

The Changing Utility Workforce and the Evolution of Utility Design

AMI. AMR. Smart Meters. Smart Grids.

What's the difference? And who cares? Aren't they all just new ways to measure consumption and collect billing data?

That narrow view of advanced metering can throw a monkey wrench into utility plans for a cost-effective IT future.

Metering as Disruption

Analysts are fond of pointing to "disruptive technologies" that fundamentally change the nature of what we do and how we do it. At first glance, advanced metering hardly seems disruptive. Many utilities view it as merely the latest step in the slow but steady evolution of metering from single-read to time-of-use meters, from meters read by individuals to meters read through radio signals.

This view is simply incorrect. Advanced metering is no mere evolution. It is a fundamentally different approach to utility operations. It can provide data quantity and quality that profoundly change utility revenue, customer interaction, and service delivery.

Advanced metering can and should change the way most utility departments operate and the results of those operations.

Revenue and Service Potential

Let's look at some examples of the ways advanced metering can alter the utility business.

In terms of finance and revenue, advanced metering can:

- Significantly accelerate cash flow. By automating and integrating all meter-to-cash business processes, advanced metering cuts days or weeks from the cycle.
- Enhance revenue protection. Advanced metering helps prevent bad debt by facilitating use of prepayment meters. It also enables consumers moving out of the area - from whom it is typically hard to collect - with a way to pay a final bill with one simple Internet transaction or call to the contact center. It reduces the size of overdue bills by enabling remote disconnects; there is no need to wait for crew availability. And it flags anomalies like sudden and unexplained consumption increases.

Overall cost reductions can be even more significant. Advanced metering can:

- Slash the cost to connect and disconnect customers by doing so remotely. The consequent reduction in field crew workload also reduces the liability and insurance costs associated with sending workers onto private premises.
- Reduce contact center costs. Advanced metering dramatically reduces the number of estimated bills and the associated customer calls. It provides customer representatives with the solid information they need to resolve high-bill complaints during the first call. Better still, utilities can encourage customers to answer their own billing questions by populating customer Web portals with advanced metering data.
- Cut costs needed to manage the distribution grid. Advanced metering can pinpoint blink-outs, thus reducing unnecessary tree trimming. It also provides the data through which network managers can analyze and improve block-by-block power flows. Results include lower transformer costs, increased throughput, and reductions in grid over-building.
- Fine-tune supply portfolios by using similar analytics.

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Advanced metering improves service by:

- Identifying and sizing outages quickly, thus speeding restoration. Advanced metering also provides customers with near-real-time updates on outage location and expected duration.
- Detecting voltage fluctuations.
- Helping large and small customers analyze consumption and, if they choose to do so, reduce usage and bills.

Advanced metering permits utilities to offer such new services as:

- Property monitoring - that is, notifying landlords immediately about energy or water consumption at supposedly vacant properties.
- Equipment monitoring - analyzing consumption readings for evidence that equipment needs maintenance or replacement.
- Home and small-business networks. In the long term, advanced metering can act as a gateway to networks that control appliances and facilitate the use of site-generated renewable energy.

Of major importance to the public and to government bodies are the contributions advanced metering can make to the environment, such as:

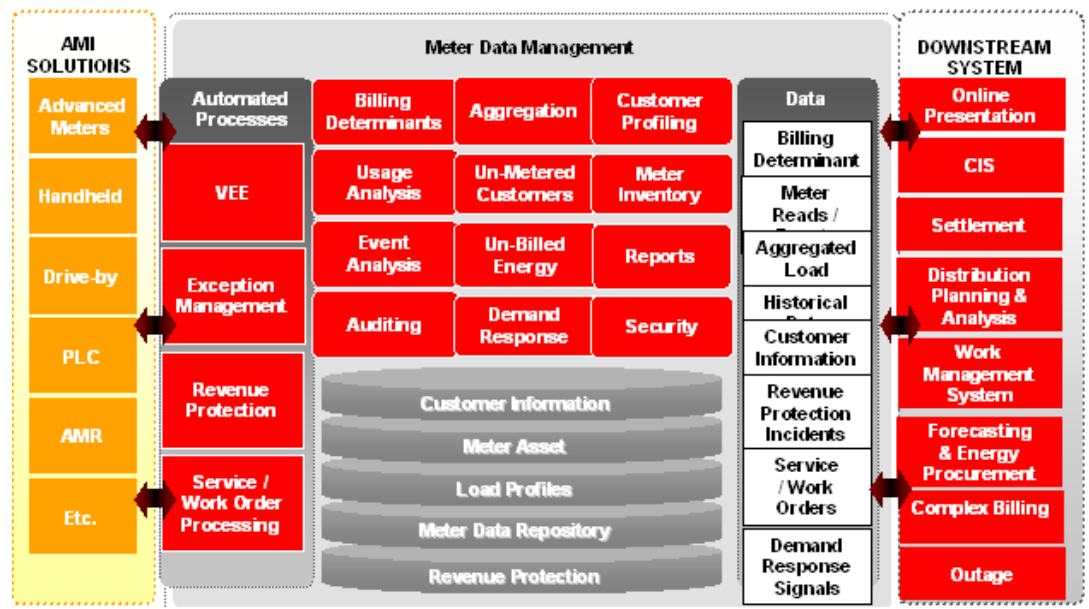
- Leak detection, as evidenced by interval water or gas reads that never drop to zero.
- Facilitation of initiatives (demand response, load control, critical peak pricing) that reduce energy-associated air emissions by encouraging conservation and more complete use of existing base power.

Design for the Future

The potential for bottom-line advanced metering contributions is all but limitless. Utilities will realize those contributions, however, only if, from the outset, they design IT structures that get metering information to every department that needs it, when it is needed, and in the form required.

Advanced metering will not mean identical applications and business processes at every utility. Utilities can achieve many of the benefits listed above using other applications - a robust CIS, for instance, or integrated outage and mobile workforce applications. Most utilities, however, will likely find that advanced metering opens at least some new options for efficiency and customer service improvements.

Performing a full business process analysis prior to implementing advanced metering is essential. Without this analysis, utilities in the short term risk under-designed systems that deliver only a subset of potential benefits. Longer term, failure to grasp the disruptive potential of advanced metering will almost inevitably lead to unplanned expansions, stranded and excessive costs, and long-term business inefficiencies.



Successful Advanced Metering frequently requires the services of a meter data management application to ensure the rapid, complete, and real-time delivery of needed information to every utility department.