



The Ultimate Power Play

How Smart Grid Will Help Utility Companies Score Big With Customers

Remember the days when your customers had to call you to let you know their power was out? Thanks to smart grid, those days are ending. Picture this: before heading off to work, a customer gets a text from his utility provider that warns of an afternoon heat wave. The utility offers to begin cycling off the customer's air conditioner for 15 minutes each half hour during the peak demand period, then reset the thermostat to 78 degrees until 10 p.m. as a way to conserve power and save the customer money. While in line at Starbucks, the customer gets an alert on his smart phone that his home system, which his utility manages, turned off the lights his kids left on in their bedrooms. As the customer steps out of a 4 p.m. meeting, he sees a tweet from the utility indicating that demand response programs will be in effect until 9 p.m. and that the utility will buy excess energy from customer-owned renewables to help with the power surge. Before falling off to sleep, the customer checks his Google PowerMeter to view his energy savings.

Think this is fantasy? Think again. Utility companies are using scenarios like this to enroll customers in the ultimate power play—the smart grid. This technology gives utilities the ability to monitor and manage the state of their operations and transmission lines anywhere at any time. It alerts operators about power disruption events, even before customers know, and allows them to react instantly. And it lets utilities repair or bypass damaged equipment without having to dispatch someone to physically locate the problem.

While smart grid creates unprecedented opportunities for utilities to offer new products, and for customers and utilities to achieve sustainability targets, it also creates unprecedented challenges in the area of customer service. From call centers and staff training to the collection and analysis of customer data, smart grid has the potential to be a business boon or a customer bust. Just how you prepare for this intelligent technology could spell the difference between success and failure.

Smart Grid Delivers a New Level of Interactivity

Smart grid is the application of digital and software technologies, such as smart metering and energy management applications, to today's outdated analog grid of electric wires and transformers. Smart grid's two-way flow of energy and information allows utilities to more efficiently use their infrastructure.

On the other side of the meter, smart grid gives customers greater control and visibility into how they consume, manage, and in some cases, generate power. The information produced by smart devices allows customers to directly control consumption and businesses to achieve their sustainability goals. In a recent online survey of U.S. energy consumers, an estimated 95 percent of Americans said they were interested in receiving information on their energy consumption, and 69 percent said they would review detailed, real-time usage data if it were available.¹

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¹ Consumers Interested in Renewable Energy but not Prepared for Costs, Oracle press release, March 9, 2009. www.oracle.com/us/corporate/press/017964_EN

The ability to view and manage energy use is a natural progression and expectation of millions of customers who are comfortable using the Internet or cell phones to interact with service providers. In fact, many consumers already access online tools to see their energy consumption. These tools take customer usage data from the utility and place it onto a portal, where customers can see and interact with the information. Even though utility companies have no control over the tools, they can expect to field customer questions concerning the information published online.

With more granular data, utilities can closely monitor energy across the grid and charge variable rates throughout the day, which helps consumers save energy by setting appliances to turn off when rates are high. In many states, utilities will manage devices inside the home, such as shutting off appliances or changing thermostat settings to smooth demand.

But Smart Grid Will Be Disruptive

Smart grid is on its way, and it's moving fast. On July 16, 2009, the Federal Energy Regulatory Commission (FERC) announced plans to speed up smart grid development and give consumers tools to control electricity costs and reduce energy consumption. For a limited time, the American Recovery and Reinvestment Act of 2009 (ARRA) will fund projects that accelerate the build-out of the smart grid.

The rollout of smart grid creates disruption through new technology, new business processes, and new kinds of customer inquiries concerning the impact of smart grid on utility bills and service. Despite the promise of smart grid, many utilities are not yet prepared to handle the changes and challenges associated with implementation. Controlling devices across the grid and within a customer's premises requires access to more detailed information about customers and will generate a high volume of real-time information from a variety of sources. Utilities need updated infrastructure to capture information regarding customers, consumption, and related services, and to make the transition to an environment that provides customers and employees with the necessary information and tools to manage their energy usage. Doing this effectively will require significant changes in staff, systems, and business processes.

Changes in customer relationships are bound to occur as third parties enter the utility arena. Utility customers who access usage data on other companies' Web sites may begin to see this third party as the face of their energy provider. Third parties are already lining up to sell smart appliances and energy management devices directly to consumers. As customers adopt these devices, they are likely to turn to their utility companies for support, especially when a device doesn't result in demonstrably lower bills. This model mimics the experience of telecom network providers, whose customers purchase mobile phones from various manufacturers yet rely on their carriers for support.

Utilities unprepared for customer response to the smart grid face serious repercussions. Consider the case of Pacific Gas & Electric (PG&E), California's largest utility, which stopped installing smart meters in Bakersfield, CA after hundreds of customers complained of inaccurate readings and power bills that were higher than anticipated. PG&E faced a class action suit and a study on billing accuracy by the California Public Utilities Commission, despite subsequent testing that revealed the smart meters had a 99 percent accuracy rate compared to a 97 percent rate for traditional meters.² Those companies that manage to avoid such downstream complications typically reach out to customers proactively to help them understand the changes and prepare service representatives for customer inquiries.

Utilities Can Learn From Other Industries' Experience

A familiar truism states that those who learn from the past are better prepared for the future. To prepare for the impact of smart grid technology, utility companies need only study the lessons learned by other industries disrupted by new technology. During the 1960s, microwave communications was a disruptive technology that contributed significantly to the deregulation of the telecommunications industry. As the industry deregulated, telecoms transformed themselves from largely regulated monopolies into providers of multiple products and services. They strengthened customer relationships as they gained additional customer insight and designed products tailored to the needs of specific customer segments.

Consequently, the core business of the telecommunications industry grew to encompass wireless devices, networks, broadband, and video. Today, telecoms sell many wireless devices, including smart

² PG&E comments to a California State Senate Panel, April 26, 2010. www.pge.com/myhome/customerservice/meter/smartmeter/casenateappearance/

phones, PDAs, and data cards. They offer such wireless plans as voice-only, texting, data, and prepaid, and they bundle telephone, broadband and video services. This variety came from telecoms that exploited disruptive forces in the industry and remained relevant to their customer base with a broad palette of new offerings. Through business diversification and expanded customer relationships, they drove higher value throughout their supply chain.

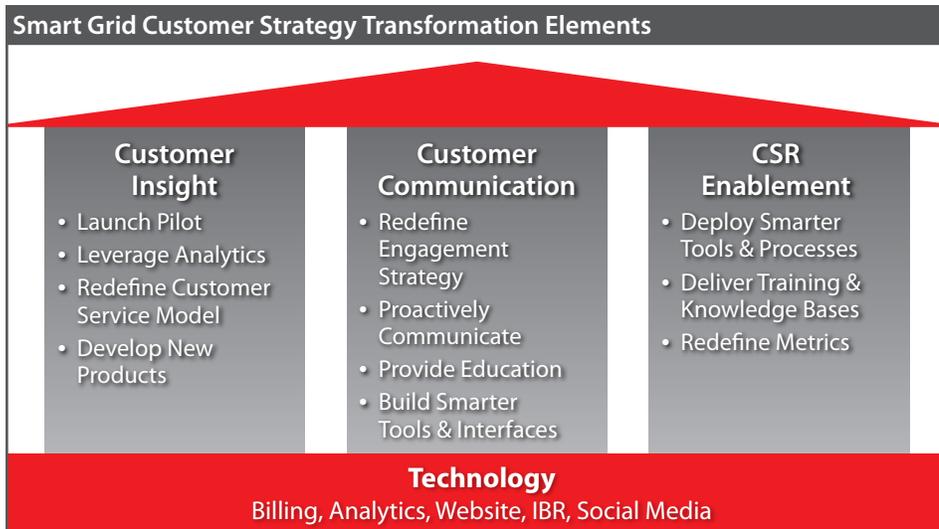
The utility industry faces a similar game-changer with smart grid. Newly introduced technologies, such as smart meters, renewable energy, automatic outage detection and resolution, dynamic pricing, and demand response, provide many benefits to utilities and their customers. Limited funding and the uncertainty of rate recovery will force utilities to prioritize their technology investments. Utilities that use market research and customer segmentation to determine the most-desired products and services of each will be better prepared to focus their technology efforts on the most sought-after products and services.

To support your customers throughout the smart grid transformation, you will need to reevaluate your customer service strategy and implement changes that provide customer education, interactive tools, and dynamic interfaces.

Utilities embarking on smart grid projects can learn from the example of companies that have experienced transformations and the associated challenges in gaining customer acceptance. They will need superior customer support, easy access to customer service representatives, and proactive communication on new products. Customers will expect richer interactions with the utility and real-time access to current account data and energy usage. They will need guidance on how to manage usage, choose pricing plans, and adopt energy efficiency programs. Customers will want to know what they can expect from smart meters installed in their homes as well as the advantages and dynamics of variable rate power pricing. And they'll want to know what choices they have and what tradeoffs they'll need to make.

Driving the Most Value from Smart Grid Requires a Transformation

Until now customers have assumed a role of passive interaction with their utility companies. As we've seen, that role is changing rapidly. To support your customers throughout the smart grid transformation, you will need to reevaluate your customer service strategy and implement changes that provide customer education, interactive tools, and dynamic interfaces. You need to hire skilled staff and implement the type of infrastructure that can help them achieve greater efficiencies through insight into business processes and customer interactions. The following diagram outlines the key elements of customer strategy that utilities need to reevaluate as they adopt smart grid.



Source: Verizon Analysis

Give Virtual Agents Another Look

“Analyzing conversation content between customers and virtual agents can unearth a broad range of intelligence, such as product issues, consumer sentiment, Website issues, and gaps in marketing communications.”

FORRESTER RESEARCH
 IT'S TIME TO GIVE VIRTUAL AGENTS ANOTHER LOOK. DEC 18, 2009.



Customer Insight

Prudent utilities can redefine their customer service model and identify new product potential through pilots and analytics that provide insight into customers.

Launch Pilots

Well-designed pilots can capture feedback on the value customers seek from their utility company as well as cost and benefit preferences related to product offerings. Since consumers have already expressed skepticism about the accuracy of new smart meters, you would be wise to consider installing smart meters side-by-side with existing analog meters and reporting the readings in parallel for several months. PG&E plans to install 150 double meters in hopes of winning customer confidence.³

Leverage Analytics

Smart grid technologies give utilities better insight into customer energy use. Applying analytics to this expanded data gives you a way to segment customers and develop products, services, rate plans, and promotions based on location, lifestyle, and energy consumption patterns. Unlike cell phone companies that regularly apply analytics to customer calling habits or large Internet retailers that track buying patterns, utilities are newcomers to large-scale, consumer-information-driven marketing. We suggest ongoing enhancements to your analytical capabilities, because you will want to tweak your marketing strategies to take advantage of new developments.

Redefine Customer Service Model

Smart grid calls for transforming your customer service representatives (CSRs) into customer advisors on new price plans and energy-efficient appliances. As customers inundate utility call centers with concerns about smart grid technology and new pricing, traditional customer service models will strain to handle call volumes. To remain cost-effective, utilities will need new service models that involve real-time interactions, demand response for controlling home appliances, and live connect/disconnect orders that save the need for a truck roll.⁴

Develop New Products

Smart grid technologies offer utilities the opportunity to develop new product lines. Prepaid metering, enhanced demand response, and home energy management systems are among the products energy companies are bringing to the marketplace, as evidenced at the 2010 DistribuTECH conference.⁵ As utilities begin to develop new and competing products, they will add value for existing customers, maintain control of the customer relationship, and earn additional revenue.

Customer Communication

Asking customers to foot the bill for smart meters as the country recovers from a recession is a predicament that calls for new customer engagement strategies that ease the smart grid transition through education.

Redefine Engagement Strategy

You likely have a customer engagement strategy, but has it been updated for the new messaging required for smart grid? Does it leverage the power of new technologies and social media? Consider using new-found customer insights to reassess the ways you engage your customers in discussion about the changes they will experience during your transition to smart grid. Understand the impacts of unfamiliar pricing models, such as dynamic and critical peak pricing, and demand response programs on your customers, and be ready to help them get on board with the changes.

Proactively Communicate

If any lesson can be learned from customer reactions to PG&E and Oncor, it's that utilities need to do a better job of communicating with their customers in advance of changing their meters. This communication should include the investments being made in the grid, how these benefit customers (e.g., more efficient generation and delivery, improved reliability), and the impact on rates and bills. For instance, Horizon Utilities in Ontario provides extensive communication before and throughout the smart grid transformation and offers a detailed explanation on its Web site of time-of-use pricing and its impact

Web Portals That Deliver Active Customer Information

"With nearly all Americans interested in receiving more information from their utility, application development professionals at customer-savvy companies are developing new Web-based services that provide outage alerts, billing views, and even troubled account notifications to customers through a variety of popular communication channels including email, SMS text, Twitter, and others. For sharing real-time energy consumption data, utilities can also use Web portals to deliver active information."

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IT'S TIME TO GIVE VIRTUAL AGENTS ANOTHER LOOK. DEC 18, 2009.

³ State Hearing on PG&E Smart Meters. KFSN TV-Fresno, California, April 26, 2010. abclocal.go.com/kfsn/story?section=news/politics&id=7406597

⁴ Lucero, Sam and Carlaw, Stuart, Smart Meters for Smart Grids, ABI Research, 2010

⁵ Peoples, Doug, New Smart Grid Solutions and Services Abound at DistribuTECH—Bring a Shopping Cart. Smart Grid News, March 24, 2010. www.smartgridnews.com/artman/publish/Key_Players_Vendors_News/New-Smart-Grid-Solutions-and-Services-Abound-at-DistribuTECH-Bring-a-Shopping-Cart-2068.html



on customers.⁶ You can alleviate customer concerns with cost-saving recommendations and explanations of new pricing factored into bills, such as those levied by a state's public utility regulatory agency.

Provide Education

To gain customer acceptance, you need to undertake significant market education programs prior to and during smart meter deployments. Education programs should highlight the advantages of switching to smart grid, such as energy savings and a reduced carbon footprint. A good way to engage customers is to transport smart grid labs or road shows to such public places as strip malls, state fairs, and expo centers. Utilities can partner with smart appliance manufacturers, green energy companies, and related businesses to attract more traffic and public awareness. Siemens Energy provides a model with its space-age traveling exhibit. The newly formed smart grid Consumer Coalition has also taken a leading role with educational initiatives designed to help customers understand and embrace the smart grid.⁷

Build Smarter Tools and Interfaces

Providing easier ways for customers to access information about power usage will go a long way toward building consumer confidence. Customers will appreciate self-service Internet portals and smart phone applications that help them accomplish such power management techniques as remotely changing thermostat settings or turning off specific appliances. Customers used to Web tools, including graphical displays of energy consumption and simulations of savings opportunities, are likely to expect live chat resources too. By giving your customers easy ways to monitor daily power usage and save money, you help them embrace the changes that accompany smart grid and streamline your own operations.

CSR Enablement

Your front-line CSRs need the infrastructure, training, and metrics to handle the new inquiries they will receive.

Deploy Smarter Tools and Processes

To become trusted advisors on new price plans, smart and energy-efficient appliances, CSRs need access to tools that monitor and analyze customer usage. A CSR's ability to make savvy recommendations will require real-time data about power usage inside a customer's premises as well as sophisticated analytical tools that exploit customer preferences. Providing the right levels of support and response via voice, email and chat requires well trained CSRs and new processes, such as intelligent contact routing, which routes calls to the agent who can best resolve the problem.

To prepare for the inevitable learning curve your customers will face requires seeking skilled support staff at the same time that you implement self-help videos, interactive applications, and other tools to offload calls from CSRs.

Deliver Training and Knowledge Bases

As customers navigate through the changes brought about by smart grid implementations, utilities will need CSRs who can answer technical questions about equipment and smart appliances. In turn, CSRs will need specialized training, tools, and information to effectively respond to customer requests. This new level of support will require greater call volume and longer call handling times than utilities have experienced in the past. To prepare for the inevitable learning curve your customers will face requires seeking skilled support staff at the same time that you implement self-help videos, interactive applications, and other tools to offload calls from CSRs.

Redefine Metrics

Efficient operation of the call center will be more important than ever as CSRs field a new level of customer query that significantly increases call times and volumes. Utilities need to be sure that their resources can keep up with demand and their call centers are operating efficiently. Metrics serve as key performance indicators for helping utilities determine if they have enough CSRs with enough training to handle the demand while effectively addressing customer concerns. Metrics help utilities

⁶ Horizon Utilities Web Site: www.horizonutilities.com/HHSC/html/tou/tou_prices.jsp

⁷ Tweed, Katherine, Smart Grid Road Show. Greentech Media, April 26, 2010. www.greentechmedia.com/articles/read/smart-grid-road-show/

measure such key factors as call response time, call duration, efficient troubleshooting, and customer satisfaction. To give CSRs the proper incentives to help customers requires redefining existing metrics. CSRs will have to take additional time with customers who call for guidance on rate plans and appliances, and first-call resolution may suffer, since customers are likely to make investment decisions over time.

Technology

Smart grid will have a profound impact on your systems and the amount of data you transport, process, and store.

Systems Impact

Two-way communication with smart meters, sensors, and grid control devices will require utilities to process and store much higher volumes of critical data than they currently handle. For instance, 750,000 meters could require more than a petabyte of memory. And sampling these meters twice per day would likely require more than 150 megabytes per meter per year. Higher sampling rates will require significantly more storage.

This newly acquired data presents opportunities and challenges. You can analyze your data to discern customer preferences and patterns, and you can use this business intelligence to offer new and attractive products and services. Some utilities are seeking help with data analysis and the billing process outside their industry. Duke Energy chose Convergys to support its smart grid billing platform rather than expanding its current one to accommodate these needs.⁸

A further impact involves Interactive Voice Response systems (IVRs). Utilities should expand IVRs to automate support and such updates as power restoration times. Offering customers education and alerts, including demand response times, through social media tools and text messaging can reduce call center volumes. When customers need your call center, intelligent call routing can improve efficiency by matching the call to the right specialist.

Ultimately, smart grid will inspire utilities, suppliers, and service partners to work together to fundamentally change the use and management of energy.

Choosing the Right Technology Partner

Although utilities have their own networks, systems, and infrastructures in place, smart grid will require a significant expansion of all three. To achieve quick scalability and time to market, utilities will benefit from working with a technology partner who offers strong, secure, and scalable products, services, and solutions as well as a solid track record for successfully connecting and integrating businesses and consumers on a global scale. In addition, hosted application management systems can help you accelerate your smart grid implementations while leaving the day-to-day management to experts.

Conclusion: Prepare for the New Customer Power

The transition to smart grid will impact all aspects of your business, from billing to infrastructure and customer service. You will have to work with advanced technologies, analytics, and metrics to maximize your investments. You'll need to educate customers on what to expect and how to derive the greatest savings from rate plans, smart meters, and smart appliances. And you'll need to give customers greater control and visibility into how they consume, manage, and even generate power.

Utilities can leverage the experience of the communications industry to better serve their customers and deepen customer relationships through new products and services. They can work with a communications partner to handle the daunting tasks of application development and the implementation of new software and hardware technologies. Ultimately, smart grid will inspire utilities, suppliers, and service partners to work together to fundamentally change the use and management of energy.

⁸ Duke Energy Selects Convergys to Support Smart Grid Initiative with Precedent-setting Smart Customer Information System. Convergys Press Release, September 15, 2009. www.convergys.com/company/news-events/newsroom/news_release.php?newsid=4700

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Verizon's energy and utilities practice is ready to help you meet the demands of this new energy era. In addition to contact center solutions, we have the expertise to help you develop and implement processes and next-generation technologies such as virtualization, security solutions, cloud computing, and unified communications. As a trusted partner, Verizon provides secure, robust hosted services, networked solutions, and real-world experience that help utilities economically accelerate their time to market. Smart grid is the ultimate power play, and Verizon can help utilities be on the winning side.

Take advantage of our suite of solutions to create vigorous internal infrastructure and processes and to get ready for the smart grid. To learn more about how you can quickly and efficiently move into this new energy era, visit our website at verizonbusiness.com/solutions/utility/ or contact us at energy&utility@verizonbusiness.com.

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Kyle McNamara is a Managing Principal with the Verizon Business Global Energy and Utilities practice. He has over ten years of management consulting experience in electric utilities and other industries for clients in the U.S., U.K., Canada, China, and South Korea. McNamara's extensive experience working with electric utilities to solve customer service challenges includes helping several Midwest utilities implement deregulation and solve issues resulting from the implementation of new billing systems. He has led efforts to design customer and billing strategies for major international companies, and he helped develop the customer analytics practice for a management consultancy. His other core competencies include business process improvement, business continuity management, and revenue assurance.

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