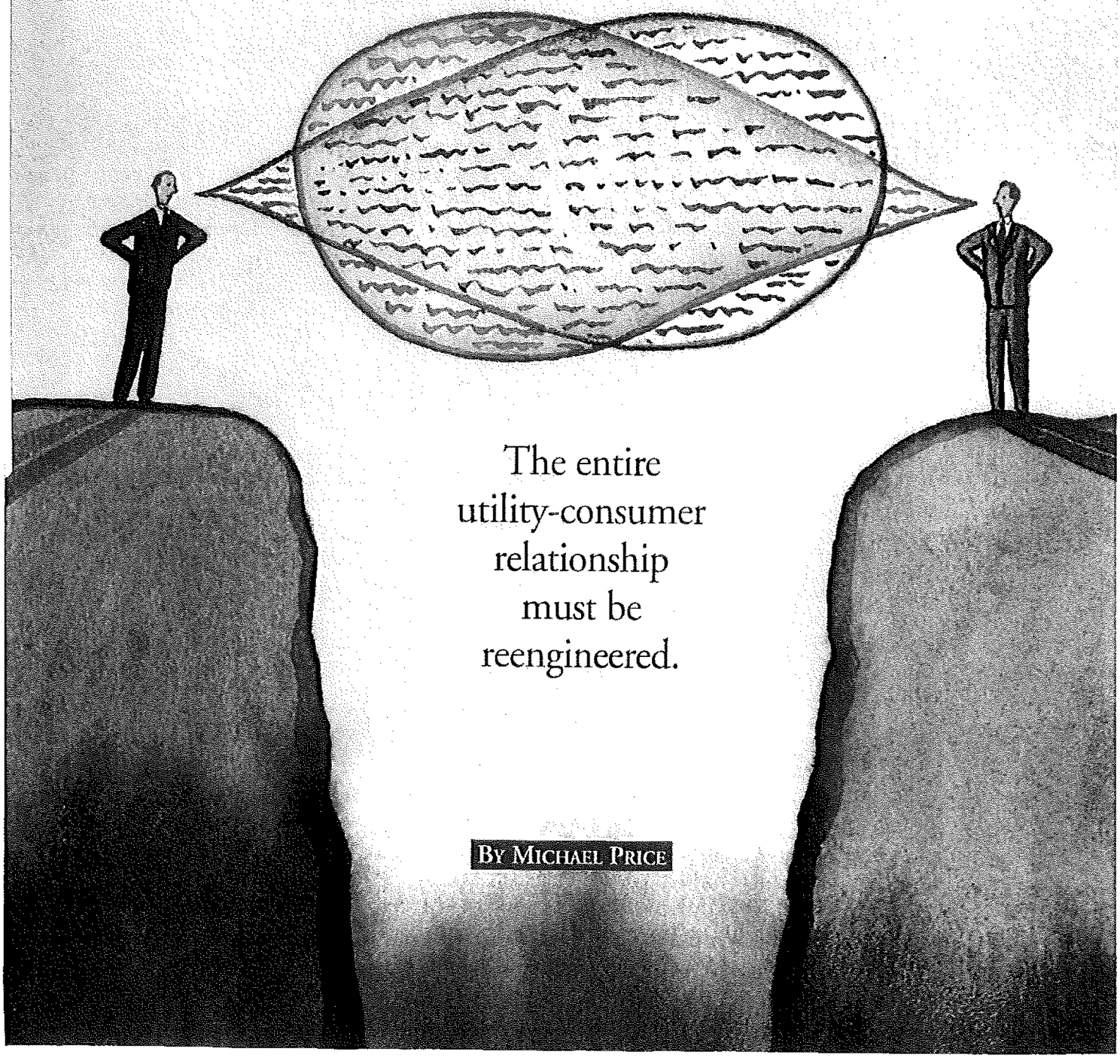
Bringing Customers On Board

Part II



The entire utility-consumer relationship must be reengineered.

By Michael Price

When *Public Utilities Fortnightly* published the author's article, "Bringing Customers On Board," last September, it was intended as a single work about the new utility business model known as "smart metering." Today, however, with the added hindsight of nearly a year's worth of experience, it's clear that a sequel is needed.

The initial idea was straightforward enough. Simply stated, the AMI business case can't be justified alone on operational cost savings to the utility. Rather, the success of smart metering—and indeed the entire smart grid paradigm—likely will depend on customer participation and buy-in.

That argument, presented last September in the first installment, still holds true today. But what has changed—what we have learned during the past year through hard experience—is the difficulty of winning over customers to the smart-meter world, and why it now appears that the utility, despite its best efforts, might not be able to do it alone.

Instead, to bring about a true smart-metering revolution, utilities likely will need to enlist their customers as partners in the campaign—partners who in turn will sell the vision to their peers through referrals, recommendations, and simple word-of-mouth. Think of it in terms of the Internet, and how the true success of a Web site or blog is measured in the degree to which it goes viral—how the strongest ideas have always been those that spread through social interaction, from one person to another.

Yes, utilities have made great strides during the past year through marketing campaigns, customer education, and awareness programs about energy efficiency, not to mention smart-meter rollouts, real-time pricing models, and managing selective field trials and pilot programs to demonstrate the new smart-metering technologies.

These traditional management techniques are fine as far as they go, but if that's all utilities are doing, they might not be doing the right things in the most effective way. What's needed is a facelift—a completely different view of how to bring customers on board.

The Utility-Customer Partnership

Let's begin where last year's article left off—with the AMI business case, and how it can't work without customers on board as equity partners.

Of course, AMI alone can yield certain cost savings through various process improvements, and most regulated utilities will eventually share these savings with end-use customers through future tariff reductions. But other critical assumptions regarding customer adoption and penetration to implement critical load management and effective rate structures are firmly linked to load shaping and energy management activities that require active customer participation.

Without customer education and engagement, smart-grid benefits will be impossible to achieve.

The first installment from last September highlighted the roles that customers and utilities perform to further the adoption of energy efficiency programs and energy management tools including: demand-response (DR) programs, such as critical-peak pricing (CPP) and peak-time rebate (PTR), as well as traditional direct load-control programs; in-home displays (IHD) and Web portals to support potential real-time pricing and consumption presentment; Web portals or home-area network gateways to support consumer business intelligence; and programmable communicating thermostats (PCT) or other smart devices and appliances to support DR programs.

Without these initial steps, the AMI business case is weakened. Expensive assets aren't offset by realized savings and a capable grid is not as smart as it could be.

Building a smart grid means creating a smart customer, and that implies two basic requirements: First, more timely and more accurate pricing information, including both historical and real-time consumption data; and second, better decision making by customers—which won't come about until they understand the implications of their actions (and inactions) both individually and in concert with other similarly motivated customers.

The utility has an obligation to make consumption information available to facilitate customer decision making and to drive customer interest, adoption, and required behaviours. But customers also must learn how to use new energy management tools, interpret data, participate in energy conservation and load-shaping and -shifting activities, and understand the value that AMI can bring. Without this customer education and engagement, the envisioned end-state benefits will be impossible to achieve.

In the case of AMI and smart metering, educating the customer isn't simply about letting them know a new meter will become part of their premise; it doesn't only take the form of a

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bill insert with attractive graphics; it shouldn't include only an email or letter that explains new functionality that is available on a Web site. Consumers need to understand how energy is procured, what they pay for each month (*i.e.*, beyond commodity charges), what regulators are requiring of utilities, and, perhaps, personalized attention inasmuch as possible, to bring them on board.

Action is required on both sides of the equation—the customer has a role to play and utilities must help to transition consumers from passive purchasers to informed decision makers. The entire relationship between the utility and its customer base must be reengineered. The industry's goal should be this: not only a smart utility, but also smart consumers.

The drivers for change aren't likely to diminish much from the perspective of the utility and regulatory agencies. Fuel costs will continue to rise; the recent pullbacks in commodity prices probably reflect current regional and global economic contractions. Yet worldwide energy demand continues rising, especially outside North America and Europe. While the economic downturn provided somewhat of a reprieve to the issues associated with increasing demand, this likely is only a temporary phenomenon and the long-term need to reduce demand remains a reality.

China is Asia's largest oil producer and second-largest importer of oil, while also tripling its coal consumption and becoming a net importer of coal. China is building the equivalent of one 1,200-MW coal-fired plant per week. Although the focus on China here is mainly to highlight the effect of increased demand on fuel costs, it should be noted that China has acknowledged that its pace of economic growth isn't sustainable, nor is its energy demands or pollution levels. China is diligently focused on multiple alternative and green energy projects, even while topping the list of global GHG emitters.[1]

U.S.-regulated utilities also face pressures, including renewable portfolio standards, energy conservation regulation, and general business pressures to improve operations and customer satisfaction.

It should also be recognized that many regional and local electrical grid improvement projects are focused on technology solutions in addition to or, in some cases, in lieu of AMI solutions. While AMI is considered a building-block platform and infrastructure to implement many advanced functions and capabilities for utility operations, AMI is a primary conduit that involves the end consumers and relies upon customer participation to realize AMI business-case benefits.

Representative smart-grid projects focused on enhancing the reliability of the U.S. national electric grid that don't necessarily rely upon direct customer involvement include:

- Expanded transmission systems to accommodate remote, variable generation sources;
- Distributed energy storage;
- Super-conducting high-voltage direct current power transmission;
- Advanced SCADA technologies;
- High data-rate synchrophasors;
- High-capacity fault circuit interrupters; and
- Installation of private data networks along utility rights-of-way.

Other sample projects that focus on non-AMI technology solutions that do involve the end consumer to a greater degree include:

- Integration of distributed generation, including solar and wind;
- PHEV integration; and
- Traditional load control.

Yet utilities still observe significant challenges related to customer adoption. A paradigm shift might be required to provide more effective strategies and approaches to engage customers.

Radical Change Management

Many utilities have accepted that real change is required and, as a result, they've developed a variety of customer outreach and education programs to expand the customer relationship. This is demonstrated by the attention the subject is getting in webcasts, presentations, and other public media. Some utilities are undertaking novel efforts to engage customers using, for example, incentive programs (*i.e.*, a point system) whereby consumers can earn points towards rewards that fit their lifestyle. Naysayers may claim that direct cash rebates or monthly bill reductions should have the same overall effect. Unfortunately, this assumption assumes a one-size-fits-all approach will be effective for all utilities and customers, which might not be true. Although it can be difficult to determine the most effective incentive mechanism (or mechanisms), such radical deviations from common approaches are welcomed and should be applauded.

Equally important is the vernacular that utilities employ to communicate with consumers—many consumers have positive associations with energy efficiency, cleantech and green energy, but also find terms like "demand response" and "critical-peak pricing" ambiguous, confusing, and sometimes even alarming. And according to a recent industry survey:[2] "Though more than two-thirds (of consumers) say they know how to optimize electricity use, only one-third know of programs to do so." Only knowledge drives action. Utilities are

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aware of a broad range of issues affecting customer adoption rates for DR, conservation and efficiency initiatives (*see "Customer-Adoption Checklist"*).

Yet, many utilities seem to expect significant and positive results without changing the way they approach the customer relationship. Is a paradigm shift needed? Is the platform burning?

The answer is yes.

With disruptive technologies comes a need for disruptive change management—non-incremental change to utility processes, strategies, and external interactions. And "interaction" is a two-way process, unlike the one-way approach to which utilities are accustomed.

There never has been a better time to reach out and engage consumers. While some suggestions might be considered radical by some and novel to others, they demonstrate new approaches to address consumer adoption issues that were recognized years ago by AMI early-adopters and continue to be some of the most important challenges facing utilities today.

Going Viral

Experience from the past year reveals three obstacles that stand in the way of the smart metering model—three obstacles that could prevent utilities from bringing customers truly on board: A) careless disregard of real customer concerns about privacy and security; B) naiveté in the conduct of field trials and pilot programs; and C) lack of face-to-face interaction between utility and customer—the sort of word-of-mouth communication that must occur if smart meters are ever to go viral and become entrenched in our consumer consciousness.

■ **Security and Privacy:** Whether right or wrong, fair or unfair, there's a lot of chatter about the utility becoming a Big Brother type of entity. One can see this fear readily through media coverage and the activities of consumer advocacy groups.

This fear remains largely a misperception, however, that utilities will make use of end-use consumption data to pass judgement on consumers—to classify them, stereotype them, and perhaps even use this information in ways not morally or legally acceptable. In fact, utilities aren't unlike other public and private organizations subject to data privacy and protection regulations.

Modernization of our financial, healthcare, and retail sectors—intimately linked to the management of personal consumption data—have taught the need for rules to govern how that data can be used and how it must be protected. Banks are entrusted to provide overdraft protection, automatic direct deposit, and automated bill payment. Credit card companies can identify retail spending patterns both by category and by location—and have the ability to reach out to cardholders if they observe unusual patterns deviating from the norm. Supermarkets use tailored online and point-of-sale coupons to be better aligned with the buying habits and personal needs of their customers. Most consumers expect their return on value to be increased, otherwise they might take their business somewhere else.

Likewise, utilities likely will use energy consumption data to improve services that most customers and lawmakers would consider valuable and acceptable. But in general, utilities are less concerned about why the consumer is using the energy, than about how much, and when energy is being consumed, because it's directly linked to energy generation and distribution costs.

Nevertheless, perception is often more important than reality. Utilities shouldn't simply skirt concerns about security and

Customer-Adoption Checklist

Utilities face a variety of challenges in seeking to improve customer-adoption rates in conservation, efficiency and demand-response programs. Some issues that merit attention:

- ☐ The need for effective customer education—*i.e.*, making customers understand they're part of the problem and part of the solution, in terms of consumption behavior, financial impact and societal issues.
- ☐ Overcoming the basic aversion to change;
- ☐ Answering "what's in it for me;"
- ☐ Executing new relationships with customers more frequently than the single monthly billing cycle;
- ☐ Routine messaging and interaction; and
- ☐ Anticipating and integrating the customer's voice.

Strategies for improving the effectiveness of demand-side management programs include:

- ☐ Rate design—incentive-based versus penalty-based;
- ☐ Communications—frequency, methods and channels;
- ☐ Customer segmentation—use of granular, AMI data to observe consumption patterns and match effective pricing schemas for customers;
- ☐ Program enrolment—mandatory, opt-in, or opt-out;
- ☐ Benefit quantification;
- ☐ Device ownership and cost recoup;
- ☐ Device functionality—proven, secure capability to support remote connect and disconnect, rate changes, information transfer and presentment and remote load control; and
- ☐ Customer control—provide business intelligence tools such as consumption presentment, what-if scenario analysis, and comparative analysis so customers can see the results of their decisions, whether such decisions involved actions or perhaps inaction.–*MP*

Smart-Grid Consumer Collaborative

A group of companies and organizations—including GE, IBM, Silver Spring Networks, the GridWise Alliance, the National Renewable Energy Laboratory and others—in March 2010 launched a new non-profit coalition to focus on building consumer acceptance of the smart grid. Richard Walker, president of founding member company, Control4, summed up the collaboration's mission when he stated, "There's been intense work and focus on the technology, energy efficiency and economic advancements the smart grid enables, but if we as an industry don't turn our attention to the consumer, to drive participation and acceptance, the real promise of the smart grid can never be realized." (*See, http://www.smartgridcc.org/.*)

Thus, a critical (missing) pillar of the smart grid solution has materialized. There are plenty of industry watchdog and advisory groups that continue to identify and design common standards for interoperability and integrations and there now exists a venue to address consumer adoption issues.

Jesse Berst, founding editor of *SmartGridNews.com* and acting director of the SGCC, noted in a recent webcast that recent consumer backlash continues to exacerbate the challenges utilities face and that adoption issues are more significant than initially believed. (*See, "Successful Strategies for a Changing Regulatory Landscape," eMeter, accessible at http://www.emeter.com/euwebinar-replay/.*) From California to Texas, The Netherlands, Germany, and Australia, events from lawsuits to consumer studies demonstrate customer dissatisfaction, misunderstanding and confusion. Customer education aimed at increasing adoption needs to continue with a renewed focus utilizing new, creative approaches.–*MP*

privacy. They must confront them head-on, with focus and clarity.

■ **Field Trials and Pilot Programs:** Technology field pilots are fairly common among utilities implementing AMI and smart-grid technologies. Field pilots were considered essential program elements by early adopter utilities embarking on AMI projects before the *American Recovery and Reinvestment Act* was launched to provide additional funds for energy infrastructure and demonstration projects. Now, with stimulus funds flowing, many more additional field pilots are being planned and executed.

The logic is simple and straightforward—test the solution with a sub-segment of the service area population to work out any bugs. Field pilots can be valuable and are based upon sound strategies that should be continued. However, they could be improved upon through format and scope re-design.

Traditional pilots seek to identify a geographic area or customer class to test varying technologies prior to rollout to the entire service area. Households and businesses participating in such pilots likely will be subject to the same technologies, programs, rate structures, and benefits to be tested by the utility. While the focus remains on proof of concept, performance, and scalability, the concept of customer adoption is typically seen as an associated benefit if the participants react favourably to the pilots. I believe, however, that including a control group, comprised of residential or commercial consumers who represent a do-nothing alternative, is necessary to expand the reach and effectiveness of customer-adoption efforts. In particular, the control group should be subjected to the same rate structures, real-time pricing programs, and peak-reduction events in scope for the pilot, but without the tools and technologies to participate in the programs. Instead, communicate frequently with these consumers about how their energy consumption behavior would be reflected in energy charges expected to become the norm with current and pending regulations.

Although this control group wouldn't be responsible for paying these charges, it provides an immediate comparison demonstrating how increasing energy costs can affect consumers if they don't become part of the solution. It seems likely that a consumer who is presented with a scenario of increasing costs might be more prone to want to actively participate in these programs knowing in advance what the future might hold for them.

■ **Face-to-Face Networking:** Web portals and bill inserts remain popular with utilities as channels for communicating with customers, but these traditional methods likely won't hit the mark. With the amount of information overload consumers currently face, one-way communications probably won't do the job of bringing customers on board to the world of smart metering.

Hitting the Road

Many companies and organizations are experimenting with various approaches to educating and engaging utility customers. For one novel idea, look to Siemens Energy, which recently announced a smart-grid roadshow—an exhibit contained in a space that is about 70 feet wide and 30 feet high, which showcases end-to-end smart-grid solutions.[3] The six-city Siemens tour is part of an ambitious smart-grid education campaign. "Visitors can experience the automation and distribution process from generation to transmission via videos, interactive demos, and educational sessions with Siemens experts and more," according to a spokeswoman. Although the exhibit is geared to multiple audiences, including utilities and T&D professionals, a specific focus on the end consumer is included—to demonstrate how energy generation through transmission and distribution occurs; to explain how customers are charged for energy; and to demonstrate technologies targeted at the con-

sumer level, how they work, and where the end consumer fits in the overall energy conservation equation.

This roadshow idea teaches an important lesson.

In the world of sales management, word-of-mouth marketing and referrals are widely regarded as the least costly, yet one of the most effective methods to achieve one's business goals, whether increased sales or market share. People rely upon social interaction to share ideas, accomplish joint and complex tasks, and, not surprisingly, to take action and make decisions. People who are considered trusted advisors, friends, or confidants frequently are sought to provide opinions and insights across a variety of topics, ranging from investment decisions to professional services for home contractors and auto mechanics. People rely upon the experiences of others to help provide context and insight that they themselves can't apply to a situation.

Utilities should consider enlisting the support of favorable or converted consumers to help communicate the value propositions associated with AMI, demand response, and other critical but sensitive issues relative to the energy imperative, and upon which the AMI business case is predicated.

The reality of advertising and marketing is that such efforts usually focus on conveying a single perspective—that of the entity offering the goods or services. Such media traditionally focuses on the value proposition the seller believes the potential buyer should understand and identify with, and, ultimately, is influential enough to cause the buyer to take action.

Referrals work a bit differently. The seller isn't necessarily the focal point; instead, personal experiences and opinions about a seller's goods, services, attitude, or capability become the focal point of the discourse. Pros and cons are often identified, and unrehearsed dialogue between the parties facilitates open and honest communication. Information communicated during such discussions is usually considered personal and relevant and should provide a higher probability that the person seeking the information will want to take action.

Utilities shouldn't simply skirt concerns about security and privacy. They must confront them head-on, with focus and clarity.

What better emissary could utilities hope to find than someone who has been there, done that?

Hearing the message from a consumer who has little to gain personally by sharing his or her positive experiences about demand response or energy conservation likely won't be regarded as Big Brother trying to exercise control.

The human element shouldn't be underestimated. The power of social networking and referral has been demonstrated time and again.

In the future, neighbors might offer to walk each other through a new utility Web site to explain how to use new energy management tools and save some money. Or perhaps consumers could read an email, blog, wiki, or social-network message from a relative who goes on and on about the cool in-home display that lets one know in advance about a critical peak event and how the pool pump was turned off providing extra cost savings and a rebate.

When the customer beomes become part of the process, consumers might become more interested, and less reticent to see how they can benefit—and become part of something bigger and better.

Endnotes:

1. See "National Climate Change Programme" *etc.*, accessible at Pew Center on Global Climate Change: *http://www.pewclimate.org/policy_center/international_policy/china.cfm.*
2. "Understanding Consumer Preferences in Energy Efficiency," Accenture survey, April 2010.
3. Katherine Tweed, "Smart Grid Road Show," *greentechgrid*, Apr. 26, 2010, accessible at *http://www.greentechmedia.com/articles/read/smart-grid-road-show/.*