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Lighting the way

Understanding the smart energy consumer

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Lighting the way

Understanding the smart energy consumer

By Michael Valocchi, John Juliano and Allan Schurr

Almost 70 percent of 5000 respondents in our 2008 Global Utility Consumer Survey are willing to experiment with how they interact with energy providers. Many consumers have specific visions of what they want – and how much they will pay for it. Their attitude change coincides with rising environmental and economic urgency that is focusing attention on energy infrastructures across the globe. To satisfy the smart energy consumer and stay competitive, utilities must plan now to encourage beneficial consumer behaviors, leverage customer analytics and segmentation, and understand the enhanced customer interactions – all vital in a participatory utility network where consumers, utilities and service providers share responsibilities and benefits.

Persistent climate change concerns, volatile energy prices and a growing awareness of technological advancement in energy are leading consumers across the globe to reconsider their role in the electric power value chain. Influenced by their experiences in other industries, they are willing to assume new roles and be more involved with providers and technology.

At the same time, due to global demands for climate change mitigation, the need to support aging networks and some government stimulus plans for weakened economies,

substantial increases in investment in utility infrastructure are likely. For energy and utility companies, this presents a historic opportunity to encourage new, mutually beneficial behaviors and create business models to meet new consumer demands.

Our 2007 report, “Plugging in the consumer: Utility business models for the future,” explored the radically changing relationship between consumers and energy providers. Even during the global economic downturn, progress has continued along the two dimensions shaping these changes: *technology advancement* and *consumers’ desire for more control*.

To continue our research about consumer expectations of energy providers, we launched a second survey in the fall of 2008 (see “The 2008 Global Utility Consumer Survey”). We found that the major influences on consumers’ decisions about taking control of their energy experience have not changed much: respondents still believe energy prices are more likely to rise than fall and a strong majority value environmental considerations in their choices of products and services (though economic pressures have made them less likely to pay premium prices to meet their goals).

In combination, our survey findings suggest strongly the historical view of customers as like-minded is not sustainable – it is already outdated in most places. As a result, utilities must plan now to:

- Understand and encourage new consumer behaviors that will be important in the future industry environment
- Invest in customer analytics and segmentation to assess the current consumer base and lay the foundation for continual reevaluation
- Initiate a program to analyze enhanced and new customer interactions that will take place over a more dynamic and data-rich network.

Generation, network and metering technology available today provide tremendous opportunities to improve capabilities and convenience for residential and small business customers. Realizing this potential, however, requires shifting emphasis from utility-controlled decision factors to consumer-driven ones.

The 2008 Global Utility Consumer Survey

We launched our second Utility Consumer Survey in fall 2008 to assess how changes in the economic environment, persistent strong messages on climate change and increasing technological awareness of consumers are further influencing consumer expectations of energy providers. This time, we surveyed an “expanded group” of over 5,000 customers, which included the “core group” of the six countries from our 2007 survey – the U.S., the UK, Germany, the Netherlands, Australia and Japan) – plus Canada, Denmark, Belgium, France, Ireland and New Zealand. Questions covered a range of topics, including consumer preferences for green offerings (both energy-related and in general), future views on costs, usage and control options, sources of information on energy, and willingness to pay for new products and services.

Lighting the way

Understanding the smart energy consumer

Understanding and encouraging new behaviors

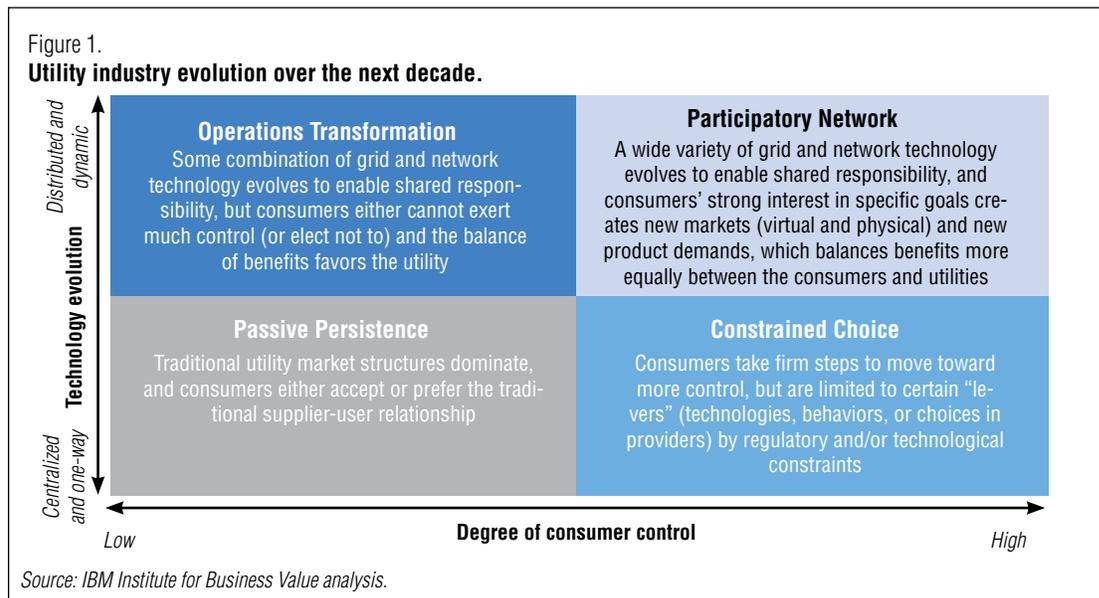
Four utility industry models

To understand and encourage beneficial new consumer behaviors, energy providers must recognize that technology evolution and increasing consumer control are pointing to the emergence of four industry models (see Figure 1). As described in our 2007 report (see Related publications section), they are:

- *Passive Persistence* – Traditional utility market structures still dominate and consumers either accept or prefer the historical supplier-user relationship.
- *Operations Transformation* – Some combination of grid and network technology evolves to enable shared responsibility, but consumers cannot (or elect not to) exert much control.

- *Constrained Choice* – Consumers take decisive steps toward more control, but are limited to certain “levers” (technologies, usage decisions or choices in providers) by regulatory and/or technological constraints.
- *Participatory Network* – An interconnected environment characterized by a wide variety of grid and network technologies enables shared responsibility and benefits.

Though each is described distinctly here, for at least the near term the industry will be represented by various combinations of the four models in different parts of the world. Ultimately, increasing demand for control by consumers and continual improvement in technology will result in movement of the basis of the industry to the upper right quadrant – driving the creation of entirely new markets (virtual and physical) and products.



Customer goals in a participatory network

In our surveys over the past two years, many consumers demonstrated at least one goal or trait associated with asserting more control over their energy usage. The features of a participatory network appeal tremendously to them, because it would offer abundant service options and information to manage energy usage according to specific goals, such as cost reduction or environmental impact.

In order to best align societal benefits, customer needs and company goals, providers must leverage consumers' newfound openness to change, and then provide information, influence behavior and teach consumers new ways to meet their goals. For example, increasingly common customer goals are minimizing cost and "carbon footprint" (estimated greenhouse gas emissions produced by daily activities). Both conservation and shifting energy-intensive work to an off-peak time can help the customer meet these goals while directly supporting utilities' efforts to limit peak load growth and prepare for a carbon-constrained operating environment.

In their book *Nudge*, Richard Thaler and Cass Sunstein promote the idea that small changes to individuals' perspectives can cascade into major shifts in behavioral patterns for entire populations. Several of their examples are about managing energy usage, such as one utility's visual device that glowed red when usage passed a certain threshold.¹ In just weeks, they reported, those with this device reduced their energy use by 40 percent at

peak times. Since consumers have a renewed curiosity about energy and are willing to change behavior, now appears to be an optimal time to "nudge" consumers in ways like this toward behaviors that benefit everyone.

Thaler and Sunstein also mention another device that simply displays energy usage and allows it to be transmitted to the Internet, facilitating a sort of "conservation competition" that would benefit both the user and the provider.² Linking such capabilities with Internet-based personal communications – for example, posting usage on a blog, Twitter, or Facebook – is particularly appealing to the habits of the Millennial Generation, usually defined as those born starting in the late 1970s through the 1990s. As we will show, these young people are well-prepared to embrace new participatory network-enabled services. In addition to the immediate benefits, such offerings build the provider's reputation as both aligned with the consumer and forward-thinking both technologically and socially.

Managing usage to reduce costs

In our 2008 survey, cost remains the most powerful motivator for desire for control and willingness to change behavior. Four in five consumers would change the times at which they do energy-consuming housework in exchange for large savings (50 percent). This pattern did not vary much by income level – those in the upper 5 to 10 percent of the respondents' national income distribution were as open to such change as those below median national income. Even for a small discount (10 percent) for changing time of usage, about half were willing to do this. These numbers were virtually unchanged from 2007.

In both years' surveys, consumers consistently expressed the desire to exert more control over energy usage to reduce costs and environmental impact.

There is not much evidence that consumers think lower rates are in store for them; only 6 percent think that over the next five years, their bills will increase more slowly (or decrease more rapidly) than their usage, while over half see the cost increasing roughly at the same pace as usage. Forty percent see their bills increasing more rapidly than their usage (or not decreasing as much as any reduction in usage).

Overall, 2008 respondents have a slightly more pessimistic view of the next five years than those in 2007, more because of expected increases in consumption than to any apparent change in perspective stemming from energy price surges in the summer of 2008. Two-thirds see their bills increasing over the next five years, versus 59 percent in 2007; however, in 2008, 38 percent see usage increasing versus 30 percent in 2007, so the differential between the two years' numbers is the same.

With the prevalent feeling that prices will move inexorably upward and awareness of smart meters growing, over 90 percent of respondents indicated that they would like a smart meter and tools for managing their usage, with 55 to 60 percent of these respondents willing to pay a one-time or monthly fee for that capability. Consumers are largely indifferent to which form this control takes – the percentages wanting this service via a dedicated control panel, a home computer interface or a smart meter automatically controlling devices are essentially the same, although there are some differences across age groups.

Managing usage to reduce environmental impact

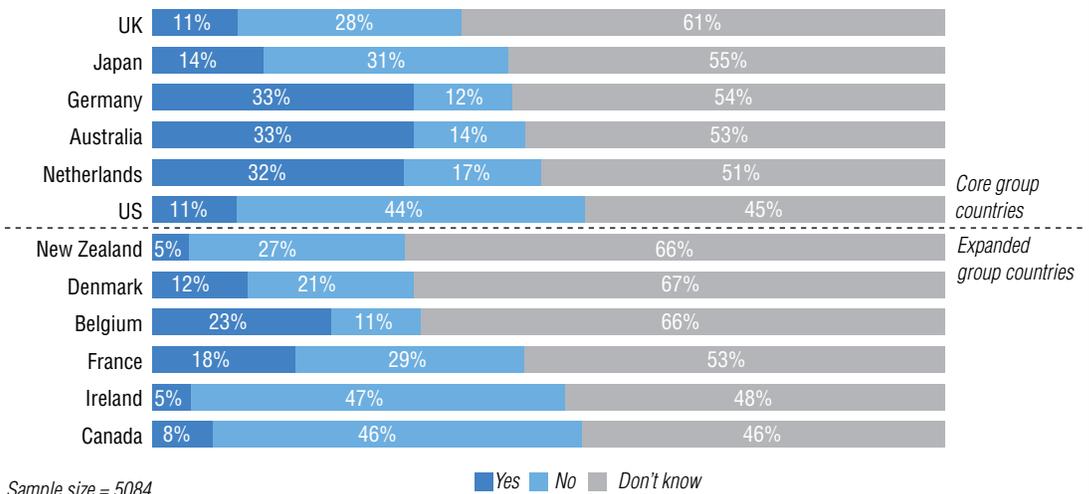
The emphasis on climate change is as strong now as with consumers in our 2007 survey. It is also fairly consistent across our expanded group of countries. For ten of the twelve countries, between 65 percent and 75 percent of respondents stated that environmental factors are "important" in purchases of non-energy products (only the Netherlands, at 64 percent and Canada, at 78 percent, fell slightly outside that band).

The availability of renewable energy programs in response to this demand for more carbon-neutral products remained about the same year to year. Across the core group countries, the percentage reporting that they did not have renewable power programs available dropped from 21 percent in 2007 to 16 percent in 2008. Rather than increasing the percentage of affirmative responses, however, most of the movement was to the "Don't know" response (up to 50 percent, from 46 percent in 2007). Responses of the expanded group countries were consistent with those in the core group (see Figure 2).

According to industry experts in some of the countries surveyed, the high level of "Don't know" responses in part reflects doubts in some countries about the veracity of green power claims. Still, if to a larger extent these customers truly cannot answer that question, this could indicate a valuable opportunity lost to ineffective communication with customers in countries with significant renewable resources and high participation levels.

FIGURE 2.
Availability of renewable energy by country.

Does your electric power provider offer renewable energy sources (such as solar and wind power) as an option for your household energy use?

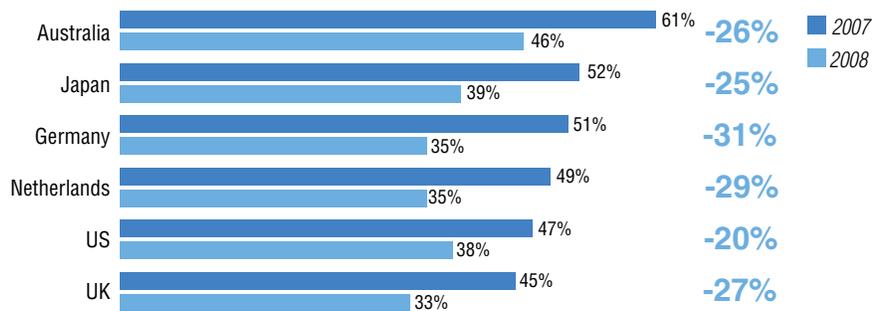


Sample size = 5084
 Source: IBM 2008 Utility Consumer Survey.

The impact of the global economic downturn of 2008 is clearly competing with the environmental concerns of consumers. Across the core group countries, the number of consumers paying a premium for green products and services is down 20 to 30 percent (see Figure 3).

This change in spending patterns also seems to influence perceptions of green power options among consumers from core group countries who do not have (or are unsure if they have) green power options. The percentage of these respondents who say they want green power options is down

FIGURE 3.
Percent of respondents who pay more for environmentally friendly products not related to energy.



Sample size = 3345 (2008), 1893 (2007)
 Source: IBM 2008 Utility Consumer Survey.

slightly, from 85 percent in 2007 to 78 percent in 2008. But, during that one-year period, the percentage of those willing to pay an additional 20 percent or more monthly dropped by nearly two-thirds, from 16 percent to just 6 percent (see Figure 4).

The percentage of those with green power options who actually buy them remained about the same, however. This is not surprising, given contractual commitments, significantly higher prices for non-renewable fuels in the past year (which eliminated some of the cost differential between standard and green power), and the overall commitment to the environment expected of buyers of green power.

Still, prudence in launching new green programs may be wise until the global economy is in recovery. Extended recessionary conditions or further deterioration in consumers' incomes might suppress acceptance of higher-cost programs until conditions improve.

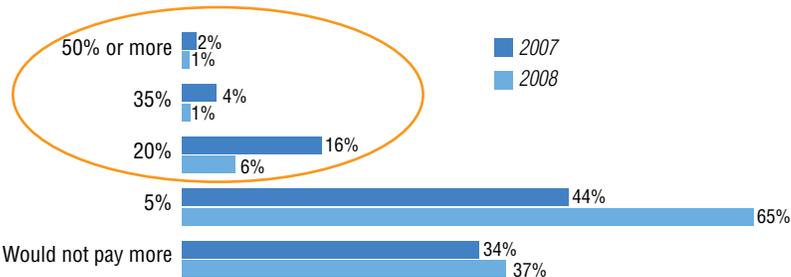
Analyzing and segmenting consumers

The emergence of new industry models requires utility companies to abandon the historical view of residential and small commercial customers as largely homogeneous. In "Plugging in the consumer," we described an emerging segmentation comprised of four consumer types: Passive Ratepayers, Frugal Goal-Seekers, Energy Epicures and Energy Stalwarts (see Figure 5). Our 2008 survey results reinforce these segments as likely outcomes of current trends.

Two main attributes are associated with variances in consumers' behavior profiles:

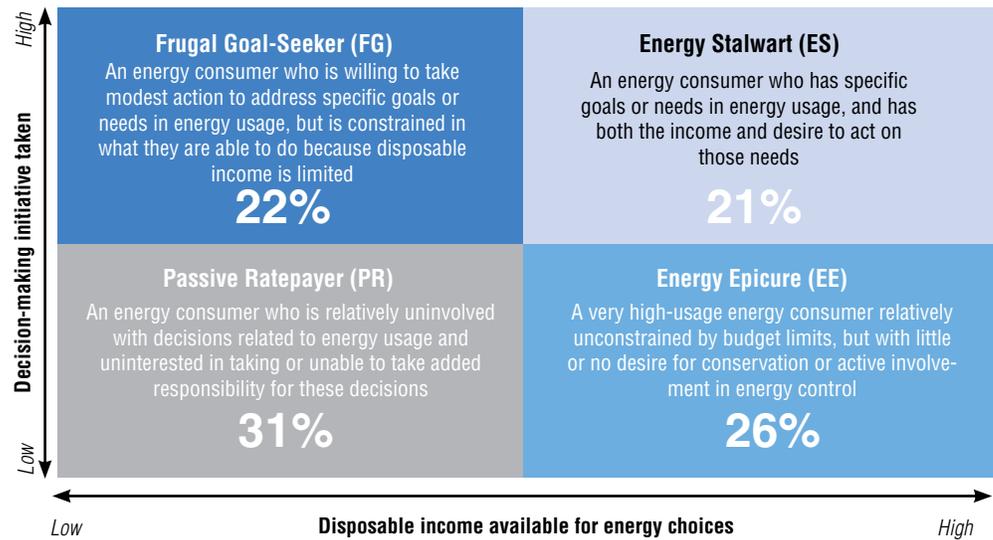
- *Personal initiative* – A consumer's willingness to make decisions and take action based on specific goals, such as cost control, reliability, convenience and climate change impacts.
- *Disposable income* – A consumer's financial wherewithal to support energy-related goals; in early adoption phases, only those with sufficient resources will be able to implement new technologies and buy more expensive products.

FIGURE 4.
Willingness to pay premiums for green energy.
How much more would you be willing to pay for green power? (percentage of respondents)



Sample size = 5084
Source: IBM 2008 Utility Consumer Survey.

FIGURE 5.
Types of residential and small commercial energy customers.



Sample size = 5084
Source: IBM 2008 Utility Consumer Survey.

We also found that other demographic characteristics – such as age and country of residence – affect the speed of technology adoption, ability to leverage control “behind the meter,” goals embedded in accepting more responsibility for energy choices, and more.

Consumer profiles

Passive Ratepayers (PRs), who embody a *passive preference for the status quo*, remain the most prevalent of any of the four consumer archetypes. However, we see a remarkable transition in progress: in the past, these typically uninvolved, acquiescent customers comprised virtually 100 percent of the customer base – they represent just 31 percent of our 2008 survey respondents.

It is eye-opening that almost 70 percent of customers would like to take advantage of what might be offered in a partnership that differs from the traditional utility-customer relationship. Even before regulatory structures

and technology deployment permit advanced capabilities to be rolled out to the consumer in the form of new products and services, a groundswell of demand is emerging. The demand is neither even nor universal, so customer segmentation work is vital to determine who wants what.

The number of more engaged and goal-oriented customers all along the income spectrum is approaching one-half of the total customer base. Frugal Goal-Seekers (FGs), about 22 percent of the 2008 survey population, have limited resources but strong will to change the way they use energy and manage its consumption. This group desires *low-cost control of energy choices*.

Energy Stalwarts (ESs) have enough strength in both will and wallet to proactively take measures from making simple efficiency improvements to generating their own electricity. They have a clear willingness to invest

A groundswell of demand is emerging for new consumer products and services in advance of regulatory and technological change.

in energy choices, and represent about one in five consumers surveyed. Both FGs and ESs will strongly influence the other half of consumers as they succeed in meeting their goals.

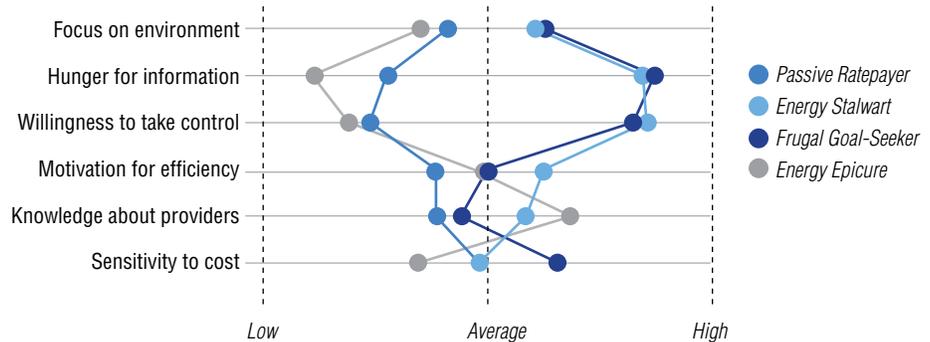
The remainder of the respondents (26 percent) are Energy Epicures (EEs), who are *curious but not committed* in the sense that, while they actually demonstrate more knowledge about their provider and options than the any other group, they do not share the cost concerns or clear desire for information and control. This appears to be a matter of choice and not ignorance. While passive in some ways, this group is open to experimentation in others, particularly when the cost and lifestyle impact of a behavioral change are low. Whether EEs gravitate toward ESs (if their early experimentation has results that spur additional involvement) or simply continue to add new energy-consuming devices into their home while abstaining from (or postponing) moves toward more active management of energy usage, they will remain high-revenue-producing customers for years to come.

Key consumer attributes by segment

In order to evaluate and compare various tendencies of the four consumer types, we used a scoring system to quantify the relative response to similar questions based on six key attributes (see Figure 6):

- *Focus on Environment:* Interest in green products and willingness to make changes to reduce personal environmental impact
- *Hunger for Information:* Desire for more frequent and more detailed information about the cost and impact of personal energy usage
- *Willingness to Take Control:* Motivation and desire to actively manage energy usage, cost and environmental impact
- *Motivation for Efficiency:* Willingness to take steps to increase energy efficiency through some combination of lower-cost and higher-cost actions
- *Knowledge about Providers:* Overall awareness of energy providers and options that the providers make available to manage efficiency, environment and cost
- *Sensitivity to Cost:* Sensitivity to overall cost of energy or options to actively manage it.

FIGURE 6.
Respondent scores for key attributes.



Source: IBM 2008 Utility Consumer Survey.

Personal initiative and income will drive change in the short term, but even more radical changes may be ushered in as the Millennial Generation ages.

The role of generational change

While in the short term, changes in customer needs will occur based on personal initiative and income, in the long run, even more radical changes may yet emerge as the Millennial Generation continues to move into adulthood and the energy customer base. By varying definitions, the first wave of these information-hungry, technology-savvy consumers is somewhere in our 25 to 34-year-old demographic grouping and fully encompasses the 18 to 24-year-old age group.

Precisely at this juncture, we see major changes in the survey results related to the ways consumers learn about companies and products, what they value and what they will pay for, as well as how they communicate with each other and the companies with which they do business. This, ultimately, may give way to new consumer segments that will influence the shape of the industry in ways unimagined just a decade or two ago.

Understanding customer interactions in a participatory network

As utilities and regulators begin the process of moving from the existing infrastructure base toward a participatory network, one of the most important questions in the public debate is, “What are the societal benefits of these investments?” Both customers and company shareholders need to see clear value in these investments. Utility companies and other product or service providers need some idea of how programs will be received by customers prior to rolling them out – including an understanding of those groups to which they most appeal – so that marketing and awareness campaigns can be effectively launched.

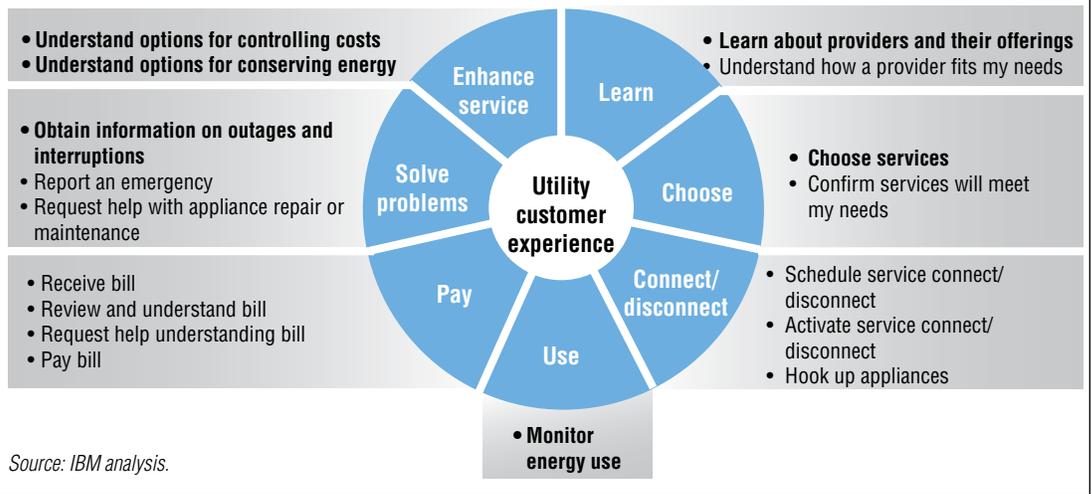
To effectively determine the best strategy for a customer-focused transition to the participatory network of the future, every provider of energy or related services will need to construct an inventory of existing customer interactions with the spectrum of current and future providers. They must also understand how customers get information from governments, the media and even one another.

These will collectively shape the customer experience and pinpoint wants and needs inherent in the experience they will find most satisfying. Figure 7 shows a representation of a generalized electric utility customer experience. In the following sections, we outline how specific consumer segments view the benefits and costs associated with key interactions (those in bold text).

Learning about providers and their offerings

Important messages from providers do not always reach consumers, as evidenced by consumers’ lack of awareness of available green power options (see Figure 2). In addition, only one in six consumers foresees a decrease in usage over the next five years, and only about a third say their provider can help them save energy – this despite strong efforts by the industry and governments to promote energy efficiency through utility providers. In particular, provider messages are not reaching the youngest consumers: those 18 to 34 years old are 40 percent more likely to not know whether they have choice in providers than those 35 and older – and twice as likely to not even know their provider’s name.

FIGURE 7.
Key interactions comprising the utility customer experience.



How providers communicate to consumers the effectiveness of new business models, programs and services is critical to the success of the participatory network. Thus far, performance in communicating options to consumers is mixed, with the problems noted above contrasted by some recent success regarding provider choice in the Netherlands and Germany. While four of the six core group countries had similar results on reported availability of retail choice in 2008, both the Dutch (80 percent reporting yes, up from 56 percent) and German (80 percent reporting yes, up from 61 percent) respondents perceived much higher levels of availability of competition.

In both cases, the numbers of consumers "getting the message" have clearly been bolstered by intense competitive moves of late. In recent months, providers in the Netherlands engaged in vigorous direct marketing (particularly by phone), approaching potential new customers with special offers to switch.

German companies did not conduct the same level of direct marketing, but advertising is increasing. More German customers are being introduced to Internet portals through which customers can quickly check pricing for their region and switch online with minimal inconvenience.

While all age groups will continue to rely heavily on their providers for information about energy (85 to 90 percent of respondents indicated this was a likely source), reliance on other sources differed starkly. For example, while 28 percent of respondents over 55 (more than one in three over 65) consider their governments a trusted information source on energy matters, only 16 percent of those under 25 would use this source regularly.

Conversely, ten percent of those aged 18 to 24 were likely to view fast-growing Internet-based collaborative platforms such as social networking and online video content – often referred to as Web 2.0 – as important sources.

This is three times the rate at which those over 45 expected to use these technologies. Similarly, those ages 25 to 34 expected to go to their now-familiar Facebook, Ning, YouTube and Revver arenas to gather energy information at almost twice the rate of the 45-plus group.

Those over 55 are more than ten times more likely to look to governments for energy information than to social networks and other Web 2.0 content, while current trends imply that those under 25 are becoming almost as likely to use the latter as the former. To reach all generations, companies need to understand how different consumers tend to educate themselves about providers and their offerings with the wide variety of media available.

Choosing services

Evaluating what services consumers will embrace – and which they will ignore – will be a tricky proposition in coming years, since they are not accustomed to making more complex decisions about their energy services than when to pay the bill, and how high or low to set the thermostat. Questionnaires can be useful in determining relative levels of interest, but more must be known about consumers before revenue estimates can be properly formulated.

For example, in both 2007 and 2008, we asked consumers who did not have the option to buy green power if they wanted that option. We found in both years that the percentage of people who say they *want* that option was twice the percentage who *actually purchase* it if given the opportunity.

Clearly, many respondents are likely to change their minds once the option is offered to them, perhaps because they do not value

it enough to pay a premium. This is understandable, since 30 percent of green power purchasers in this survey indicated that the annual impact on their electric bill is as high as a 20 to 50 percent increase. Once these amounts become real rather than theoretical, a consumer may pull back from an option that seemed previously to be a great idea (see “Turning consumer information into valuable intelligence”).

Turning consumer information into valuable intelligence

To try to predict who would be *most likely* to purchase when given the option, we applied a simple screen to the set of interested respondents currently without green power. We called those who passed the screening “Green Leaners.” We excluded from this group those who expressed interest in green power, but act in ways that indicate likelihood that they would ultimately not be willing to pay more for it.

We then compared Green Leaners to actual green power buyers to establish whether their behavior was similar. Indeed, all of the differentiating characteristics of the actual green buyer group were seen in the Green Leaners. Furthermore, among those without green power options, the ratio of Green Leaners to likely non-buyers closely matched the ratio of buyers to non-buyers among those with green power options.

This suggests that simply surveying consumers’ interest in green programs may not provide an accurate barometer of their ultimate uptake. But it also demonstrates that close examination of the respondents’ behavior in related areas may make this distinction somewhat predictable (at least in the aggregate), even without specifying a cost (which may not be known with certainty at the time of a survey).

Over half of consumers are willing to invest in better energy usage monitoring and management – some on their own, some with the help of an outside party.

Our green power example shows the importance of evaluating peripheral consumer actions to determine the true demand for a product or service – predictions that can be complicated by consumers' inexperience with such decisions. Expecting a certain level of imprecision in their responses about any program can help providers avoid over-estimating the willingness of consumers to pay for new products and services, and allow for better match of investments to likely returns. Even better, we found that learning more about consumers' overall preferences and evaluating that data can help providers form more tenable estimates of achievable revenues.

Monitoring energy use via a service provider

Another service model in which consumers expressed interest is the monitoring and management of energy usage toward a particular savings target by some party other than the consumer. While more consumers were interested in a smart meter at no cost than this monitoring and management service for free, more consumers were willing to for this service than for smart meters (20 percent had “strong interest” in this program at US\$5 per

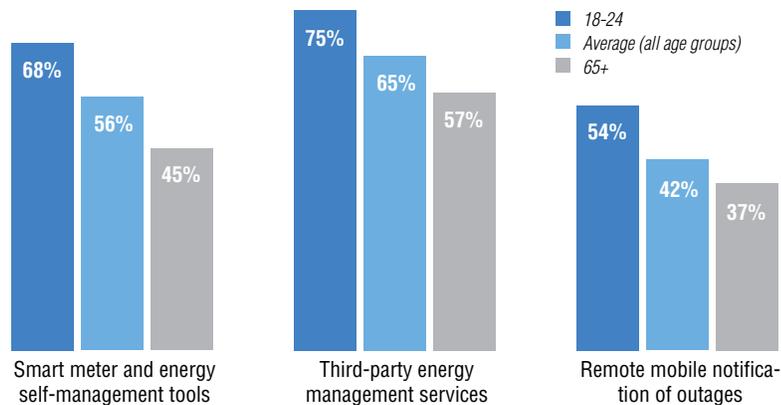
month, versus 13 percent for a smart meter at the same cost).

This may suggest that consumers are uncertain of their ability to save money with a smart meter on their own, but if an expert takes control and provides some guarantee of savings, their confidence may be higher. Alternatively, it may be that providing an inexpensive, simple avenue for saving energy to a particularly energy-hungry consumer can be an attractive proposition for both the consumer and the provider.

Understanding options for controlling costs and conserving energy

Not surprisingly, those age 18 to 34 were most eager for the types of “self-service” and automated energy management that smart metering and smart grids will bring; after all, these young men and women have grown up with technology-driven interactivity with the world as an essential part of their lifestyle. What may be surprising, however, is that this age group – and particularly those under 25 – is the most a *willing to pay* a stated premium for these services of approximately US\$100 as a one-time fee, or a monthly fee of US\$5 (see Figure 8).

FIGURE 8.
Willingness to pay for specific services across age groups.
Percent of respondents that would pay a monthly fee for specific services.



Source: IBM 2008 Utility Consumer Survey.

The fact that well over half of the under-25 age group is willing to pay these premiums is remarkable because they generally have lower incomes; 72 percent of the youngest respondents had incomes below national median household incomes, versus 51 percent of the rest of the groups. Compared with the percentage of highly-motivated FGs below the median income level (66 percent), one would expect this age group to be about as willing (maybe less) to pay for smart meters and their associated tools than FGs. But under-25s overall are about 15 to 20 percent more likely to pay than FGs – in fact, they are even more likely than comparatively wealthy and motivated ESs by a few percentage points.

Obtaining information on outages and interruptions

Having a message sent to a mobile device when power is out at the consumer's home also garnered significantly higher interest from the under-25 age group (about 30 percent were more likely than the other age groups to be willing to pay US\$1 per month for such a service). This finding may be related to the generally higher willingness we observed of younger age groups to subscribe to these programs, to their higher rate of ownership of mobile data devices and plans (over 80 percent higher mobile device ownership, 45 percent higher mobile Internet plan subscription),³ or a combination of the two.

Investing in the consumer

As people around the planet seek ways to increasing the efficiency of all kinds of systems that affect their everyday activities, substantial increases in investment in utility infrastructure are likely. These investments, however, will come with a great deal of public, regulatory and shareholder scrutiny. All of these stakeholders will want to know how the public as a whole can benefit.

Some of the historical focus on operational improvement and cost reduction will shift toward societal benefits as calls intensify for improved capabilities and convenience for residential and small business customers. Energy and utility companies will need a strategy for aligning customer wants and needs with technology deployment roadmaps, beginning with rigorous customer segmentation and building an inventory of customer interactions.

This must be followed by a program to analyze the interactions that are anticipated of each consumer segment and to assess whether existing capabilities are sufficient to leverage the new infrastructure in ways that support the new customer experience, including:

- Identifying customer wants and needs specific to each of the interactions inherent in a particular segment's customer experience
- Identifying the interactions that can be most effectively enhanced through participatory network deployment strategies

Companies will see long-term benefits from developing strategies now for leveraging valuable consumer intelligence that will be abundant in a participatory network.

- Defining new or augmented business capabilities and regulatory models that must be developed in order to translate technological capabilities into customer benefits; and determining which, if any, will be ceded to other providers for further development
- Integrating the development of specific new business capabilities into the participatory network deployment roadmap
- Communicating these new capabilities clearly and effectively to all stakeholders.

The outcome of this program will lead to critical decisions about the customer-facing business capabilities on which the enterprise will focus. Existing organizational strengths and new capabilities to be developed – one by one or in combinations – will form the basis for a broad menu of new products and services that the energy provider can offer. Each current (or potential) energy or service provider must be prepared to analyze the specific wants and needs of its existing (or expected) customer base to determine how customers want to see new products and services emerge, as different programs will appeal to different subgroups of consumers. After preferences are evaluated, they need to be applied to the customer interaction inventory in a way that identifies the interactions to be enhanced through technological improvements, regulatory change or improvements to communication channels.

Such customer segmentation and analysis will be new to many utilities. For early movers in particular, lessons will come from consumer-focused industries outside the utility sphere, including industries with some similarities

(other network-focused industries like telecommunications and cable), as well as those that are very different (like retail goods and banking).

This needs to be an ongoing process; customer assessment will not cease to be important after the participatory network is in place. The good news is that the data required to perform this continual assessment will be ubiquitous and arrive in realtime from multiple sources of value-generating insights. But with this capability comes a challenge – finding new and powerful ways to collect, assimilate and evaluate this torrent of new data to inspire new programs and products that appeal to an expanding number of increasingly involved consumers.

Strategies must be developed now to manage and leverage this new intelligence, setting the foundation for capturing, understanding, and meeting emerging consumer preferences in the long run. Being prepared for and acting nimbly during this transition can open new avenues for consumer satisfaction, create new revenue streams, define new business models and accelerate technology deployment – lighting the way to a participatory utility network in which consumers, utilities and service providers successfully share responsibilities and benefits.

To learn more about this IBM Institute for Business Value study, please contact us at ibv@us.ibm.com. For a full catalog of our research, visit:

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Related publication

Valocchi, Michael, Allan Schurr, John Juliano and Ekow Nelson. "Plugging in the consumer: Innovating utility business models for the future." IBM Institute for Business Value. Updated January 2009. <http://www.ibm.com/energy/plugin>

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