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Smart Meters to Power the Energy and Utilities Sector

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Energy today is much more than a mere natural resource; it is considered as a geopolitical, economic and strategic resource. The world is also waking up to the realization that uncontrolled energy consumption can have adverse effects on the environment. With this as the backdrop, companies operating in the Energy and Utilities sector are facing serious challenges in trying to keep pace with the complexities and the challenges in the business of Energy and Utilities.

According to Everest Research, utilities companies are under pressure trying to deal with increased regulatory systems, intensifying competition, and informed and demanding consumers. In addition, the industry needs to respond to the challenges of aging infrastructures and new technology. A combination of these factors has led to the development of a new distribution model, the smart grid (with the smart grid technology at the core) that allows generators, suppliers and consumers to be integrated by intelligent control, monitoring and communication of energy consumption.

A vital component of the smart grid is the smart meter – an energy meter that records the consumption of electrostatic potential energy in intervals of an hour or minutes and communicates this data to the utilities player for billing purposes. It enables a two-way communication between the meter and the central system. Unlike home energy monitors, smart meters can collect information for remote reporting. This Advanced Meter Infrastructure (AMI) makes smart metering different from the traditional Automatic Meter Reading (AMR). These smart meters, with In-Home Displays (IHDs) will allow consumers to see and adjust in real time how much energy they are using. The rollout of smart meters began in early 2000 but took on significance in 2009, when the United Kingdom's Department of Energy and Climate Change announced its objective to install smart meters in all homes by 2020.

Switching to Smart Meters

The deployment of smart meters is fast gaining popularity world-wide. Pike Research reports that the global full year shipment of smart meters was 73 million in 2011. China has seen a massive deployment of smart meters and has in fact, driven as much as 71 percent of this annual volume. Significant expansion was witnessed in the United States Consumers Energy announced that it would use SmartSynch's communications network technology for the 1.8 million smart meters that will be starting in August 2012. In Canada, Hydro-Quebec chose Landis+Gyr to supply most of its planned 3.75 million smart meters, while BC Hydro selected Itron to provide 1.8 million OpenWay meters over the next two years.

The U.K. Parliament declared that between 2014 and 2019, Britain would roll out more than 50 million new smart meters to 30 million homes and businesses in the country. More than eight million smart meters have been deployed by United States' electric utilities with 60 million expected to be in use by 2020. The shift to using smart meters is expected to revolutionize relationships between energy suppliers and their consumers.

It is important to gauge the pros and cons of implementing smart meters.

The main advantages of using smart meters are:

- **Control over consumption and cost:** Smart metering will provide customers and businesses real-time information on usage. It will show the exact usage of each appliance and will also help budget the energy bill.
- **Accurate billing:** Smart meters will ensure transparency for consumers to control their energy consumption: The era of estimated reads will be done away with, reducing the burden on meter operators collecting meter readings manually.

- **Innovative pricing models:** Over time, smart meters will help define energy consumption patterns that will enable the industry to develop multiple tariff offers (as in the mobile phone market).
  - This will give consumers the choice of selecting a provider best suited to their individual needs.
  - With accurate information, suppliers can work with generators and infrastructure providers to create a stable balance between energy demands and supply ensuring a sustainable environment in the longer term.
- **Environmental benefits:** With advanced control and communications, peak load diminution and the amount of energy supplied will be possible. This will, in turn, reduce unnecessary energy consumption and reduce CO2 emissions. Smart metering will also aid in effectively integrating renewable energy sources such as solar panels and windmills.

There are consumer reservations on the deployment of smart meters:

- Studies conducted by doctors in January 2012 state that there are health hazards that are caused by wireless radiation, especially to those individuals who have metal (prosthetic devises, pacemakers, insulin pumps and so on) in their bodies. However, these studies remain inconclusive.
- Another concern is that the use of smart meters can lead to data misuse, as it discloses the behavior of citizens inside their residences, and this can be exploited by unauthorized users. Hence, there is a need to formulate and implement adequate cyber and privacy regulations.
- There is also one faction of consumers who believe that there could be billing inaccuracies. The accuracy of smart meters is dependent on a Analog-to-Digital Converter (ADC) chip, interfacing of power lines with meters and the measurements by the Analog Front-End (AFE) team. There is a possibility that billing inaccuracies can take place, if there are problems with the AFE.

Utilities and Outsourcing: Building the Smart Metering Grid Together

The Utilities industry is grappling with operational issues, namely inefficient processes, manual procedures and outdated technology. There is a growing need to reduce operational costs, increase customer retention, optimize load management, enhance meter data management and meet regulatory demands.

Utilities players have had to face increased competition due to the de-regulation of retail utilities markets world-wide and are struggling to maintain their customer base. In addition, customers are more informed and demanding and expect rapid issue- resolution, improved customer service and accurate billing. It is important that excellent business processes are fused with customer-first Customer Relationship Management (CRM) strategies such as proactive communications and user-friendly technologies. By partnering with an experience Business Process Outsourcing (BPO) provider like WNS, utilities can realize productivity-related benefits and reduce their overall cost-to-serve per customer and thereby improve their price competitiveness.

For the utilities sector to remain viable and strong, future-proof business processes are an absolute requirement and this is especially so with respect to the Meter-to-Cash (M2C) process. The Everest Group estimates the potential of M2C BPO to be nearly USD 50 Billion to USD 70 Billion globally, but current penetration remains in the low single digits. The best way to optimize the M2C process is by partnering with an experienced outsourcing player. The M2C process has requirements specific to the utilities industry such as meter data management, smart metering, field services, customer billing, multiple legacy systems and inconsistent meter reads. BPO companies can provide technology platforms that allow for M2C processes to be delivered by utilities companies without any upfront capital expenditure. BPO firms can help standardize processes that result in enhanced performance.

Another essential task for utilities is to streamline their processes in order to support the rapidly increasing smart meter implementation. An experienced BPO service provider can offer pre-implementation services by conducting a feasibility analysis and building an execution roadmap. Implementation services include work order management, device and meter data management, and meter provisioning support. BPO service providers can also offer smart metering analytics support allowing utilities to gain from the data explosion created by the smart meter network.

Managing smart metering services is a challenging and expensive operation but can deliver significant advantages if done effectively. In order to boost business performance, utilities should look at working together with BPO firms like WNS that have domain expertise and gain from their process expertise to overcome challenges.

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