DELIVERING THE NEXT GENERATION UTILITY CUSTOMER EXPERIENCE

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CONTENTS

EXECUTIVE SUMMARY

Technology is driving change in the utility sector faster today than it has since the advent of the industry more than a century ago. For utility customers – ranging from the largest corporations to individual households – new technologies are offering different ways to interact with their utility, from paying a bill to sourcing generation.

Technology changes are also bringing in new, unregulated players that can both help and hinder utilities in strengthening their customer relationships. At the same time, regulators are increasingly asking utilities to embrace technologies like rooftop solar, microgrids and analytics tools to serve the customer better, but without violating the current regulatory compact.

Many utilities have only just begun to transform the customer experience. However, a growing number of utilities no longer see their customers simply as ratepayers attached to a meter, but rather, as individuals with an array of preferences. As their view of the customer evolves, utilities will benefit from shifting to a horizontal view across each customer class to help segment and redefine the types of services they provide to each group of customers. A horizontal view will also help utilities to identify new business opportunities and extend customer value, regardless of the regulatory environment.

Electric providers in a deregulated environment can innovate with new service offerings to customers, while regulated utilities can work in tandem with regulators to test and deploy new technologies faster to better serve customers.

New opportunities may include better online interaction tools to help even the largest energy users tackle complex energy problems, but sophisticated customers will soon be asking for much more.

They will likely want more options for clean, local and personalized generation. Many will first seek options from the utility, but if they cannot obtain those from the utility, customers will look elsewhere.

In order to maintain their role as a trusted energy advisor, it will be necessary for utilities to gain a deeper understanding of customer preferences. By exploring the best practices of other sectors, utilities can ensure they measure up to other service providers who may eventually become competitors.

The horizontal approach to each customer class – commercial, small business, municipal or residential – will require an ongoing transformation, rather than a one-time pivot in business practices. By embarking on this transformation today, utilities will be well-positioned to increase their value to customers and shareholders.

STATE OF THE MARKET

Electric utilities are already starting to interact with consumers far more dynamically than ever before, due in part to the rise of distributed energy resources and advances in information technology.

The shift utilities are undergoing today is similar to the one the telecom sector went through during the deregulation of the 1990s. While infrastructure and service providers like AT&T focused on improving call quality, technology pioneers like Steve Jobs focused on reinventing the entire customer experience. Distributed energy resources are to utilities today what iPhones were to the telecom industry about a decade ago.

As seen in telecoms, consumers often do not deem a technology as essential until it is in their hands. Customers will not necessarily drive the change to embrace new energy services and smart technology; we believe they will follow based on whatever the third-party game changer will be.

Most customers, particularly residential ones, do not compare their utility to the next utility in their region. Instead, the utility is compared to other companies that people rely on for services every day, including cable providers, telecoms and technology companies such as Amazon and Google. The universe of these providers is expansive, with GTM Research identifying more than 120 diverse players that are serving some part of the burgeoning home energy management market. Some may be utility partners, but others are poised to be emerging competitors.

Utilities currently have a meaningful relationship with customers of all classes and a high level of brand recognition, but few customers understand the complexity of power supply and delivery. Thus, consumers may forge allegiances with third-party competitors, supplying a different version of the same product that is wrapped in a completely different experience. This has already been proven in states with retail choice, where electricity suppliers have signed on customers to rates that may not actually be cheaper than those they paid to their utility. If reliability is the same, but the interaction has the feel of a modern, digital relationship, it could erode the relationship customers have with the incumbent utility, even if that relationship is not entirely severed.

Therefore, the utility that can innovate stands to maintain a competitive advantage. Traditional power providers are well-positioned to take their long-standing relationship with customers and create a new customer experience as a trusted energy advisor. Their long-standing relationship with customers also provides utilities with a unique chance to work with third-parties in order to serve the customer better.

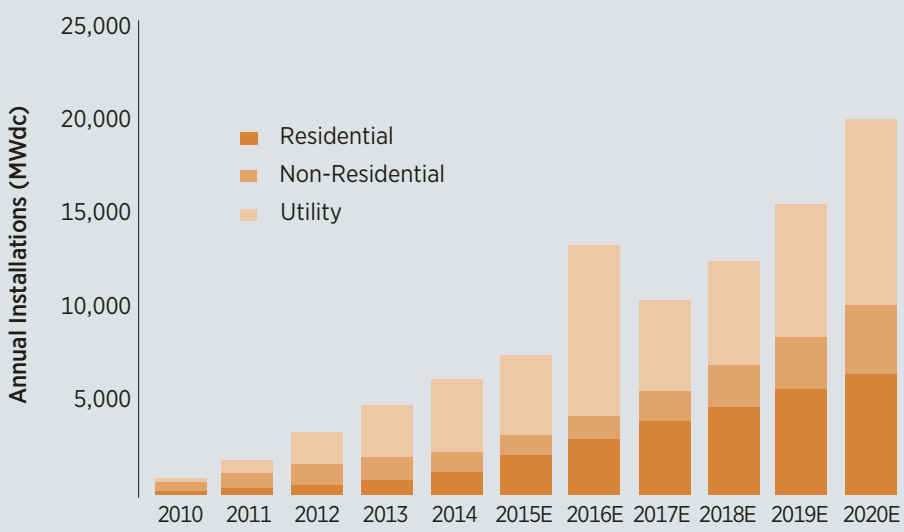
THE THIRD-PARTY THREAT

Utilities are often described as natural monopolies out of necessity because of the high cost of building generation, transmission and distribution infrastructure. While it would be cost prohibitive to build an entire new electric system to compete with the existing one, the threat of third-parties taking advantage of that infrastructure and eroding the customer relationship is real.

Customers are primarily interested in saving money on energy bills, while still having reliable service, with some customers also interested in how their electricity is sourced, preferring local and clean options. However, customers can obtain these services anywhere and they are not necessarily looking to strengthen their relationship with the utility. Thus, the role of energy provider and energy advisor is up for grabs across all customer classes.

The growth of distributed solar is the primary driver for a new suite of services. It took more than 40 years to achieve the first million solar installations in the U.S. in 2016 – the majority of which are distributed – but it will only take the next two years to achieve two million, according to the Solar Energy Industries Association.

U.S National PV Installed Capacity by Market Segment (MWdc) Post ITC Extension



Source: U.S. Solar Market Insight

At the same time, energy storage costs are falling steadily every year, which makes it possible for those adopting renewable generation to store energy until it is needed. Distributed energy storage, such as batteries, can also participate in energy markets in a growing number of regions, providing additional revenue opportunities. In 2015, the U.S. energy storage market grew by nearly 250 percent, according to GTM Research, and it is expected to reach 1.7 gigawatts by 2020.

The falling costs of distributed energy resources are also making microgrids more viable. For large utility customers, such as universities or municipalities, microgrids are emerging as an attractive option, despite the existence of some regulatory barriers. Nearly half of the operational microgrid capacity in the U.S. has been commissioned in just the past three years.

In Southern California, San Diego Gas & Electric (SDG&E) deployed a microgrid in the remote community of Borrego Springs to improve reliability and for learning operational lessons. During a period of planned grid maintenance in 2015, for the first time ever in the U.S. a microgrid leveraged renewable energy to power an entire community. In other regions, such as New York, local utilities will be prohibited from owning such projects, even though there is a push for community-based microgrids through NY Prize.

Another burgeoning market opportunity is community choice aggregation (CCA), which allows municipalities to buy power in bulk on behalf of their citizens, often with the intent to procure cleaner forms of energy and save money. There are seven states that have launched CCA - serving about five million customers in total - and more are considering it. In deregulated markets, it may not directly impact the bottom line of distribution utilities. However, in regulated markets, it has the potential to impact the direct relationship

utilities have with customers in those communities, especially if the utility is not seen as a willing partner as communities pursue CCA.

In a few places, there is a move beyond CCA. The city of Boulder, Colorado has been trying to buy the local distribution grid from Xcel Energy. If Boulder is successful, it could signal to other cities that municipalization is a possibility, particularly if the city believes its clean energy demands are not being met by the regulated utility.

On the other end of the customer spectrum, homeowners are typically interested in energy management options if they are presented in a compelling way. Inside of the home, the most widely available energy management technology option today is a smart thermostat. People buy them for control and convenience more often than utility bill savings.

Smart thermostats are one of the key pieces of today's burgeoning smart home market, which involves bringing many devices under one platform for control. The platform providers for the smart home come from varied markets, such as security companies like ADT, technology companies like Google, cable providers such as Comcast and startups such as SmartThings.

Last year, sales of smart thermostats started dominating the overall thermostat market, and this year, about half will be sold through retail channels instead of through dealers or a utility, according to Parks Associates.

For utilities, the connected home is an opportunity to engage deeper with customers, without necessarily selling hardware directly. Third-party options, such as bring-your-own-thermostat programs, offer a value-add for customers without requiring utilities to actively manage a device within the home. The emerging smart home trend is an opportunity for utilities to layer on services while partnering with others that offer not only smart home technologies but also have a core competency in marketing and customer acquisition.

In deregulated markets, however, there is a chance for incumbent utilities to lose some of that opportunity to third-parties, who are actively exploring bundled smart home services, such as solar PV and internet services, or retail electric power and cable services. Even though some utilities do not view other service providers as competition, they are still broadly judged by consumers against them.

THE NEXT GENERATION CUSTOMER: FUTURE POTENTIAL SCENARIOS

Third-party options for energy services are just the beginning. In the future, technology and grid modernization could allow for a range of peer-to-peer energy markets and transactive energy markets at the distribution level. While it may sound like science fiction today, the groundwork is already being laid for market-based distributed energy markets. In Germany, battery maker Sonnen sells behind-the-meter batteries that allow for trading between small producers of energy, such as solar customers, as part of Sonnen Community. In New York, regulators are attempting to overhaul the role of distribution utilities to turn them into platform providers for an energy market at the distribution level.

Solar and batteries are not the only distributed energy resources that will enable the next generation of customer energy services. New software will also help accelerate the move toward distributed energy markets. There is increasing chatter everywhere about blockchain, the distributed database that supports Bitcoin. While Blockchain could disrupt many industries, in energy specifically, it would allow for billions of endpoints to interact seamlessly with each other across the grid - for truly transactive energy. Transactive energy is still just a concept with a few pilots, but there are elements of market-based energy transactions already emerging. A dynamic set of development and growth of a new class of distributed energy technologies – rooftop solar PV to start, but eventually behind the meter batteries, smart and flexible load controls, and grid-integrated electric vehicles, which are also on the rise – suggest a new way of looking at the future of the electricity system, a paradigm PA refers to as DynamicEnergy. It's an energy environment in which two-way transactions become the new normal.

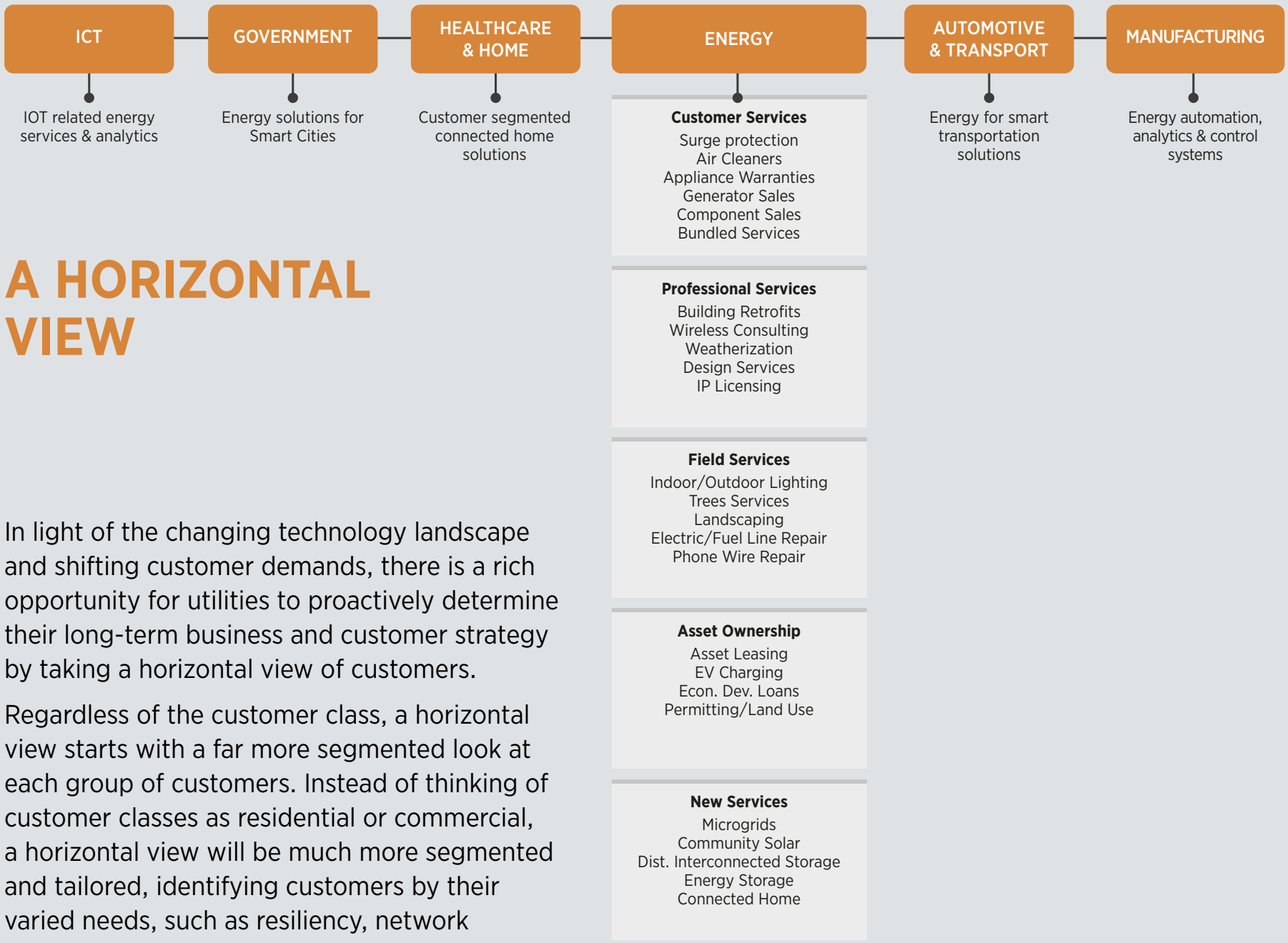
In the DynamicEnergy model, load can follow supply as reliably as supply now follows load, with customer behaviors triggered by price and engineering conditions, and with the ever-shifting demands and supplies of the energy network controlled by intelligent and automated equipment.

In some utility territories with high demand charges, commercial customers are already mitigating fees by investing in behind-the-meter storage. In California, customers can not only arbitrage demand charges but can also bid the storage resources into wholesale markets for ancillary services. Instead of customers individually investing in energy storage, there is a potential opportunity for them to pay the utility, or a third-party, for energy storage services.

Other customers may want a more holistic energy management solution that extends beyond just generation and storage. This may include warnings of impending grid failures and building management systems that can respond to changes in grid conditions or be optimized based on consumption and price signals throughout the day. Electric vehicle customers may want access to charging stations irrespective of a car's location and still have it billed centrally.

Commercial customers may increasingly be asking for detailed information about energy usage – possibly to attract tax credits or obtain subsidies. Corporations will likely be asking much more from their energy provider in the future – ranging from more dynamic and tailored tariffs to deeper energy advisory services.

While many of the above scenarios may seem far off into the future, they highlight the opportunity for utilities to tailor a business to meet customers' needs as they emerge, rather than being reactionary to the market.



A HORIZONTAL VIEW

In light of the changing technology landscape and shifting customer demands, there is a rich opportunity for utilities to proactively determine their long-term business and customer strategy by taking a horizontal view of customers.

Regardless of the customer class, a horizontal view starts with a far more segmented look at each group of customers. Instead of thinking of customer classes as residential or commercial, a horizontal view will be much more segmented and tailored, identifying customers by their varied needs, such as resiliency, network capabilities or convenience.

When Consolidated Edison was evaluating the needs for its smart meter network, for instance, it brought in one of its largest clients, the City of New York, to discuss and explore the types of services the city wanted to pay for in the future.

For commercial customers, a horizontal view could take the form of examining a sector such as healthcare and helping those customers explore energy resilience strategies in an emergency situation. Alternatively, it could consist of helping a hospital analyze an energy efficiency retrofit to determine whether energy cost savings can be achieved, as well as potentially improving healthcare outcomes.

Homeowners can also benefit from a horizontal view from their utility. Elderly homeowners may pay a small fee for specialized alerts when outages are more likely, while apartment dwellers may be interested in community solar options.

The graph below highlights the plethora of opportunities that emerge when the horizontal view is layered onto the current vertical view.

THE EVOLUTION OF CUSTOMER CLASSES

Commercial and Industrial

Very large commercial clients have always had a more intimate relationship with their utility and have often interacted with other energy service providers. However, distributed generation and energy management technologies are allowing these customers to grow even more sophisticated with regard to their methods for procuring and using electricity. Rather than doing it themselves, however, the C&I sector is looking for additional guidance from trusted sources.

Commercial solar projects increased 60 percent from 2014 to 2015 in the U.S., and many of the largest corporations are becoming increasingly sophisticated about seeking power purchase agreements for clean energy.

Solar is just the beginning. Some businesses are looking at energy storage as an option to lower demand charges, while others are looking at LED upgrades as a gateway to a smarter building – and not simply an energy efficiency retrofit. Networked LEDs have become a mainstay of the lighting business, as evidenced by General Electric's recent purchase of lighting network startup Daintree Networks.

Others are looking to bring all of the elements of distributed generation, energy storage and building management together into microgrids. Microgrids are still not economic for many large power users, but universities, hospitals and other entities are increasingly interested in them for resiliency. In most cases, whether for a community or campus-style

microgrid, stakeholders are looking for a partner in their local utility. That is true for commercial and industrial energy users in nearly all aspects of their energy planning.

The commercial and industrial customer class is already well-served by utilities that have teams dedicated just for these customers. However, there is an additional opportunity for utilities to engage deeper, beyond just energy efficiency retrofits or demand response programs.

By segmenting and proactively asking customers about their energy goals, utilities can maintain and expand their role as an energy advisor. In some cases, the horizontal view of energy services may be provided through a deregulated arm, as Edison International is pursuing.

In early 2016, Edison International launched Edison Energy, an energy consulting and project development arm of the parent company. Its goal is to help large commercial customers with their energy needs and identify gaps in their strategy. Edison Energy is competing with firms like General Electric's Current, which also wants to be an energy services provider of the future.

By taking a technology-agnostic and holistic view based on individual customer needs, utilities can also help large customers shape their load in a way that works for both the utility and the customer, such as shaving peak demand by offering compelling rate designs or co-investing in energy storage technologies that have ancillary services applications as well as behind-the-meter applications.

Utilities can also offer their expertise to customers who have become more sophisticated in energy procurement. For example, many corporations have a condition of additionality when procuring power purchase agreements of clean energy and they are often seeking the input of the local utility.

Through rate design and incentives, there is also an opportunity for utilities to develop products that compensate the customer for providing grid services to the utility.

Potential Future – More Than Just Reliability

C&I customers are looking for energy advisers with the expertise to help them manage load, explore energy-related investments and become partners to test new business models and revenue mechanisms.

Utility Example

- In 2015, major corporations led the charge toward distributed renewable energy, including Target signing a PPA for approximately 100 MW, Apple's PPA for 130 MW and Dow chemical signing renewable PPAs for 200 MW.
- Edison International launched Edison Energy in 2016 to provide energy-as-a-service to the largest energy users.

Small and Medium Businesses

The small and medium business (SMB) sector is evolving quickly as a customer class. This group has traditionally been underserved by utilities due to the difficulty in differentiating a diverse range of customers. The need to engage successfully, however, has never been greater, as many utilities look to meet increasingly stringent energy efficiency goals.

Small businesses may not be looking for solutions that are as sophisticated as the solutions sought by larger corporations, but they are equally sensitive to energy as a cost – sometimes more so. Simple solutions, tailored for different types of businesses, can be successful.

In the deregulated U.K. market, for example, British Gas is delivering behavioral analytics to its 900,000 commercial customers using a platform from EnerNOC. For the smaller business customers, the interface is simple and provides actionable information based on the type of business, with differentiation between verticals as similar as dry cleaners and laundromats.

Small businesses do not have time to pore over detailed energy management analytics tools, but they can benefit from technology and tools that provide them with greater control and new services. There are a myriad of technology companies that can help utilities deliver solutions that can alert a business owner when the lights are left on or when an HVAC system needs maintenance.

There is also an opportunity for streamlined efficiency programs to engage SMB customers. Many utilities have moved LED retrofits from custom programs to prescriptive programs, making it easier for small businesses to participate.

Networked LEDs are becoming increasingly common, and thus, there is an additional opportunity for utilities to advise small business owners regarding the advantages of networking for their business. Another opportunity for utilities is to assist with upgrades to backend systems, allowing for more seamless energy efficiency upgrades that minimize problems and downtime for small businesses.

Beyond just energy efficiency projects, software-based analytics can help identify SMB customers who might be a good fit for non-wires alternative projects or demand response. It could be a special rate that benefits the customer and the utility, or perhaps an incentive to invest in distributed energy resources, which the utility has the ability to control.

Because many small business customers have traditionally not been engaged with the local utility, there is a tremendous opportunity to transform their experience as utility customers to the benefit of all.

Potential Future – A Renewed Focus

Small and medium commercial is a critical customer segment for both utilities and DER service providers.

Utility Example

- British Gas provided analytics to nearly 1 million commercial customers, from industrial and commercial giants down to every mom and pop store.

Puget Sound Energy used Retroficiency's data analytics to better target small commercial buildings for efficiency programs.

Municipal

Municipal customers are also evolving as a customer class. The proliferation of distributed energy resources, the emergence of smart city technologies and the growth of community choice aggregation are reshaping the traditional relationship that towns and cities have with their utility.

Today, utilities have an opportunity to be a technology partner with the cities they serve, rather than simply a commodity supplier.

For municipal utilities, investing in communications networks for smarter grids has often come with other public benefits, such as other city agencies being able to leverage extra bandwidth on those networks or offering up free public Wi-Fi.

For investor-owned utilities that serve cities, planning for grid networks presents an opportunity to bring in municipal leaders early in the process to offer similar services. Commonwealth Edison, for example, is upgrading the streetlights it owns to LEDs and networking them for towns seeking additional functionality. As ComEd makes the investment, it plans to test different business cases, such as cities using the streetlight networks for smart parking apps.

In Florida Power & Light's territory, networking 75,000 streetlights on the back of its smart meter mesh network was not only about providing additional value to the county of Miami-Dade. It also strengthened the network and provided the utility with another node to detect outages and restorations.

Taking a horizontal view with municipal customers will not only consist of leveraging shared networks, as each community has desired outcomes around cost savings and generation preferences that will be varied from town to town.

ComEd, for example, is not only exploring new business opportunities around streetlights, but also microgrid clusters and networked, smart communities that could provide additional resiliency and services for residents and businesses.

In New York, the state hoped to provide funds to up to 30 communities to study the feasibility of microgrids as part of its NY Prize that it launched in 2014. Instead, it awarded funds to 83 communities in Phase I prizes due to overwhelming interest. The takeaway here is that utilities have an opportunity to work with communities to assess the microgrid potential.

By working with towns, utilities can be a partner in the shift toward a cleaner or more distributed energy future, rather than being supplanted by a municipality trying to pursue it on its own. One way to achieve this is for utilities to position themselves as willing partners, rather than roadblocks, to community choice aggregation.

One of the most prominent CCA organizations is in Marin County, California. Marin Clean Energy has signed a handful of power-purchase agreements since being founded in 2010 and it recently launched a community solar offering. Local utility Pacific Gas & Electric is still the distribution utility, but it no longer offers supply to these customers.

In New York, Sustainable Westchester's members have joined Westchester Smart Power, which launched in 2016 with 20 towns that banded together to buy clean power at a cheaper rate than individuals would have secured on their own by shopping for a supplier. Eventually, CCA intends to swap out the renewable energy credits that currently provide the clean energy with local, renewable resources sited in the towns that are participating.

Regardless of the regulatory environment or current potential for CCA, utilities have an opportunity to help towns and cities meet their energy goals by taking a horizontal view. However, failing to act comes with the potential for an increasing price tag, as there are many options for savvy municipalities to seek energy solutions elsewhere, whether through CCA, power purchase agreements or distributed energy.

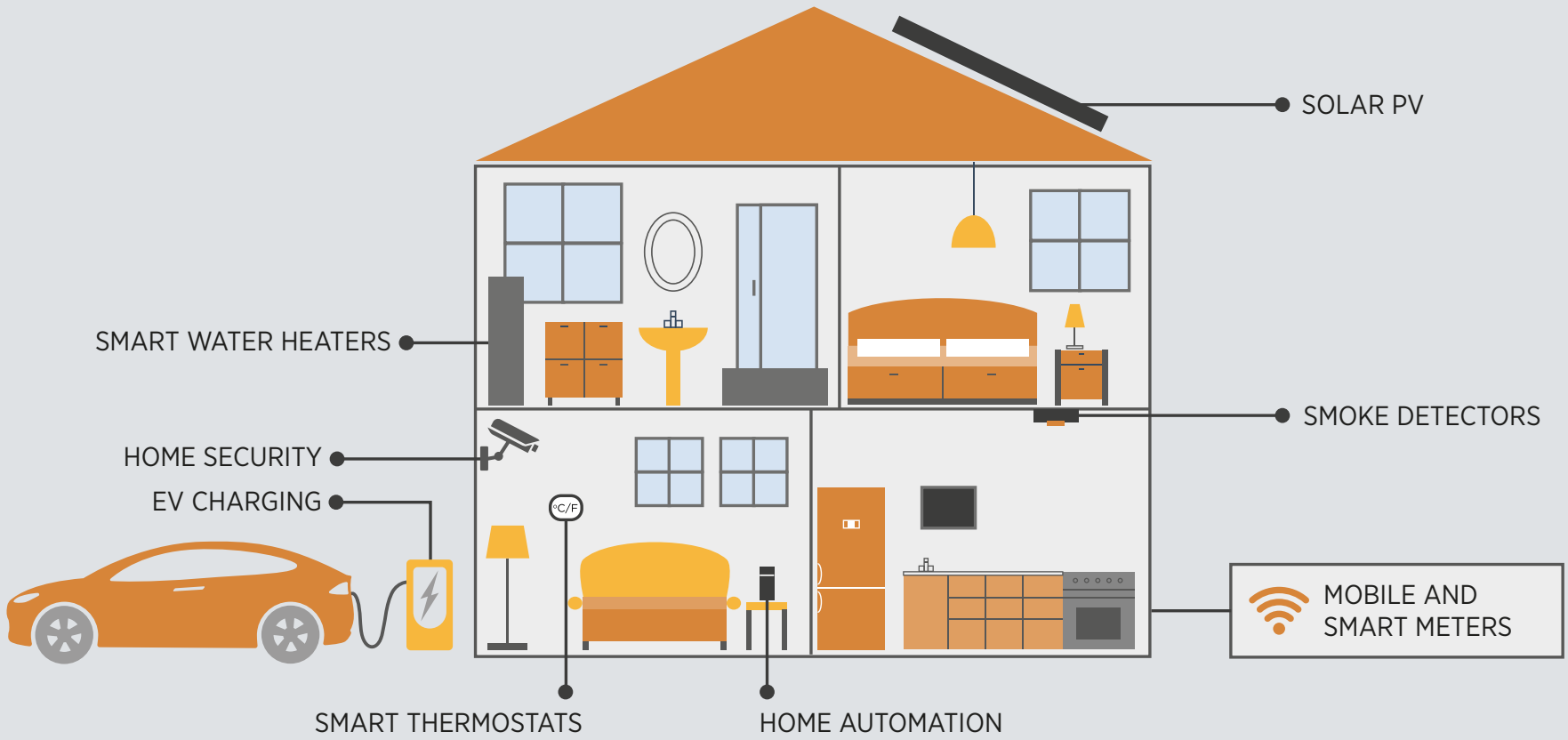
In extreme cases, cities may choose a path to municipalization if they believe their needs are not being met by the hometown utility. Being a good utility partner receptive to community needs will be crucial for maintaining these customers.

Potential Future – The Horizontal View

Cities and other local authorities need a capable partner when deploying "smart" and "networked" infrastructure.

Utility Example

- Commonwealth Edison has launched a "community of the future" pilot to build a microgrid in the Bronzeville neighborhood linked with the private microgrid on the Illinois Institute of Technology's campus.
- Municipal utility EPB Chattanooga was an early adopter of leveraging its Sensus smart grid network for 27,000 connected streetlights in 2012.



Residential

Residential customers typically do not think about their utility very often – until the lights go out or they receive a high bill. However, the competition for homeowners' attention and wallets is forcing utilities to be more proactive about this customer class than ever before. A few bill inserts a year and a call center is not enough to keep the relationship strong. Customer education remains a challenge; utilities must be able to take the complexity of the electric system and rate design and put it in terms customers can easily digest.

Even for utilities that do not want – or cannot have – a role within the home, new connected-home technologies impact how customers think of their utility and what they expect from it.

It's not just the adoption of smart home gadgets that is shaping how customers view their utility. Customers have already embraced capabilities like one-click ordering from Amazon and alerts from Google for everything from an email to a calendar invite. Many consumers expect the ability to control every aspect of their lives from a mobile device. Customers want companies that serve them, including utilities, to meet them where they stand from a technology perspective.

As with SMB customers, small changes can have a meaningful impact on a new level of service. That could be more proactive digital outreach or investing in backend systems that allow for more seamless customer interactions. Customers can also benefit from simple analytics such as high bill alerts and outage notifications. Ultimately, more digital self-serve options are often favorable to not only the customer, but also the utility, with servicing calls ranging from $5–$12.

Once utilities allow customers to interact with them through their preferred mode of communication, the opportunity opens up for segmented messages to help customers choose the programs that are right for them. Segmentation does not have to mean customers are being served differently, which would violate the regulatory compact.

Building early relationships through smart thermostats or connected hot water heaters can lay the groundwork for more sophisticated services, such as community solar or community storage – or deregulated utilities offering solar or other distributed energy resources. Electric vehicles present another opportunity for utilities

to interact with the customer, both through building charging infrastructure and creating dynamic rates.

By keeping close tabs on the quickly evolving smart home landscape, there is an opportunity for savvy utilities to offer an entirely new range of bundled services, whether around energy, cable, internet or telecom.

In deregulated markets, such as many in Europe, the utility may aim to be the service provider offering everything from security cameras to smart thermostats. In the U.S., however, it may be partnerships and platforms that drive the utility evolution, such as the energy marketplaces being developed by San Diego Gas & Electric and Orange & Rockland. In these innovative new offerings, the utility markets target products and services to customers and realize revenue through lead/conversion fees as well as a portion of the overall margin from the sales. Partnerships should provide mutual benefit for stakeholders, and utilities may need to work with local regulators to find the best construct to realize those benefits.

Regardless of the customer class, it will benefit utilities' horizontal approach if they can share the right data with the right stakeholders. Data is one of the strongest assets utilities have at their disposal. Utilities will require a clear mechanism for ensuring privacy for both customers and the utility, while being able to share that data with third-parties. For many utilities, the process will begin with sharing data more seamlessly with customers.

Potential Future – Beyond Engagement

Emerging market structures and enabling technology help build the value proposition for customer to transition from ambivalence to sophisticated consumer and energy producer.

Utility Example

- Orange & Rockland is developing an energy marketplace powered by Simple Energy as a Reforming the Energy Vision demonstration project to sell everything from smart thermostats to pool pumps to televisions to solar.
- Sacramento Municipal Utility District has a home solar-storage project to benefit both homeowners and the grid alike.

PLANNING FOR THE NEXT GENERATION UTILITY CUSTOMER

To successfully serve the next generation utility customer, it will be more important than ever to have a comprehensive business, regulatory and customer strategy.

Most utilities will require new revenue streams as distributed energy resources chip away at traditional revenue. Looking horizontally across customer classes is a key strategy to identifying the most desirable services for evolving energy consumers in each region.

In the U.K., for example, it will consist of innovation by the retail electric providers to offer services that reduce customer churn and increase satisfaction – those services may very well surpass traditional utility offerings. In the U.S., new strategies will emerge within regulated, investor-owned utilities as well as by deregulated entities. For companies that own both regulated and deregulated utilities, there is an opportunity to craft a careful business strategy across both businesses that maximizes choice and opportunities for the utility and customers.

Any horizontal view should begin with a deeper segmentation of customer classes and outreach to understand customer values, as well as their stress points with regard to energy service.

With a greater understanding of customers and differentiated propositions, the utility can then prepare to offer solutions through integrated end-to-end experiences that bring together the best practices in traditional and digital channels. Ideally, best practices will not just be informed by the utility industry, but also other industries that each customer class engages with on a regular basis.

To achieve these results, it may not be enough to simply invest in a handful of new technologies or form community workshops. Instead, it could require a redesign of the business structure to bring not only better customer outcomes, but also better outcomes for utility investors.

By bringing the customer experience into every layer of the business, utilities can also define specific metrics to monitor success and challenges in a new customer interaction paradigm.

The transformation of customer service across the business can help utilities map a preferred journey for each type of customer and a business that supports the desired outcome. As technology evolves, the roadmaps will also evolve to ensure the customer service strategy is keeping pace with the ways customers are being served by other markets.

The challenge to transform the customer experience is significant, but it is definitely achievable. A comprehensive strategy may take time to implement, but each step in the process will move the utility forward. By taking a proactive approach to serving the changing energy customer, utilities can ensure that they are selling the products – and not just a single commodity – that customers will demand for years to come.

DPCR5

Innovation Funding Incentive (IFI)

The IFI was a set allowance each DNO received as part of their price control allowance. The IFI remained active for operators of the electricity distribution networks until April 2015, when we replaced it with the NIA

Low Carbon Networks Fund (LCN)

The LCN Fund allowed up to £500m of funding to support projects sponsored by the distribution network operators (DNOs). The projects trial new technology, operating and commercial arrangements.

There are two tiers of funding under the LCN Fund. The First Tier covers small scall projects. The Second Tier is an annual competition for an porttion of up to £64 million to help fund a small number of flagship projects.

RIIO

Network Innovation Allowance (NIA)

The NIAs a set allowance each RIIO network licensee receives as part of their price control allowance. It's purpose is to fund smaller technical, commercial, or operational projects directly related to the licensees netowkr that have the potential to deliver financial benefits to the licensee and its cutomers; and/or

Network Innovation Competition (NIC)

This enables network companies to compete for funding for the research, development and demonstration of new technologies, operating and commercial arrangements. Funding is provided for those innovation projects which meet OFGEM evaluation criteria.

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