

Proactive management of energy usage

Economic slump or not, efficiency is the key to effective resource management. So how do we create efficient networks? By going smart, says Alcatel-Lucent

To improve operational efficiency and to help understand usage behavior in real time, smart grid is easily becoming the “go-to” system. In Washington, D.C., for instance, a smart grid project involving smart meters, smart thermostats, dynamic pricing, and enhanced energy information reduced peak demand by as much as 51%, among other significant results.

To find the optimal approach to smart grid projects, however, utilities need to consider factors such as available infrastructure, geography, frequency of data reads or updates, data volume, information sensitivity, and prioritization.

The network needs to be dynamic, secure, and adapted to support increasing numbers of smart grid applications. To drive operational decisions, it has to reach the entire grid, collect real-time data, deliver data to operations systems, manage the volume of data, and enable data analysis and correlation. Critical components are:

- a network infrastructure that enables

real-time communications throughout the entire grid;

- data processing systems able to correlate and analyze the resulting large amounts of data;
- management tools with end-to-end visibility to better analyze and proactively manage events; and
- asset management systems to track individual assets, maintenance schedules and warranty information, and integrate with physical and logical topology, event management, trouble ticketing, dispatch and work management systems.

It is essential that smart grid data can be organized, filtered and analyzed according to many criteria: power consumption, operational, system status, and events.

Meter data management systems must reliably collect, process and store data for the purpose of calculating billing determinants. As well as being critical to meter-to-cash business processes, meter data management can also be highly strategic.



Heart of the smart grid: communications technology from Alcatel-Lucent

It encourages consumer participation in time-of-use pricing, demand response, distributed generation, market settlement, rate plan modeling, rate program design, strategic planning, and operational efficiency. It transforms power consumption data into business-critical information used to manage consumption patterns and increase reliability and efficiency. www.alcatel-lucent.com