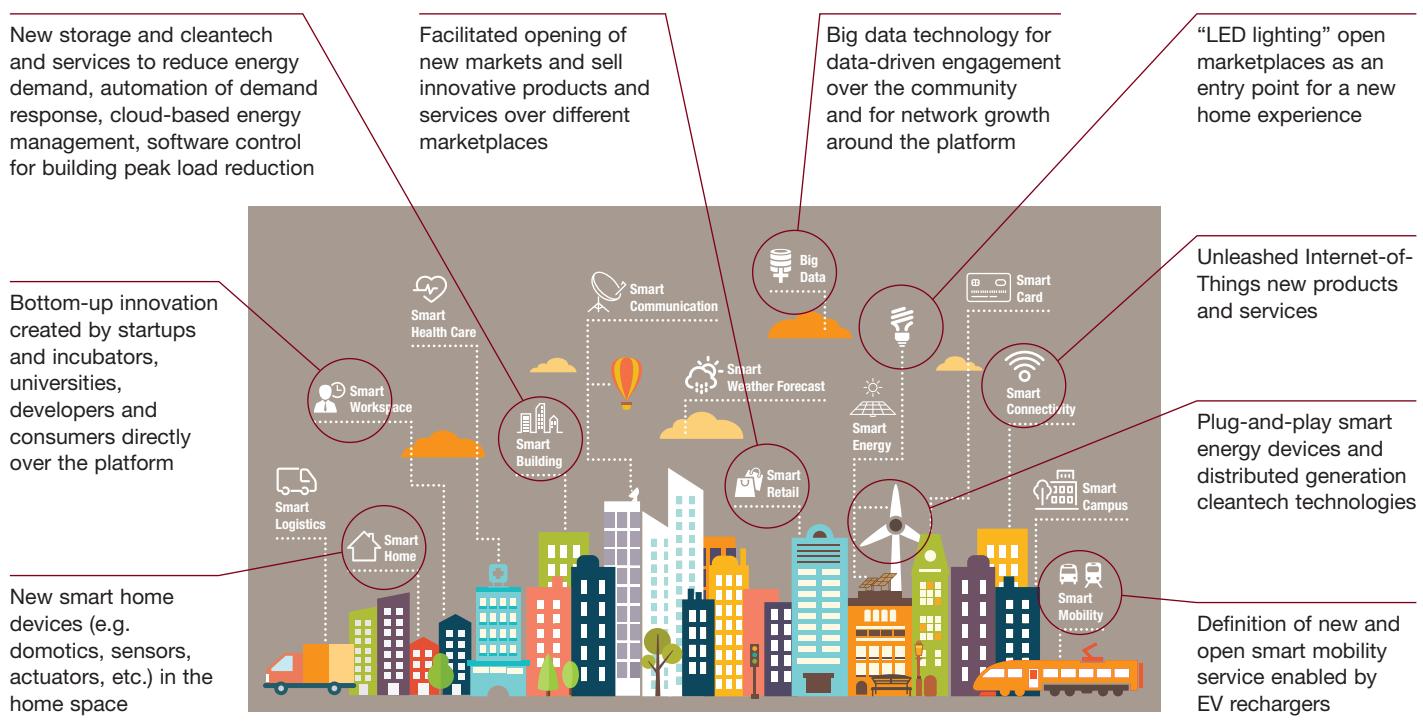
But the development of such platforms represents a major challenge. Power utility companies on their own would be unlikely to lead their development and, if they were to do so, would be in direct competition with technology rivals for this same space. The project procurement and delivery challenges of such platforms are substantial and require leading-edge data management capabilities. The real-time data management challenge of gathering and analysing a huge stream of data from multiple sensors and sources is substantial. Successful rollout would require leading-edge technology and data analytics as well as top class information governance and security. And, as we highlighted earlier in our discussion of public trust, addressing cybersecurity and other security and privacy concerns would also be key to project success. So the judgment for power utilities will be to judge the pace of change and to make the right choices about which initiatives to back and their role in them.

Where utilities do have an advantage over new entrants is in offering a 'virtual utility' service, aggregating the generation from distributed systems, acting as the intermediary between, and with, energy markets and offering back-up power.

A virtual utility can also act as an integrator of non-traditional services provided to customers by third parties — for example, distributed energy resources outside its traditional service territory. Such services would offer prosumers and consumers a strong reason and financial benefit for agreeing to share their real-time usage information.

A successful virtual utility needs to have in-depth knowledge of the energy industry, thus playing to the strengths of incumbents. It needs to be highly efficient at energy sourcing, managing or interfacing with local distribution networks, real-time balancing of demand and supply, as well as providing intelligent tools for managing customer engagement.

Figure 8: Developing a platform-based approach to the 'behind the meter' arena



## **Overcoming legacy and culture issues**

Even the development of less far-reaching ways to engage with the new type of customer than the platform approach outlined above is a challenge for utilities. Many power utility companies have to overcome a legacy of sub-optimal customer service or, even where customer service is good, being seen as of marginal relevance by customers. Unlike possible competitors, many utilities also have a universal service obligation and don't have the luxury of being able to disregard higher cost to serve customers who need older and more costly channels of communication. Many other customers might have little appetite for strong digital engagement with their utility company but be of high value. Judging and managing the investment case for different channels is a delicate balancing act. And, of course, there is the big challenge of utilities themselves becoming digital organisations, capable of having the digital culture and capabilities to, in turn, provide a good digital experience for customers.

Digitisation is a wake-up call to the internal culture of many power utility companies. The immediacy of customer interaction that it makes possible demands a customer-centric and responsive mindset that is very different from the traditional engineering-based culture that companies have grown up with. Even where they have successfully brought in new thinking into the customer relations parts of their organisation, they are often hampered by legacy IT systems as well as legacy mindsets. Many utilities are still playing system catch-up. Many existing customer information systems and the associated customer technology were built to handle legacy utility processes. They were not built to handle the modern and integrated utility, let alone the emerging demands of tomorrow's energy market. Companies are often struggling with multiple technology platforms that are not adaptable and are ill-equipped to support new channels.

As utilities develop their customer technology strategies, business goals should drive information architectures. The technology choices that companies make will need to be determined by the direction of new product and service development and new market channels and enable differentiating capabilities which will drive revenue, improve customer satisfaction and enhance the brand. It will be important that companies take a clear view on how they want to move forward as the market transforms and ensure that IT and wider investment are in pace with this.

## ***Moving forward as the market transforms***

As incumbent utilities become more comfortable with the shape of the future energy marketplace, they are having to make intelligent choices about 'where and how' to compete in this broadening space. These choices need to strike a balance between serving the still fundamental needs of their legacy business and addressing the emerging demands of a nascent, but promising, market. Strategies must embrace the customer needs that exist today, needs that are known today yet unserved and those that may be anticipated to emerge in the future, but are not recognised today.

Accordingly, utilities will have to be adroit at understanding the direction of the future market, as well as agile in designing the appropriate delivery model to satisfy customer requirements.

Each company's strategies will be market-, customer segment- and utility-specific, but all will need to cover:

- positioning in the future market
- capabilities for market success
- new product and service development
- leveraging new market channels, and
- winning through innovation.

### ***Positioning in the future market***

starts with building an informed view of the dimensions and boundaries of the multiple sub-segments comprising the new utility product and service portfolio. Incumbents will need to establish their 'purpose' for market participation, e.g. providing end-to-end needs fulfilment. They will also have the choice of developing strategies focused on expanding (growing), extending (broadening) and/or enhancing (improving) their current market position across the residential, commercial or industrial segments. Thus, utilities should first realistically define 'where to play' and then shape the strategy for how they can create a differentiable advantage over other providers.

***Capabilities for market success*** will extend beyond those outcomes that have traditionally been the hallmark of successful utilities, i.e. operational excellence, financial discipline, regulatory relationships and customer satisfaction.

New capabilities have to be developed and nurtured that are relevant to being able to compete in a different type of market and shaping the 'how to play' part of the strategy. These capabilities are likely to include skills related to market scanning, being customer-savvy, opportunity origination, creative pricing, partnering prowess and technology deployment. Incumbents have the advantage of understanding existing markets, although under different structural fundamentals. Now they will have to define the capabilities that will enhance the 'role' of the incumbent in this new market.

### ***New product and service development***

**development** will be a minimum requirement for future growth with the connected customer. The sector will need to create a product and service development engine that is able to deliver inventive offerings that anticipate the needs of customers and are packaged, priced and promoted attractively. Developing existing and establishing new relationships with a range of out-of-industry partners, such as technology and consumer companies, will be an important element of this. These partnering arrangements will expand companies' capacity for development and expand the availability of attractive offerings to enthuse customers and enrich the nature of the incumbent-customer relationship.

### ***Leveraging new market channels***

has been relatively uncharted territory for many power utility incumbents. Historical channels were simple to define and master – using the power of the franchise to offer product enhancements, such as payment programmes, as part of a traditional regulated service. The broader portfolio of potential products and services will require more inventiveness. New channels, such as network partnering, social media, mobile applications, targeted placement and mass market canvassing, will become staples of the utility's go-to-market strategy. Thus, utilities will need to design strategies that both repurpose traditional market distribution channels and create opportunities to extend the 'reach' of the business in unconventional ways.

### ***Winning through innovation***

**Winning through innovation** comes from recognising the value of creative thinking and deeply embedding this capability throughout the utility. Innovation has not been a hallmark of the utility sector and has largely been limited to traditional research and development, largely around generation technology and carbon. Addressing future needs will require a stronger focus on innovation and idea conversion that leads to the commercialisation of new technologies and the proliferation of new products and services to fit the needs of tomorrow's energy system.

The 'go-to-market' customer strategies that are developed and adopted by the utility industry will have to move well beyond those regulatory-based ones that the industry relied on in the past. However, utilities must determine where to align their new products and services within the current regulatory model, i.e. as part of the traditional core regulated business offering or as a competitively tariffed offering that can be placed in either the regulated or non-regulated segments. Thus, incumbents will have to develop a level of regulatory entrepreneurship that enables them to navigate a different market than previously existed.

In entering more of a products- and services-based world, the utility industry will need to recognise that it is moving from an investment and return model of profit to a sales and margin model. These are very different models and carry unique risk profiles from one another, and therefore specific strategies for success. It will be important that utilities enhance their knowledge of the available business models that can support their market participation.

# **Round-up**

## The customer transformation checklist

1. Does your company have a clear view of 'where to play' strategically in the new energy ecosystem, 'how to play' commercially and 'how to win' competitively?
2. Is this positioning matched with a convincing monetisation strategy that will be margin- and revenue-enhancing?
3. Are you making things simple and fast for customers, personal and truly value-adding or are you stuck with processes and a culture that are still hindering customer service?
4. Do you have a convincing roadmap for becoming a truly digital organisation, able to deliver digital connectivity to customers' assets and integrate that into the wider energy ecosystem to offer services of real value?
5. How much do you know about your different customer types and do you have the tools and data capability to use this knowledge to create a more personalised relationship with them?
6. Are you gathering the insights and intelligence that can inform the optimal timing of your customer transformation journey, avoiding investments that might be out of step with the pace of customer adoption while also leaving you ready to capture the opportunity that comes from a more energy-engaged customer?
7. Have you got a clear view of what capabilities you can deliver yourself and what is available and could be better delivered through outside collaboration?
8. Do you have the right balance and connections between the continual customer service improvements that you need in your existing core business and the customer innovation that you need to put behind new product and service offerings?
9. Are you preparing adequately for the exponential increase in data management capabilities that will be required as energy transformation takes hold?
10. Is everything that you do being held up to the mirror of maintaining and growing customer and wider public trust in your activities? Are you, for example, putting non-negotiable safeguards in place on issues such as cybersecurity and use of data in the same way that you would on safety?

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