techblocks

Winning Strategies for Maximizing Operational Efficiency and Customer Service for Utilities and Green Energy Companies

A Changing World.

TECHBLOCKS WHITEPAPER

The world is changing faster than ever before. Consumers and businesses alike struggle to keep up with advances in technology and suffer from information overload. Today, utilities have more information and detail about their customers and their energy usage than they would have imagined possible even a few short years ago, but many energy companies struggle with turning information into actionable, usable insight to fuel effective operations and improve customer intimacy.

Consumers, meanwhile, are hungry for insight that can help them to change their energy use patterns to be greener as well as more cost-effective. Here again, insight is in short supply despite the availability of more data and technology. Weaned on mobile and web applications, consumers want information presented quickly in a usable format to help them make decisions quickly.

Both groups are grappling with the proliferation of "big data" – incredibly large volumes of detailed data from a variety of sources, captured in a variety of formats, and updated at a stunning velocity and frequency. The Internet of Things (IoT) enables equipment to collect data and report on its own status. New technologies such as sensors connected over the Internet provide near instantaneous readings from plant equipment, pipelines, and home heating and cooling appliances. Collecting the data is easy; collating the data points to provide useful insight is a far more complex problem.
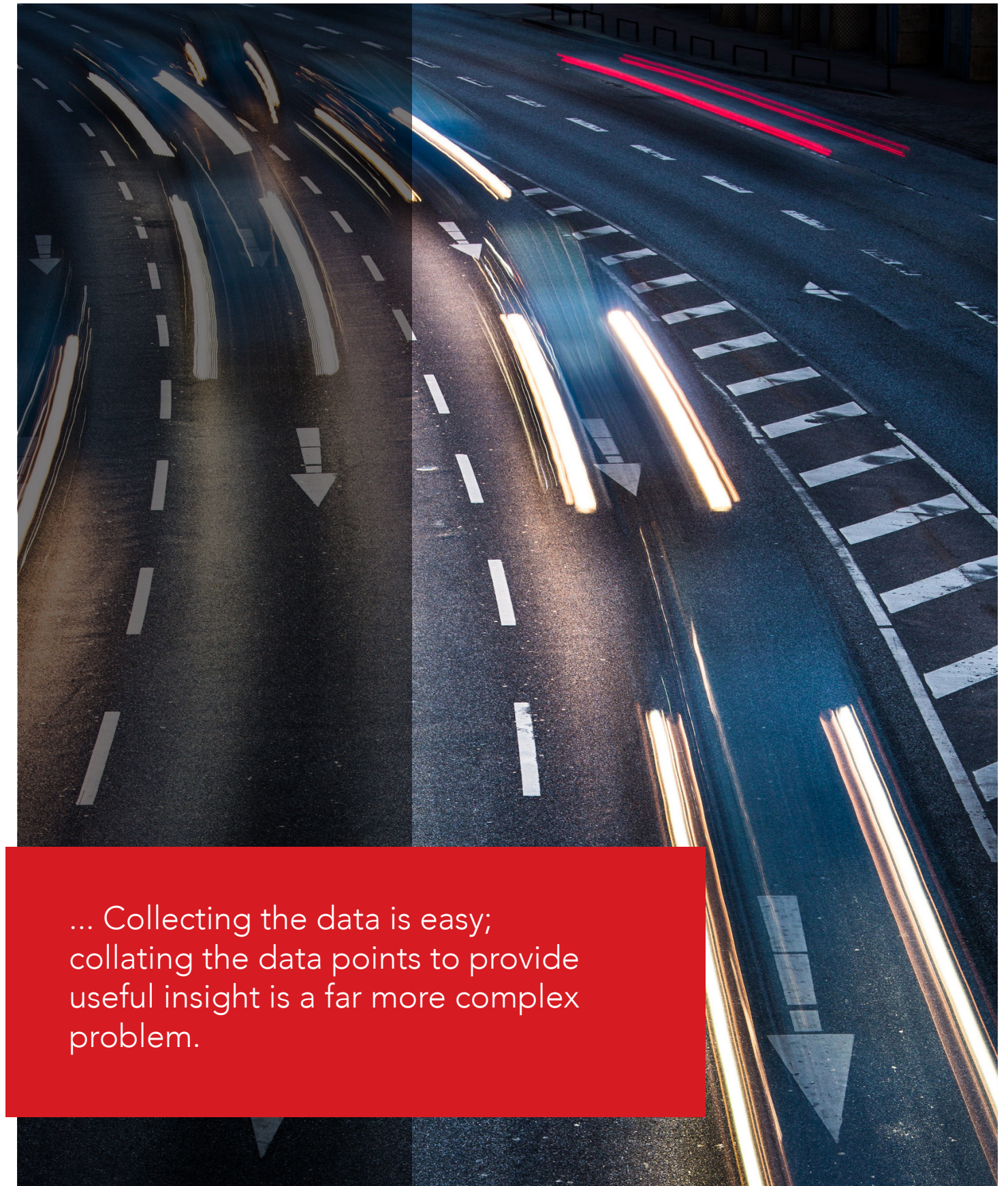
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The Three Major Challenges.

Advanced technology creates challenges for energy companies and utilities, but technology also provides the solutions to these challenges. In the current environment, challenges involve finding ways to use technology to
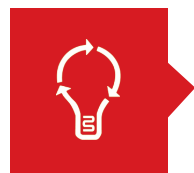
Seek and fuel operational efficiency

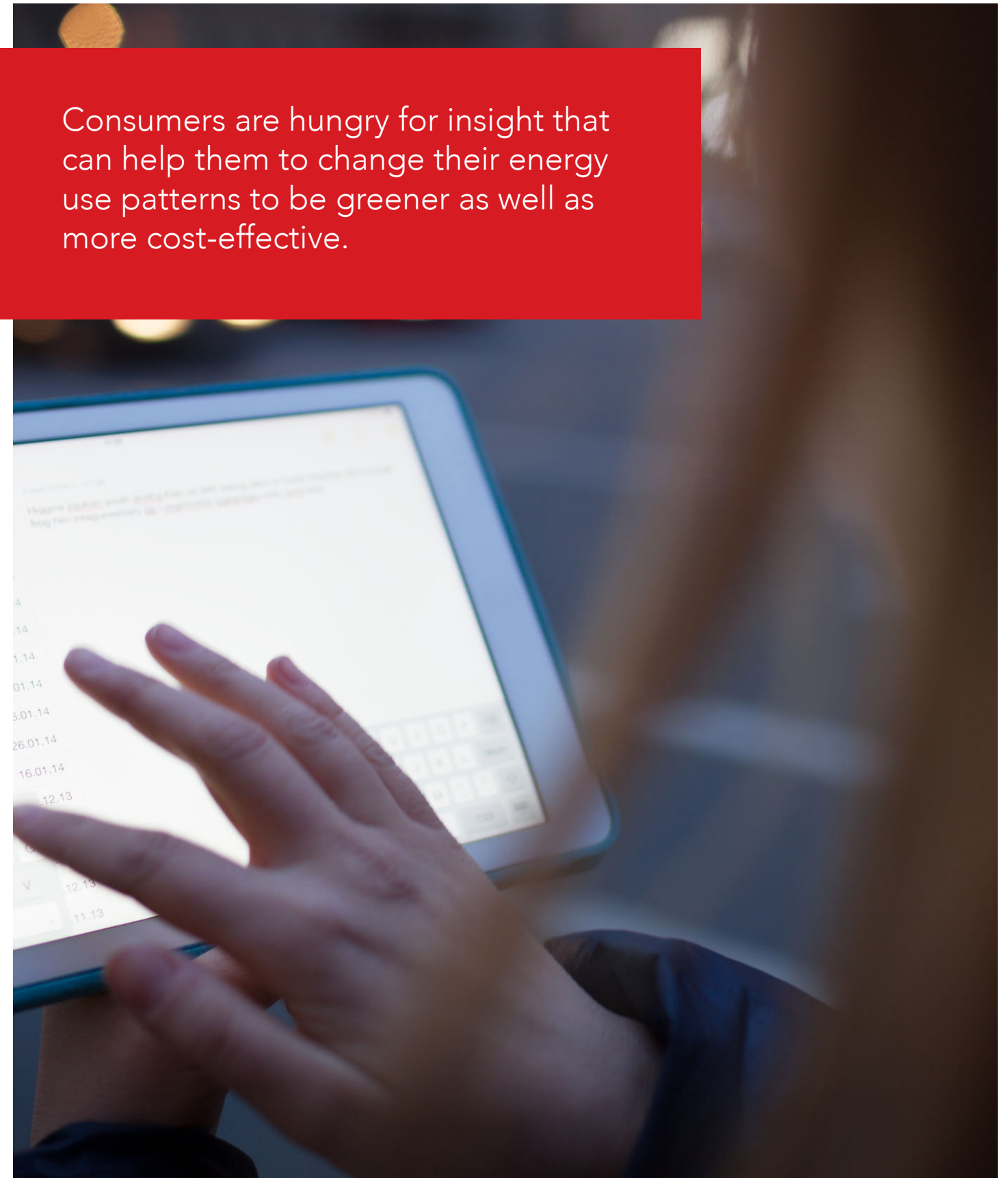Gain visibility and insight from big data

Increase customer connections by providing reasonably priced choices and convenience

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Seeking Operational Efficiency.

The economic climate today is a challenge in and of itself. Pew Research reports that 10,000 Baby Boomers will reach retirement age every day for the next several years. Despite U.S. Bureau of Labor Statistics estimates of slight declines in employment levels by power plant operators, it is no simple matter to replace retiring workers who have decades of hard-won expertise and knowledge. This is especially true as utility companies find themselves unable to source replacement workers with even basic skills and competing for the small pool of potential employees with expertise in new, greener energy production methods.

Industry infrastructure is aging, and new technologies offer increased efficiencies and simpler operation.

Without the resources to implement or utilize the increased capabilities, utilities may find that they are unable to accomplish their goals or projected returns from investment in upgraded infrastructure.

One solution to the scarcity of skilled resources is to turn to the cloud for business and operational systems. Cloud solutions free up technical resources that can be redeployed to other, more strategic projects, such as orchestrating the connected plant using IoT techniques, improving operations through an effective automated enterprise asset management program that improves productivity and reduces downtime by scheduling preventive maintenance at the least intrusive times, or taming big data until it yields hidden insights by combining data nuggets stored in both structured and unstructured data.

Business process modeling helps utilities to ensure that they operate at peak efficiency by eliminating redundant process steps and ensuring that they use the resources available to their best advantage. Fostering collaboration, whether with team members in a single location or located at sites around the world, enables utilities to take advantage of skills and expertise to develop unique solutions that improve customer service, conserve natural resources, and support profitability. Technologies such as video conferencing, electronic white boarding, project management, and team workspaces help the company reach its strategic goals, make the most of available skills and resources, and cut down on travel to save both costs and natural resources.

In addition, cloud solutions are flexible, adaptable, and accessible from multiple devices, enabling field workers to easily access information when needed.

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Gaining Visibility and Insight Using Big Data.

Big data is characterized by three attributes: volume, velocity, and variety. Traditional analytics solutions are simply not capable of providing timely insight when crunching through multiple terabytes of data. Since the data updates continuously in near real time, by the time conventional systems finish processing it, the information is out of date. In addition, conventional business intelligence tools work best with structured data. Important information stored in documents, presentations, and spreadsheets is inaccessible.

Big data analytics, on the other hand, is geared toward providing insight with fast processing and advanced data visualization that focuses attention on important insights. Newer in-memory databases such as SAP Hana, Oracle Database In-Memory, and other similar solutions offer insight in seconds rather than hours or days, without the complexity of constructing and populating data warehouses and specific queries. Sifting through multiple terabytes of data in disparate formats, these solutions uncover hidden relationships and causalities that enable utilities to make rapid, fact-based decisions.

Workers monitor information on dashboards in near real time rather than spending their time scrolling through query output.

Data visualization makes anomalies immediately visible, and techniques such as motion, color, and font direct the eye to areas in need of immediate attention.

Freeing up resources formerly used for mundane information technology tasks such as daily backups or maintaining users and printers by moving operational systems to the cloud may enable the company to use its data for better insight into greener operations or ways to help customers use energy more effectively. Big data and in-memory processing have the potential to enable utilities to achieve unprecedented levels of operational efficiency, to identify new energy sources quickly, and to prevent excessive downtime by predicting equipment breakdowns before they occur.

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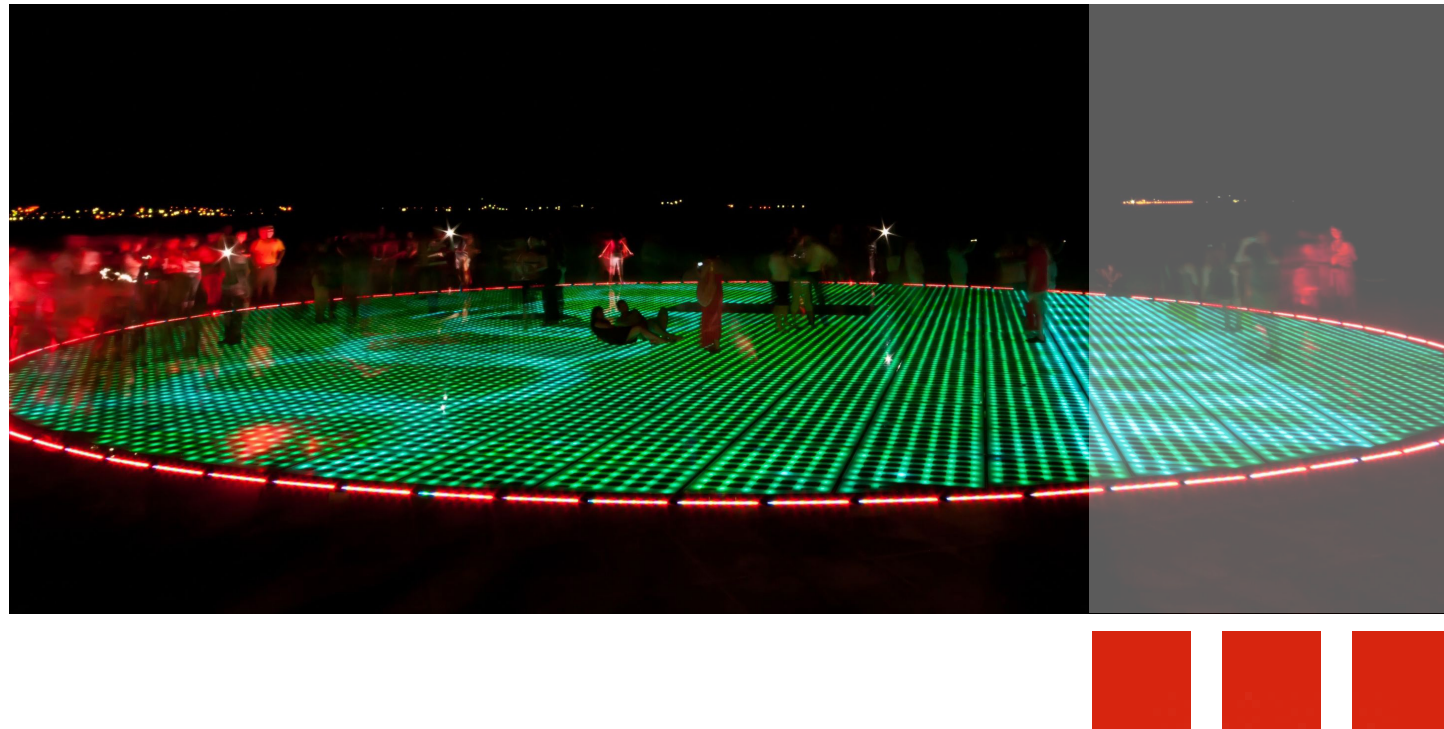
Customers Want Choice, Convenience, and Affordability.

Utilities and energy companies rarely had much interaction with customers until recently. Changes in the regulatory environment mean that most consumers have a choice in their energy provider, so it's important to prevent churn by developing customer engagement methods that address consumer needs.

Customers are interested in sustainability, green energy solutions, and controlling their energy expenses. When utilities use technology to address these consumer concerns, it's a win/win for both. However, consumers have no patience for slow service, telephone hold times, or web pages that don't load quickly. Indeed, more and more consumers choose to use mobile applications whenever possible. Recently, BizReport noted that consumers are turning to mobile apps more often than the Internet, and they predict that 2015 will be the "year of the mobile app."

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Conclusion.

Utilities and green energy companies looking to forge stronger relationships with customers and improve operational efficiency should consider technology as a cost-effective way of meeting these goals by addressing some of their toughest challenges. Cloud-based solutions can free up IT resources for more strategic projects, such as developing big data solutions or mobile apps. Both the utility company and its customers benefit from this approach, and both gain much-needed insight into costs and usage patterns that can reduce energy consumption and result in greener energy usage.

Utilities looking to forge stronger relationships with customers should consider deploying self-service portals and mobile applications that allow users to monitor energy usage or equipment performance. For example, several manufacturers, including industry giants such as Emerson and Honeywell, offer Internet-connected monitors for home heating and cooling equipment. Such sensors send alerts when they detect deteriorating performance, potential failures, or even the need to change filters.

Other applications, such as Siemens Smart Grid, allow users to control temperature and lighting in the home from their mobile devices or to compare energy usage and rates to conserve costs by operating equipment such as dishwashers during off- peak times. Fort Collins Utilities, in Fort Collins, Colorado, deployed a mobile app solution to its customers and found the level of customer engagement, interaction, and satisfaction increased.