The Digital Utility

EXECUTIVE SUMMARY

Sponsored by: Capgemini

Jill Feblowitz
September 2013

Global Headquarters: 5 Speen Street Framingham, MA 01701 USA P.508.935.4400 F.508.988.7881 www.idc-ei.com

THE DIGITAL UTILITY: FINDINGS AND RECOMMENDATIONS

On behalf of Capgemini, IDC Energy Insights conducted in-depth interviews with 14 executives in distribution and IT from 12 North American utilities. The interviews covered such topics as business and IT priorities, key trends and concerns, internal and external decision making, and management structure. Secondary research supplemented the interviews.

Although each utility had different explicit priorities, a number of high-level themes emerged. Utilities have invested heavily in smart meters and distribution devices but have yet to realize promised and expected benefits from these investments. Recent publicized outages have demonstrated the importance of establishing a new relationship with customers, aside from the monthly bills. Promised developments such as distributed energy and electric vehicles remain over the horizon, and few utilities have been proactive about planning and understanding the impacts they will have.

"With the advent of DMS and SCADA and control systems, IT is really no longer that back-office support organization; they are a critical operational partner to the business. Those IT assets are just as important as the trucks that roll out in the field to go do things." — Engineer, Grid Modernization

Specific findings from the interviews are:

- Customer satisfaction is the top business priority, with reliable service delivery and operational cost reductions close behind.
- Distribution optimization leads business-related IT initiatives.
- Utilities continue to work on realizing value from their smart meter implementations.
- Analytics will be the trend with the most impact over the next five years.
- Given recent events, utilities are learning the importance of social media and multiple customer communications channels.

- Security and privacy remain high priorities.
- Only a few forward-looking utilities are addressing the convergence and coordination of IT and operational technology (OT).
- Little future-focused work has been done on business processes.
- Utilities are not prepared for distributed energy impacts.
- Receptivity to services and data in the cloud is increasing, but adoption is far from widespread.

On the basis of these findings, IDC Energy Insights identified three key recommendations for utilities seeking to become the high-performing digital utilities of the future.

"The problem with typical electric vehicles is you don't know where they're going to end up, and you don't know how it's going to affect your grid, but you can pretty much guarantee that they're going to show up exactly where you don't want them." — Director of Application Services

Recommendation #1: Optimize the Distribution Grid

Utilities need to anticipate the impact of intermittent resources, electric vehicles, and distributed energy resources from supply, storage, and demand perspectives.

The complexity of grid management will increase in the near future with distributed energy, demand response, and increased penetration of electric vehicles. Distribution optimization provides benefits such as reliability, efficiency, and proactive grid management. Utilities should evaluate their current distribution management systems (DMS) for function and integration with other operational systems. In addition, utilities should develop a framework for the evaluation and assessment of extensions to their DMS to support advanced analytics such as forecasting, predictive load, simulations, and optimization. One specific capability that should be considered is the integration of demand information with geospatial visualization tools.

"The reclosers we have today, which are in the hundreds, will be in the thousands …. All of this information is needed in the distribution management system, which really is the brains behind the smart grid. We have capabilities and applications that will be using and needing this data to optimize delivery of power to our customers." — Manager, Distribution Management Services

As utilities need to make infrastructure investments to support optimization, they will need to model the business cases for these investments, including infrastructure upgrades required and alternative revenue models.

Recommendation #2: Engage with Customers

Utilities need to consider the redesign of current business processes and systems to leverage customer information and multiple communication channels.

In many utilities, customer support and marketing are already using social media in a manual way to notify customers of outages and other events. These social business channels in Facebook, Twitter, YouTube, email, and instant messaging will become an important bidirectional way for utilities to educate, motivate, and interact with their customers. This engagement is important to achieve utility goals of reliability, efficiency, and customer satisfaction. Managing communication and customer expectations during outages is especially valuable.

"[Customers] actually want more information from the utility in real time. If there's going to be a planned outage, they want to be informed of that ahead of time with Twitter and Facebook…. We're making a concerted effort to have this two-way communication dialogue with the customers and keep them as informed as possible." — Manager, Distribution Management Services

Utilities need to develop an understanding of the business case, road map, and business process changes required for multichannel social communication. Utilities should consider the best ways to integrate their existing operational systems (specifically CIS, MDM, OMS, and WAMS) with social media information and mechanisms. One specific example is to provide customers with up-to-date outage restoration status on their social communication channel of choice.

Recommendation #3: Recognize That Analytics Can Deliver Many Benefits

Utilities should develop a strategy to address people, processes, technology, and data to get significant value from analytics. They need to recognize where analytics can provide business value and implement tools and templates to take advantage of it.

Currently, most analytics are project based. In the near future, there will be opportunities for utilities to capture and analyze large quantities of both structured and unstructured data. One example is that analytics can help deliver the value from recent utility investments in smart meters and distribution automation equipment.

"The executives from all different groups … understand the power of data, and they're trying to use data to make their organizations more efficient and not only provide better service to their customers, whether it's internal or external customers, but also to give them the opportunity to free up FTEs as budgets continue to be tighter and tighter." — Director of Application Services

From a technical architecture perspective, operational decision support systems should be considered to provide a platform for analytics that will not impact the function and performance of the operational systems.

Although managing the quantity and velocity of utility data can require "big data" systems and techniques, many benefits can be derived with advanced analytics on top of data systems using current storage technologies.

SUMMARY

Based on these findings, we recommend that utilities begin the planning process for these upcoming impacts. Models are needed to understand the specific benefits, the investments required, and the process changes required to successfully and efficiently implement these projects. By being proactive, utilities can progress toward becoming high-performing digital utilities of the future.